Research Methods training Manual

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1. INTRODUCTION TO RESEARCH METHODOLOGY

INTRODUCTION

Our lives are flooded by news and information, by opinions and by piles and piles of papers and documents.

We switch on the television. We hear from the announcer that, according to a journalist of the *Sowetan* Newspaper, there are growing tensions in the KwaZulu-Natal countryside between supporters of different political parties.

We shake our heads. We switch on the radio and already there is a phone-in programme about the 'ethnic tensions' in the province and we hear somebody expressing her opinion that these tensions are inevitable because she knows that "the Zulu are violent people". Most of us enjoy phone-in programmes, there is a feeling that we can all express ourselves through them. Listening to them, there is a sense that South Africa is talking and talking directly to everyone.

We want to phone-in our opinion. Some of us realise that we cannot because we have not paid our telephone bill. We return to the TV, frustrated that our special insight about the tensions in the KwaZulu-Natal province has not been expressed.

On the screen we see war veterans somewhere in Zimbabwe dancing in front of a burnt-out farmhouse. Over the next few days the newspapers are flooded by opinion-letters about the 'situation' in Zimbabwe. Some of us are stirred to write. On the next page of the newspaper we read that a politician has been found to be corrupt. The photograph shows a smiling policeman. It is only when we read the caption underneath that we realise that his smile is not because he had won the Lotto but that he was promoted after his great work around corruption.

Some of the images, news and stories are based on feelings, some are opinions but some of them, we are told, are based on a systematic investigation or a methodical inquiry. Usually the word 'research' crops up. Somehow, we realise, research involving a systematic investigation of some issue has to be separated from feelings and opinions.

For example: we see Professor Moss on TV who proudly announces that, based on his research findings (his own investigation) the standard of living in South Africa has improved at a rate of 10% a year since 1996.

Usually we go silent: no phone-ins, no protests to the press. After all, Moss is a 'Prof' and he is not telling us about feelings or opinions, his talk on TV is based on research. Our silence occurs even if we think that our lives and our neighbours' lives have been on a downward slide. Perhaps what we understand by 'standard of living' has not been improving.

RESEARCH METHODOLOGIES

To return to our introduction: our original response to be 'silent' about research findings is only partly correct. Research is usually based on a systematic investigation carried out by somebody like Moss, or by teams of researchers. In most cases it tries to tell us something that we do not already know.

In this course we will develop the tools and the critical ability to question research findings. We need to have the confidence to say that a piece of research was well done or badly done or to be able to stand up and say that the effort was nonsense, that it was not worthy of our attention or energy. To do this we need to understand the methods that researchers or experts use to gather and analyse the information they present to us, and the limitations of these methods.

Researchers claim they are professionals and experts. They also claim what distinguishes them from other experts is their application of scientific methods in their effort to gather and process information. In much of this course we will deal with the two main types of research methods used: quantitative and qualitative methods.

QUANTITATIVE RESEARCH

Quantitative research refers to a broad area of investigation that generates and uses data (or information) with a distinctive quantitative nature. Data (or information) that can be represented by numbers, and to which various statistical techniques can be applied, are quantitative. For example a quantitative research report may tell us that 11% of all South Africans are HIV-positive. Quantitative research usually involves collecting and analysing the responses of a large number of respondents (usually people or households). The results of quantitative research are frequently generalised beyond the set of respondents interviewed.

In principle, quantitative data are compatible with various research designs and with various data-gathering methods. In practice, quantitative research has been associated with rigorous and clearly specified research designs, using the survey method of data gathering,

Let us return to the case of the HIV/AIDS statistics. If not everyone in South Africa has revealed their HIV status, where does the figure of 11% come from? How did the researchers get to that figure? Perhaps the answer is from blood samples and tests. But surely they have not taken blood from all of us? We will deal with the techniques involved in this type of research in the later sections of this manual.

The most common data collection method used in quantitative research is a survey. For example, in a study conducted by the Community Agency for Social Enquiry (C A S E) in 2000, the living conditions, opinions, attitudes and wishes of young people in South Africa were examined. The researchers interviewed a systematic selection of 2500 young men and women throughout the

country and then extended the results to all youth in South Africa. The most common instrument used in a survey to collect data is a structured questionnaire – a series of questions that usually have pre-determined answers, and the respondents choose between them.

QUALITATIVE RESEARCH

Qualitative research usually involves the collection and analysis of in-depth information on a smaller group of respondents. For example, we may know that people in a certain community where HIV/AIDS is prevalent do not talk about the disease. We could find, by having detailed conversations with a number of people in that community, that the reason for their reluctance to speak about the topic is their fear of being stigmatised. Usually the results of such qualitative research cannot be generalised beyond the respondents who contributed to the study. For example, we would not be able to say which proportion of the people in the community, or broadly in the province or country, do not speak about HIV/AIDS for this reason (fear of stigma). However, we may be able to identify *one* reason for silence on the topic and explore it further.

If done in a sensitive way qualitative research may allow us to distinguish between what people 'say' and what they 'do'. Sometimes we say one thing but our actions are exactly the opposite. A sensitive researcher who is accepted in a community might observe such discrepancies. For example, despite what people say about crime, that they are all against it, some people in South Africa help and harbour criminals and criminal activity. Research suggests that many people in our country know criminals and has good relationship with them. This tension between what we believe and say on the one hand and what we do on the other, is an interesting and complex research topic in its own right.

Frequently researchers use a combination of qualitative and quantitative methods, in order to provide a more complex understanding of a social problem.

AN EXAMPLE OF A RESEARCH PROJECT

Let us suppose that Prof Moss is approached by the CEO of a Music company that produces CDs, after the CEO was impressed with his appearance on TV. The CEO wants to find out whether there is a strong market for masakanda music in the country. His wife loves masakanda music and she says that he is mad not to sign up masakandi musicians in his company.

Prof Moss thinks that this is a wonderful research opportunity. To produce a good report he feels that he has to combine quantitative and qualitative methods of research.

His research report could be something like this: masakanda music is popular in KwaZulu-Natal – 55% of residents of Zulu descent in this province rank it as their first choice above gospel, ballads, jazz and R&B. But this figure declines to a 10% preference in all the other provinces. A

further interesting finding is that despite the above, there is a growing international market for masakanda among Japanese youth.

The qualitative aspect of his research will also add to his understanding of the situation: the reasons for the enjoyment of masakanda music has to do with the content of the lyrics and the guitar sound, it speaks to their lives. For those who do not appreciate it, it feels too ethnic, too low-class and too influenced by particular conditions. For the Japanese youth, words are irrelevant; they simply love the sound and the mournful voice of the singers.

So Prof Moss, in combining quantitative and qualitative methods of investigation, has provided the CEO of the CD-company with a piece of research that is bound to make him think. Do I risk money on the basis of this information, or not?

To answer this question the CEO would have to consider a number of issues: how was the research designed; what were the precise questions that were asked; who was included in the study and according to what criteria; when and where exactly was the research conducted; how representative are the findings; how competent were the data collectors (fieldworkers) and how tightly were they supervised; how reliable and valid are the results. Answering these questions requires knowledge of specific details of the research project and an understanding of the strengths and weaknesses of different research strategies. These issues will be covered in subsequent sections of the manual.

Nevertheless, the objective of this first introductory lecture was to make a specific point: that good research, research that is reliable and valid, informs sensible action. It is therefore important to understand how research is constructed, what are its methods, how it organises findings, in order to be enabled to act sensibly.

RESEARCH IN CONTEXT

In this section we shall explore the relationship of research to:

- Knowledge in general
- The systematic methods it uses to produce knowledge
- The ‘field’
- Power in society
- Its claims of being a reliable and trustworthy effort.

We will do so because researchers claim that they increase and improve our knowledge, and provide through their findings a unique service that benefits society. Before exploring these issues it is important to introduce you to four social researchers. They are Mr Dumisani Dube,

Mr Mark Walters, Ms Geraldine Fraser and Mr Philemon Silva. Let us look at their work by taking each one of them by turn:

Dumi Dube is a fascinating young man. He grew up in KwaMashu and did not get a very good education. In fact it has been so bad that most of the doors of learning have been closed to him. He learnt his craft from his mother and his grandmother who taught him how to love and appreciate his culture. In turn, for the last eight years he has been walking up and down KwaZulu-Natal collecting izibongo poems about the kin, the clans and chiefdoms of this province. He has also gone about collecting no less than 176 praise poems for indigenous plants, their medicinal, human and animal usage. He is now collecting stories and parables about health and food preparation. He is a walking and orating Zulu encyclopaedia. Whomever he meets he tells them what he knows and asks for their version of what he knows, and he allows his versions to grow and grow. He is not linked to any University but he has found a home now in the African Renaissance initiative in the Province.

Mark Walters is a sociologist. He walks the streets of Durban and interacts with the 'down and outs' in the streets. He does not publish what he finds out because he is scared that the authorities will use the findings in order to remove them from the city centre. He follows them into their shelters, shares drinks and food with them, finds out about their stories, their backgrounds, their coping mechanisms. And he is concerned to prove for himself that the moral economy of the poor is an active element of street life. He only uses his material in his lectures to challenge students about the dignity of the people they look down upon.

Geraldine Fraser is also a social scientist. After working on Police Transformation committees she decided to do her Doctoral thesis on how the police is changing in the new South Africa. To do so she has been allowed to study the highest impact unit: the public order policing unit. But to do so she did not only have to interview them one-by-one but also to go out into the field with them: watch them operate, watch them control crowds, chase after criminals. At the end of all this high exposure she is supposed to analyse the transformation and its success.

Philemon Silva coordinates a team of 60 researchers who are running around the country interviewing nurses. The Democratic Nurses Association (DENOSA) requested him to conduct a survey to find out what the major problems its black and white members are confronting in the hospitals, in their profession and with each other. So more than a thousand nurses are being asked the same questions everywhere. Although DENOSA agreed that Silva can use his own independent skills to do the study, they expect a report that will help this new COSATU affiliate.

So here we have four people, doing different things, doing them in their own way but if we ask them what are they doing, they will reply: Research.

KNOWLEDGE

To return then to the themes of this section: in which way are these four people contributing to our knowledge in general? Before we turn to their answers to this question let us think together:

Dumi Dube's response would be as follows: the knowledge systems are out there, surviving as bits and pieces in the African communities of the province. Although each person he encounters knows a little piece, the person does not know all the pieces. As he is learning from others he is also sharing and teaching them what other people told him that they know. So his contribution is, as he sees it, to reclaim value for indigenous traditions before they get destroyed.

Walters is caught between the University where he teaches and the theories about people on the one hand and life in the streets on the other. His claim is that Sociology must not just theorise about people or what people are compelled to do but it should go out there and learn from the people, especially from the people that a society downgrades and devalues. By learning from them you also know how a system operates and you can improve your understanding of power and society.

Fraser would argue that to understand transformation and the transformation of power you have to study the organisations where power is concentrated and exercised: the police. And she would say because the police service is an authoritarian organisation with strict codes of discipline it can change the behaviour of its people by demanding it of its rank and file. Police-men and women will obey and adjust their behaviour but their culture and belief systems remain the same. In any crisis they will behave in the old ways despite appearances. So her contribution would be the insight that unless deep cultural transformations happen, changes in policing are mere decorations.

Silva would say that by interviewing so many nurses the organisation will be able to identify the key problems that its members face: although the organisation is democratic, seniority and rank among nurses are important; although the organisation is non-racial, racial attitudes are hardened; although it is there to serve communities, most of its members would not administer abortions because they are against them; although the organisation is community-conscious, most of its members are ready to emigrate; although they are unionised the members would rather belong to a strong professional association. Although, finally, most blame the ANC for the deterioration of hospital services, they see no electoral alternative.

In short, each one claims to be providing us with more facts, more findings, more awareness or knowledge.

SYSTEMATIC METHODS

Each one of the researchers uses a different method. To be brief:

Dumi Dube is using a qualitative method of research. Steeped in what he already knows he greets a new person respectfully by providing his own isibongo. When he hears the other's he informs the other that he has heard that his kin or clan also use a different imagery to describe their line. Amused, the respondent justifies the difference by explaining how the lines were broken during Dingiswayo's times, and so on. He then adds that if you were of this clan then you would have had the following plants around your homestead. Not us, the other would say, what my mother told me is this … and … that. Dube is out to speak to as many people as possible in case something is lost. But his method is qualitative. It is based on face-to-face communication and the importance of oral memory.

Walters is also using a qualitative method of research: talking, observing, joking, commiserating. He is enabling the people to tell their story or what they want to say about their story. He lets them show him what is important in their daily life and he prompts them every now and again with someone else's story. He lets them describe the dangers, fears and challenges of the street. As long as they are poor and homeless in Durban, he speaks to them.

Fraser is combining qualitative with quantitative methodology. She has done a survey of more than a hundred respondents, asking them all the same questions so she can say 60% of those interviewed say ‘this’ or ‘that’. She uses qualitative methods as well – she spends time with the respondents, she is observing their responses to situations, she asks them questions about themselves, their families, their fears, their hates and loves.

Finally, Silva's methodology is quantitative. The survey with the same questions is administered to hundreds of people. He does not even have to ask the questions himself. He developed the questions, put them on paper and hired 10 students to go and get the answers. He also hired an experienced fieldwork supervisor who acts as quality controller.

THE FIELD

One of the most difficult aspects of this kind of work is its relationship to what researchers call ‘the field’. The difficulty the researchers face arises for three reasons:

1. They are asking people to give their time and energy, their opinions and wisdom, for something whose implications and value they are not sure about.
2. Researchers enter the field with their own values, opinions and biases.
3. People sometimes tell you what they think you want to hear and not what they really believe or know.

What is crucial at this point is to focus on our researchers' relationship to the field.

Dumisani Dube's is the least complicated. The field is everywhere he goes and most people enjoy, if they have the time, learning and sharing aspects of deep culture. If they have the time, all is fine. Quickly Dumi is able to tell whether they are of Zulu-descent or not. Whether they remember anything or not. Whether they are 'urban smarts', with no interest in indigenous forms of knowledge or not. But his values and biases are obvious, he is driven by his devotion to these cultural knowledge and preferences and would be irritated by people who have lost their culture, or who fabricate their past or knowledge. Of course, most Zulu people will tell him something, but he might miss what some of them really believe: in Christianity, in Communism, in xenophobia and so on.

Walters has more complications in the 'rainbow poverty' of the Durban city. There black and white 'down and outs' walk the streets. He does not have to tell them that he is white, they can easily work that out, but he has to tell them where he works and that he is doing research. Some will reject him out-of-hand. Some will think he is mad. That he dresses simply and shabbily is one thing, that he wants something from them, is quite another. Why does he want to know? Is he really to be trusted? What if he is an undercover cop? What should we tell this crazy guy? What is it to you wiseguy? Get lost. It is a difficult relationship whose trust is precious. He cannot just buy them booze or bread, for fear that other dependencies and conflicts will develop.

Fraser's too is a difficult relationship: who sent her? Is she working for the Top Brass? Is she here to tell us how stupid we are? Not only is she suspect of all kinds of ulterior motives but she is also a woman. Will the men speak freely to her? Who gave her permission to be here in the first place – must be the government. She is spying on us. She is one of those liberals. Look at her fingernails. Look at her clothes. She talks funny too.

Like Dumisani above, Silva has it easier: the General Secretary of the Association will phone the Branches, the Branches will phone their members and the members would be made available. His researchers have an organizational mandate to irritate the nurses with their questions. If they have a problem, they must talk to their structures. Many of them will be suspicious of the research but they will be faced with young people who are just doing their job. Still, most nurses might not tell the people what they really believe in.

The relationship to the field brings with it the relationship between Research and Power.

POWER

This is an obvious and therefore usually ignored theme.

What if Dube was working for a pharmaceutical company, which was interested in appropriating indigenous knowledge? What if Dube's knowledge was written down and disseminated? And then what if it was seized by commercial interests?

What if Walters was working for the Development Department that had, unbeknown to him, a plan to get rid of the 'down and outs' from Durban?

What if Fraser was working with the National Intelligence Agency?

What if the objective of Silva's research was to create divisions and splits in the Association?

The personal rewards to the researchers are obvious: the esteem that Dube enjoys will increase; the ability of Walters to be a more effective teacher will increase; the PhD will give Fraser a better academic and social standing; Silva will increase his reputation. But what is the benefit of all this for those who make up the stories or the numbers in the study? Will the people who are being researched be empowered by the research?

RELATIONSHIP TO RELIABILITY

In the final instance researchers claim that to the best of their ability they provide a systematic investigation, which asks us to act in certain ways. On this basis it claims it is to be trusted, it is reliable, it is valid.

How do we make up our minds about a piece of research? Let us imagine that the four pieces above

- Make some contribution to general knowledge
- Make us satisfied that they have used sensible methods
- Have negotiated an honest interaction with their field
- Are not to disadvantage anybody

We can still ask whether we are satisfied that they are valid and reliable pieces of work. In subsequent readings and lectures we will attempt to find some answers to this concern. As you learn about quantitative and qualitative methods in the lectures that follow, remember that Dube, Walters, Fraser and Silva are claiming to be helping us to understand and explain our world in better ways.

2. QUANTITATIVE RESEARCH METHODS

INTRODUCTION

Quantitative methods refer to a broad area of investigation and application, which uses data with a distinctive **quantitative nature**. Data that can be represented by numbers, and to which therefore various statistical techniques can be applied, are quantitative. In principle, quantitative data are compatible with various research designs and with various data-gathering methods. In practice, quantitative research has been associated with rigorous and clearly specified research designs, using the survey method of data gathering, usually with a structured questionnaire as the main research instrument. This association between data, design and methods is the foundation for these sections of the manual. Many of the examples will be drawn from surveys, particularly those conducted by the Community Agency for Social Enquiry (CASE) on youth and on human rights.

KEY CONCEPTS

As with many other fields, quantitative methods rely on a specific terminology that must become familiar in the early stages of learning, in order to enable students to proceed with the course with few interruptions at later stages. Some of the most important concepts are presented below, and will be encountered frequently throughout the manual. Later on in the text other concepts may be introduced or further developed from the initial definitions provided here. Students will not be expected to memorise the definitions of these concepts by heart, but rather to use them as needed and recognise them when encountered in the text or in other material. This section can be used as glossary and a reference point to the definitions.

Data: this concept refers to information that is used for purposes of description and analysis of reality. It is always in the plural (the singular *datum* is rarely used). Physical data such as temperature and weight refer to information about the nature of physical reality or the natural world. Social data refer to any information that tells us something about social reality, such as demographic information, economic indicators or political values. For example, data from the CASE *Youth 2000* include information about living conditions, educational aspirations, job situation, musical tastes, policy preferences and opinions of youth about a range of issues.

Research design: a plan that outlines the elements of the research, and how they are related to each other. It is an overall scheme, which usually consists of four elements:

- The research question (for example, how to identify and understand the conditions of young people in South Africa today)

- The data needed to answer the question (data about living conditions, opinions, attitudes, and policy preferences)
- The methods suited to collecting the relevant data (such as survey, focus group discussions, interviews), and
- The analytical techniques used in order to allow the data to answer the question. This may include an analysis of the relationship between demographic characteristics of youth and their living conditions and views through quantitative techniques applied to the findings of a survey, in-depth analysis of textual material, and integration of both.

Research method: the manner in which the elements of the research design can be executed or implemented. Frequently this concept specifically refers to the ways through which the relevant data are gathered. For example, the CASE youth survey used a national sample survey, focus groups discussions, and in-depth interviews as data-gathering methods.

Research instrument: the specific tool used by each method in order to collect data. In survey research the instrument usually is a structured questionnaire; with focus group discussions it usually is a discussion guideline and moderating instructions, etc.

Variable: this is probably the most common term used in rigorous research design. A variable is a characteristic of a population that can be measured and that can take on different values. For example, height is a variable because individuals can be measured on it and have a numerical value assigned to them, ranging from low values for new-born babies (50 cm) to high values (220 cm in unusual cases). Monthly income is a variable because it varies (differs) between individuals, and can range from R0 for people with no income to hundreds of thousands of Rands for very high-income earners.

A variable is distinct from a constant, which has a fixed numerical value. For example, the distance between Johannesburg and Cape Town or between South Africa and England is a constant. The territory and population of South Africa are constants, because they are fixed for *a given point in time*, though they may vary over time. However, the population of the member countries of the United Nations is a variable rather than a constant because each country takes on a different value (in this case, country population is the variable, and each specific country's population is the value that the variable takes on in that instance). The distinction between variables and constants is important in social analysis, since as a rule *constants cannot explain variables* (this issue will be explored further on, when we discuss models).

Measurement scales: variables can be measured on four different scales, depending on the nature of the data. The scales are categorical (or nominal), ordinal, interval, and ratio.

- A **categorical scale** is used with variables whose values cannot be organised in any order (from bottom to top). Race and sex are examples of such variables, because the values (black

and white, or men and women) do not stand in any particular order in relation to each other. The numerical values assigned to them are arbitrary. We may designate men as 1 and women as 2, or the other way around, without it affecting our analysis.

- An **ordinal scale** is used with variables whose values can be organised in an order (from bottom to top), but the distances between the different values cannot be measured precisely. For example, we measure education on this scale when we use value categories such as primary, secondary and tertiary education. Class can be measured with an ordinal scale using lower, middle and upper class categories. We know that one value is higher than another, but we do not know exactly by how much.

- An **interval scale** is used with variables whose values can be ordered and the distances between the different values can be measured precisely. For example, we measure education on this scale when we use the number of years of schooling. However, the interpretation of distances between values in an interval scale is not straightforward. A person with eight years of schooling cannot be said to be exactly twice as educated as a person with four years of schooling. Interval scales usually use *discrete* values (meaning they can only take value measured in whole numbers, without fractions).

- A **ratio scale** is similar to an interval scale, with the main difference that the values are *continuous* (which mean they can take any value, including fractions) and the interpretation of the distances between values is easier. Income is an example of a variable measured with a ratio scale: a person with an income of R5000 earns exactly twice as much as a person with an income of R2500.

The scales used to measure different variables are important in deciding which statistical techniques will be used in the analysis. Different scales call for different techniques.

Indicators: these are the concrete tools used in measuring variables. They are generated in a process known as *operationalisation*. Indicators direct us to observable and measurable data that give concrete form to the theoretical definition of a variable. For example, in the CASE youth survey we use the concept of 'resources' in our analysis and provide a definition of it. In addition we need to provide a concrete means of measuring it. This is done through measuring income, jobs, the facilities available in people's area of residence, the skills they have acquired, their educational attainment (measured in years of schooling), etc.

It is crucially important to outline the precise indicators used in the research, because projects that use similar concepts may choose very different indicators to measure them, making the task of comparing findings between different research projects difficult. If our study uses income and another study uses property to measure resources, we cannot compare their findings.

Validity: this concept refers to the extent to which the conclusions of the study can be supported by its design. Validity has internal and external aspects. **Internal validity** refers to the logic of the research design. A research design that isolates the effects of all the variables used in it, so that each one of them can be measured separately, is internally valid. A research design that does not isolate them properly suffers from lack of internal validity.

For example, a study of academic staff at the University of Natal has found that on average women receive lower salaries than men do. On the basis of this finding alone, the conclusion that the University practices discrimination on the basis of sex is *not* valid. The reason is that other factors such as rank, length of service, and departmental affiliation may also affect salary levels.

A valid design must allow us to isolate the effects of these other factors before we can reach conclusions about discrimination. A valid design would examine the salary differences between men and women employees, who have served for the same time, have identical ranks and belong to the same departments. If, after setting up the study in this way we still find salary differences between men and women, then we can validly conclude that sex discrimination is indeed a reason for the differences.

Of course, there are always many other factors that can potentially account for salary differences, and no research design can take all of them into consideration at the same time. However, the more alternative explanations we are able to eliminate in this way, the stronger our confidence in the validity of the conclusions.

External validity is the extent to which the findings derived from one study can be generalised and assumed valid for other cases and situations (in other times, different locations, etc). The more representative of other sites our research site is, the more confident we can become that its conclusions are externally valid. In the case above we can be fairly confident that the conclusions are valid not only to the University of Natal but to tertiary education institutions in South Africa and perhaps further afield. However, if we studied a new private university, which is a branch of a commercial Australian institution, and therefore is not representative of tertiary institutions in South Africa, we would have less confidence in the external validity of our conclusions.

Reliability: unlike validity, reliability refers to the quality of the measurement rather than to the conclusions. A reliable measure shows the same results every time it is used, assuming no change has taken place. For example, asking people about their policy preferences is a reliable measure of their political attitudes, if we get the same response every time we use this measure (assuming their attitudes have not changed in the meantime). If we consistently get survey results that indicate that the majority of blacks wish government to focus on job creation and housing, whereas the majority of whites wish government to focus on crime prevention, we can be confident that we have in the survey a reliable measure of people's attitudes. However, if each

study reached different conclusions when examining the issue, the reliability of the measure would be in doubt.

RESEARCH DESIGN

Research design is a plan that outlines the elements of the research and how they are related to each other. It is an overall framework, which consists of a research question, the data needed to answer the question, the methods to be used in collecting the relevant data, and the analytical techniques used in order to allow the data to answer the question.

From the perspective adopted in this manual, there is no sharp distinction between qualitative and quantitative research designs. The difference between them consists primarily in the nature of the data collected in the course of the research. Frequently the same design is used to collect and analyse both types of data. Having said that, we recognise that designs used for collecting and analysing quantitative data tend to be formal and more precisely defined. It is to this kind of formal design that we now turn, but before we discuss this in detail a few additional concepts should be introduced:

Experiment: a specific research design, which is based on the ability of the researcher to isolate the subjects of the research from the wider reality, and examine the precise effect of certain variables on them without interference. Experimental designs are common in the natural sciences (such as Physics and Chemistry), but are rare in the social sciences (with the exception of Psychology), where practical and ethical issues make them difficult to conduct.

Control: a procedure frequently used in experiments, which serves to isolate the effect of a certain variable and study it independently of the effects of other variables. Statistical control refers to a procedure by which the effect of each variable is measured separately. In reality the effects of variables cannot be separated from each other (because reality always consists of multiple forces that operate simultaneously). However, statistical techniques allow this procedure to simulate the effects of experiments.

Hypothesis: this is an assumption or an expectation about the relationship between variables. A hypothesis formulated before the research is undertaken, can give direction to the study and shape its design. It can be tested with the use of the data collected in the course of the research.

A hypothesis usually takes the form of a statement that can be evaluated in light of the research findings. For example, ‘the higher a person’s income is, the more likely s/he is to support lower taxes’, or ‘blacks are more likely than whites to vote for the ANC’, or ‘there is higher unemployment in the rural areas’. In these examples the relationship is identified in terms of indicators, but it can also be formulated in conceptual terms, as one between income and policy

positions, or between race and political behaviour, or between availability of jobs and area of residence.

Research findings serve to test hypotheses. Technically such tests are conducted as a choice between rival hypotheses. In each case what is being tested is an alternative hypothesis, termed the null hypothesis, which maintains that there is no relationship between the variables in question (for example, no relationship between income levels and policy positions, or between race and political behaviour). If the findings indicate that a relationship does exist between these variables, we conclude that we must reject the null hypothesis. The more frequently we reject null hypotheses, the more confident we become in the truth of our original hypothesis.

Significance: statistical significance is a measure that serves to evaluate the results of a test. If the results are significant it means that they indicate a relationship that exists in the real world and is not merely a coincidence. As a rule of thumb, we must have at least 95% confidence that our findings are not coincidental before we can declare the findings statistically significant. The determination of confidence levels and significance is part of the field of inferential statistics that will be explored in more detail later on.

MODELS

One crucial aspect of design is modelling. A model specifies the relations between two or more variables. It identifies one variable as the factor to be explained – the *dependent variable* or the effect – and another variable or a series of variables as the factors to be used in the explanation – the *independent variables* or the causes. The term explanation is used here but in a sense it is imprecise. Technically the model puts forward and tests an assumption (or hypothesis) about the extent to which variation in the values of the independent variables is associated with variation in the values of the dependent variables. In other words, the model points out how the variables tend to change at the same time and in a certain direction. The conclusion that this relationship (known as correlation) indicates that the independent variables 'explain' or 'cause' changes in the dependent variable is reasonable, but is matter of interpretation rather than fact.

Let us clarify the issue. Correlation means that two or more variables tend to vary together. An example of this is the relations between levels of education and levels of income. It is commonly assumed, and supported by research findings, that people who have completed many years of schooling tend to receive higher income than do people who have completed fewer years of schooling. In formal terms this can be represented as correlation of education and income: they vary together and in the same direction. Whether we can proceed from this to the conclusion that education 'explains' income (in other words, that higher income is caused by higher education level and that low income is caused by lower education level) is not obvious, however.

An example may allow us to clarify the issue. Let us return to the case that was mentioned earlier in the discussion of validity. Salaries at the University of Natal were correlated with the sex of

employees: women academics tended to receive lower salaries than their men counterparts. Can we conclude from this finding that sex caused the differences in salary levels, in other words that it explained them? As we saw, we could not reach this conclusion because other independent variables may also have been responsible for this finding. Once we revise the model, and take into account these other variables (rank, length of service, departmental affiliation) we may still discover that there is a difference in salaries between women and men (though likely to be smaller than we thought initially). How can we interpret this finding?

A technical way of looking at this finding is to say that once all these other variables were controlled for (in other words their effects were separated out and accounted for), sex continues to correlate with salaries. Does this mean sex differences cause the difference in salary levels? To answer 'yes', we need to come up with a plausible story that shows how this relationship works. In other words, we have to *specify a mechanism* that accounts for the causal relationship between the variables. Attribution of causality requires a narrative, a verbal outline of the nature of the relations between the variables.

Causality is a relationship in which variation in one variable causes changes in another. A possible story in our case would focus on prejudice against working women, which expresses itself in lower pay for equal work, justified by the notion that women are unlikely to be the main breadwinners in the family. Or we may look at women's role in child care and discover that it prevents them from taking full part in university life and therefore results in lower reward for their services. Another possibility is that women tend to publish less and therefore earn less or they may receive less reward for similar publication records, and so on. We can test each of these 'stories' by adding a related independent variable to the model, and separating out its effects. Once we eliminated other variables that affect the findings indirectly, we are left with the 'pure' effect of sex and may talk about its causal role.

In reality we never reach a situation in which *all* indirect variables are eliminated – there is an unlimited number of them. However, we can identify the variables that may reasonably affect the findings, test their effects, and improve the model accordingly.

Models outline a relationship between independent and dependent variables. This may take the form of a simple model with one independent variable affecting directly the dependent variable, or it may assume more complicated forms (as outlined below). In addition to the two types of variables already identified, complex models may include intervening and extraneous variables as well.

Intervening variables provide the mechanisms through which the independent variables affect the dependent variable. For example, a person's level of education (independent variable) affects his/her level of income (dependent variable) through opening up better job opportunities (an

intervening variable). In this case the variable of job opportunities is an essential part of the causal model.

Knowledge of human rights and human rights institutions

A number of research projects were conducted by CASE to examine levels of knowledge of human rights and human rights institutions. Although each study was different, they shared a number of features and in particular the research design. This consisted of the following elements:

- The dependent variable was defined as knowledge of and attitudes towards human rights and human rights institutions
- This was studied on the basis of people's responses to various questions, breaking down overall attitudes into questions of knowledge, facts, behaviour and opinions. Examples included:
  - Have you heard of the Bill of Rights? (knowledge)
  - Do detainees have the right to remain silent when interrogated by the police? (facts)
  - Where would you go for help when faced with a human rights problem? (behaviour)
  - Do you support the death penalty? (opinions).
- Each of the elements above was broken down into more specific questions such as knowledge of laws, principles and organisations, facts about policies, actual and hypothetical behaviour, etc.
- The design thus aimed at breaking down a concept into smaller units that can be defined, made operational, and measured with greater precision. The task of the analysis is to bring the different elements back together again, in order to allow for an overall evaluation of the concept without ignoring internal tensions and inconsistencies between these elements.
- The independent variables that were used included race, sex, age, education, income, residence (urban and rural, formal and informal), province, and income. The analysis sought to show which independent variables were important, for each component of the dependent variable (it is not always possible to reach conclusions with regard to the overall impact of independent variables).

Extraneous variables are correlated separately both with the dependent and the independent variables and may therefore create the impression that they are part of the model. However, this correlation may not necessarily indicate a relationship between the independent and dependent variables. For example, a person's taste in food (independent variable) is correlated with his/her taste in music (dependent variable), because food and music are affected by race and by culture (extraneous variables). If we find that within each racial and cultural group there is no relationship between, say, liking spicy food and preferring rock or classical music we can conclude that tastes in food and music are not part of a causal model. In this case the correlation between them is regarded as *spurious*.

Let us illustrate the point. The CASE *Youth 2000* survey found that musical preferences vary with race. African youth selected gospel as their most favourite music, coloured youth selected jazz and white youth selected rock. If we examined their food preferences (something that was not done at the time) we would likely find that youth from different racial backgrounds show preferences for different types of food. For the sake of argument we can say that they would show preference for the traditional food of their group, whatever that may be. In this case, the food preferences would be correlated with the musical preferences outlined above, but the correlation would be misleading. It is unlikely that white or coloured young people, who happen to like gospel music, would show preference for traditional African food. It is equally unlikely that young white and African jazz fans would show preference for traditional coloured food, etc.

In order to identify clearly the model used in the research design, and eliminate spurious relationships, it is useful to outline explicitly the relationship between the variables and, where possible, illustrate it in the form of a diagram to allow easy identification of the model.

To come up with a model we can ask ourselves the following questions:

- What are we seeking to explain (in other words, what is the dependent variable or effect)?
- What are the explanatory factors (in other words, causes or independent variables)?
- What are the mechanisms that link the causes and the effect (in other words, what are the intervening variables)?
- Which of these we are going to explore in the proposed research?

The last question is important to address, since in principle there are multiple causes for every effect, and potentially many independent and intervening variables. No research design can accommodate all the possible causes, and researchers must always choose the variables that seem the most relevant for the model.

A model specified in this way can be tested against the research findings. Testing means the formulation of hypotheses and their assessment against agreed criteria in order to reject or confirm them. This process frequently involves setting up alternative hypotheses to be examined within the same design in order to determine which one of them provides the best explanation. In other words, testing usually means comparing he explanatory capacity of competing hypotheses rather than measuring each hypothesis on its own.

We will not discuss here the details of the statistical techniques used to assess the relative merits of hypotheses. At this point we will only say that the criterion used to decide between alternative explanations is the proportion of variance on the dependent variable that can be explained by the independent variable or combination of independent variables. The notion of variance will be explained later on when discussing measures of dispersion.

Correlation is essential for any explanatory model. It is necessary but insufficient for the formulation of a successful explanation. Three other conditions must also be met. The first condition deals with sequence. *The independent variable – the cause – must precede the dependent variable – the effect.* This seems obvious but not always easy to determine. Let us take again the example of education and income. It is true that education usually precedes income, in the sense that a higher level of education leads to a higher level of income. But the relationship can work in a different direction. Higher income may allow people to improve their education. Another more complicated possibility is that higher education initially leads to higher income, which then in turn leads to further improvement in education with the anticipation of further increase in income (this is a two-way relationship).

The second condition that must be met is that the dependent variable must *be capable of being affected and changed* as a result of the operation of the independent variable. A model makes sense only if what it defines as an 'effect' can logically play this role. Examples mentioned earlier can illustrate this point: race can determine musical taste, but musical taste cannot determine race. Sex can affect salaries but salaries cannot affect sex. For all practical purposes race and sex are fixed features of one's identity and therefore cannot be dependent variables.

This condition may also affect the independent variable. It is important to realise that constants cannot explain variables or, to put it in less stark terms, variables with a value that remains fixed for a long period of time cannot explain specific manifestations of variables that vary over time. For example, the mode of production cannot explain variations in poverty levels. Its current value (capitalism in most countries) has existed for a long period of time in much of the world, and it cannot explain circumstances that vary between countries and over time. The dominant mode of gender relations (patriarchy) cannot explain specific manifestations of violence against women, which differ from place to place as well as historically. Concepts such as capitalism and patriarchy are useful in explaining general problems such as inequalities and gender violence, but they cannot be included in models that by nature deal with specific relations between variables.

The third condition for a successful explanatory model is that it must be *theoretically plausible.* As noted earlier, the model must put forward a convincing story that shows how the independent variable can indeed cause the effect. To be plausible or convincing means to be consistent with other research, or with accepted theories or with common sense. In the social sciences statistical proof of a relationship is insufficient without an adequate narrative of how it works in practice.

EXPERIMENTAL DESIGNS

So far we have discussed general principles of research design. We turn now to the examination of a specific design that is widely recognised as being the most rigorous. The e*xperimental design* is frequently applied in the natural sciences and medical research and is less common in the social sciences. Although not used often in social research, the experimental design is

exemplary in its rigorous attitude to research. Its logic allows us to focus on the requirements for a successful research design, even if not all of them may be met in practice.

The basic experimental design consists of five elements:

- Two groups: one is exposed to the independent variable or intervention (the experimental group) and the other is not exposed (the control group)
- Random allocation of participants to the groups before a pre-test
- A pre-test: measurement on the dependent variable (referred to as the outcome) before the application of the independent variable
- An intervention: application of the independent variable
- A post-test: measurement on the dependent variable after the application of the intervention.

What is the logic or assumptions behind this design? First, it is assumed that we can isolate one independent variable out of many possible such variables through the *random* allocation of participants into groups. In this way background factors that may have an effect on the dependent variable are controlled for – their potential effects are neutralised because the background characteristics are found equally in the experimental and control groups. Random allocation means that each participant has the same chance of being assigned to either group.

The second assumption is that the only relevant event between the pre-test and post-test measurements is the intervention (the application of the independent variable). If this is the case we can attribute all the differences we detect in the results of the tests (changes from 'before' to 'after') to the effect of the intervention. The third assumption is that we can attribute the differences we detected between the post-test results of the two groups to the exposure to the intervention on the part of the experimental group and lack of exposure on the part of the control group.

Let us examine how this design is applied in practice through the example of medical research. When a new drug or a treatment is tested, the experimental design is frequently used. The example below of diet to reduce cholesterol levels can be explored in detail. The experimental group will be required to follow a diet, while the control group will continue with its normal diet (or both groups will be subjected to different kinds of diet). Participants in the research will be randomly allocated to the groups, to prevent a concentration of people who may respond in specific ways to the intervention in one of the groups. The pre-test measurements will provide baseline data for the research, and may also serve to confirm whether the allocation to group was done successfully.

Eating Walnuts Lowers Cholesterol Levels in People with High Cholesterol
***Annals of Internal Medicine*, April 2000 Volume 132 Number 7**

What is the problem and what is known about it so far?
High cholesterol (hypercholesterolemia) is a risk factor for heart disease. Drug treatments are available that can help to lower cholesterol levels. However, diet is a major part of treatment for everyone with high cholesterol levels and is often the only recommended preventive treatment for people who have not yet developed heart disease. One way to lower cholesterol is to change the fat content of diets by substituting polyunsaturated fat (which is mostly from vegetable oils and does not increase cholesterol) for saturated fat (which is mostly from animal sources and does increase cholesterol). Some reports have suggested that people who eat nuts regularly get heart disease less frequently than people who do not eat nuts. Walnuts are particularly high in polyunsaturated fat. A previous small study showed that cholesterol levels decreased when healthy men ate walnuts instead of other fats. However, that study included only men, all of whom started with normal cholesterol levels.

Why did the researchers do this particular study?
To find out whether men and women who had high cholesterol levels could decrease these levels by replacing a third of the fat content in their diet with walnuts.

Who was studied?
The study was done in Spain and included 55 men and women (average age, 56 years) with high cholesterol levels.

How was the study done?
At random, the researchers assigned half of the study patients to eat a cholesterol-lowering Mediterranean diet, which limited red meat and eggs, emphasized vegetables and fish, and used olive oil for cooking. It allowed no nuts. The other half of the subjects ate a diet containing similar amounts of calories and fat, but walnuts made up 35% of the fat content. After 6 weeks, the subjects switched to the other type of diet for another 6 weeks. The researchers measured cholesterol levels at the beginning of the study and again after 6 weeks of each type of diet.

What did the researchers find?
Forty-nine people completed the study. Cholesterol levels decreased about 5% after 6 weeks on the Mediterranean diet alone and about an additional 5% after 6 weeks on the diet that contained walnuts.

What were the limitations of the study?
The study does not prove that eating walnuts will prevent heart disease, only that substituting walnuts for other fats can help to lower cholesterol levels in the short term. Note also that the walnuts were used in a diet that was already healthy in terms of fat content. The benefit of including walnuts in less healthy types of diets is unknown. The California Walnut Commission provided some support for the study but had no control over how the study was done.

What are the implications of the study?
Substituting walnuts for other fat sources may help to lower cholesterol in people with high cholesterol levels.

The next step is the administration of the intervention for a period of time that is deemed appropriate for the purposes of the research: the determination of the duration of the research is specific to each project and it depends on its nature. After this, a post-test will be conducted and the results will be compared on two dimensions: a comparison between pre-test and post-test results for each of the groups, and a comparison of post-test results between the experimental and control groups. In this way we should be able to tell how each of the groups was affected by the intervention or its absence, and how they differ in their results following the intervention. This will tell us whether the intervention – the diet to reduce cholesterol level – proved effective.

Let us return now to the assumptions behind the design and examine under what circumstances they are likely to work. The conclusions regarding the effectiveness of the intervention will be valid if we show that members of both groups are likely to respond to the diet in the same way. In other words, they do not bring with them to the experiment any special characteristics that would affect their responses to the intervention (and thereby prevent us from reaching valid conclusions about its effectiveness). We can ensure that when we engage in medical research, which usually relies on volunteers who agree to take part in the study or on patients who can be observed under controlled conditions and be carefully selected to fit our criteria.

In social research on the other hand, random allocation is much more difficult to ensure. Most of our research is conducted in real life situations and as a result we have limited control over participants and their background characteristics. Each case study is historically unique and cannot be replicated. Although the experimental method is being used in the field of social psychology and small group research, it is rare in other branches of the social sciences, which deal with large-scale social, political and cultural processes. The first condition of the experimental design is thus difficult to meet in most types of social research.

Other conditions for a successful experiment require that no independent variable, other than the intervention, should affect the results of the post-test. In addition, differences in post-test results between the experimental and control groups should be attributed in their entirety to the exposure to the intervention. These conditions are unrealistic for social research that is conducted in an open environment where many forces operate simultaneously and their effects cannot be neatly disentangled. The focus on measuring the effect of one variable may prevent us from identifying complex causal patterns. Even in the medical cases above it is difficult to ensure that people stick to their diet or that they are not exposed to other factors.

Given these difficulties, how can experimental designs be used in the social sciences? While they cannot be implemented strictly, they can help us develop a framework for research that aims to specify as clearly as possible the relationship between variables, and test them as rigorously as possible with the use of empirical data. The procedures will have to be adjusted to the data and respondents at hand, but the logic remains the same: *creating conditions that isolate the effects of*

the independent variable and allow a comparison between groups that differ in their exposure to it.

Examples of experiment-like designs may involve studying two informal settlements, measuring their living conditions and attitudes (pre-test), and then again after the implementation of service delivery programme in one of them (post-test). We can conduct this study in anticipation of the programme (based on prior knowledge) and after it has been put into effect. While we do not control the background characteristics of these communities we can select cases that are similar enough to make a meaningful comparison and allow us to measure the effect of the programme.

Another example may involve comparing the achievement of students who have gone through an academic support programme and those who have not, selecting for the control group students who come from roughly the same background as those participating in the programme. Again, the principle of random allocation to groups cannot be strictly applied here, but the groups may still be sufficiently similar to allow us to reach valid conclusions about the programme's effect.

In these and similar applications of the experimental design, we may skip the pre-test stage (on the assumption that the groups are by nature comparable and would have shown similar pre-test results if measured), or allocate people to groups only *after* the intervention has taken place through matching. This refers to a process that seeks to ensure that allocation is done in a way that creates groups that are similar on some key relevant variables. All these ways of modifying the design must be justified on the basis of substantive reasons: lack of data, inability to allocate people to groups beforehand, and so on. They are not simply means to cut corners and make the task of the researcher easier.

The reverse of this is that if data are available a more complex research design can be implemented, involving more than one independent variable and several 'before' and 'after' measurements. These designs are more complicated to administer but if successful increase our ability to focus clearly on the precise effect of the independent variables.

OTHER RESEARCH DESIGNS

Two other common designs will be outlined here. The first is the *longitudinal design*, which focuses on measuring change over time. For example, the CASE *Youth 2000* survey is a follow-up on a 1993 study, and one of its goals is to measure changes between the two periods. This design is similar to the experimental design in that it involves multiple measurements, but usually does not include a comparative component in the form of a control group. A unique type of longitudinal design is a retrospective study, in which people are asked about their past as well as present and the study is conducted only at one point in time, but this is exception to the rule.

Two types of longitudinal studies are *trend studies*, which examine the same set of issues with different samples over a period of time, and ***panel studies***, which examine the same set of issues with the same respondents at various points in time. A public opinion survey, which periodically measures the perceptions and attitudes of a sample of the population (each time different households), is an example of a trend study. A survey of experts regarding their views of the country's economic performance, conducted at 6-months intervals (each time with the same experts), is an example of a panel study.

By definition all longitudinal studies involve the study of change over time. They differ though, by the length of time covered in the design, the number of points at which measurement takes place (at least two), and the choice of interventions that are planned versus naturally-occurring events. In the former case measurements can be taken after exams or after meetings with community representatives, and in the later case measurements can be taken after elections, or each year at the opening of the school year.

Because longitudinal studies take place over a long period of time, it is sometimes difficult to distinguish between the effect of the independent variable or intervention, and the effects of time itself that passes between measurements. In trend studies it is difficult to separate out the effects of the intervention and the effect of other historical events that unfold on their own. People's responses to the question of what government priorities should be, for example, are affected by everything that happens in the world between measurements (for example, the collapse of the dot.com companies, the 11th September 2001 events). We may not be able to isolate the effect of a policy or a programme that is particularly South African, even if the questions refer specifically to views related to such policies. In panel studies, what changes from test to test is not only the world at large (the dependent and independent variables) but also the age and personal experience of the panel members. Their responses may reflect a change in their own approach or personality rather than a change in the objects they are meant to observe.

The second common design is the *cross-sectional design*. It differs from the previous designs in that all the data are collected at one point in time. Groups are compared as they are and change over time is not addressed directly. The measurement is that of the existing differences rather than of the differences that emerge as a result of intervention, and there is no random allocation to groups. Behind this design is the search for answers to questions about existing groups and their differences at present, rather than about the impact of a particular intervention.

Population surveys (of living conditions, opinions, values and preferences) are a common type of a cross-sectional study. We study the sample, and then break responses down on the basis of variables such as age, sex, race, education, income, and so on. We do not construct experimental groups but rely rather on the existing groups in the population. In other words, instead of selecting black and white respondents or men and women and allocating them to groups, we compile the responses of one category and compare them to the aggregate responses of another.

A way of combining cross-sectional with longitudinal design is conducting the cross-sectional study at various points in time. This would allow us to break down responses on the basis of existing groups, as well as compare them over time. For example, we can compare the levels of knowledge of the Constitution between black and white responses in 2000 and then again in 2002. This will allow us to measure racial differences in knowledge at each point in time, and also find out how these differences change over time (do they remain the same, decrease or increase in one direction or another, etc). We usually assume in such studies that all respondents have been subject to the same historical interventions between measurements, but in some cases where this is not the case, differential exposure may play a role in explaining the findings.

Although different responses reflect the effect of all the independent variables taken together, we can separate out the effect of each one of them through statistical analysis conducted on the data collected in the course of the research. This statistical control plays a similar role to the elimination of differences between groups through random allocation to groups in experimental designs (this procedure will be explored further in the section on surveys and data analysis).

3. SURVEY RESEARCH

Much of the material used in quantitative analysis is based on the findings of survey research. A survey, which normally uses a structured questionnaire as a data-gathering instrument, is a form of interview-based research conducted on a mass scale. Surveys target large numbers of people who are asked identical questions in the same order, so as to collect data about their demographic characteristics, living conditions, behaviour, opinions and preferences. Most surveys are sample surveys in that they select a number of people from the broader population for inclusion in the survey – they do not cover the entire population.

People are usually selected for participating in a survey as members of groups (such as racial or ethnic groups) or of social categories (men and women, young people) or as residents of particular areas (urban and rural areas, specific cities and settlements). They are not targeted as individuals on the basis of their unique history or experience. This may mean, for example, that we look for 20 white men residents of Cape Town's northern suburbs, or 20 black women from an East Rand township, without caring who they are precisely as individuals, as long as they meet this criteria (in this case, sex, race and residential location).

Consistently with this approach, survey findings are not presented and analysed on the basis of what each individual respondent has to say. Rather they are broken down by categories such as race, sex, age, residence, income and education (or intersection of some of the above). For example, we may identify the views of young coloured people in the rural areas of the Western Cape, or those of women with tertiary education in Soweto, etc. The assumption behind this is that these demographic characteristics are relevant to people's views, in two respects. They allow us to cluster views into meaningful bits of information, and they provide us with the beginning of an explanation of why people have views of a particular nature, by linking these views to their background characteristics.

A sample survey is a cost-effective way of getting an overview of the conditions and opinions of a cross-section of the population. It is cheaper than a census, which is a form of a survey that covers the entire population. Crucial to the sample survey's effectiveness is thus the extent to which it represents the population from which it is drawn. The process of selecting participants for a survey is called ***sampling***, and the best results are yielded by a representative sample. While the findings of a representative sample are accurate only for the sample itself, we may generalise from them to the population through the use of inferential statistics (which will be discussed in another module). These give us approximate figures about the population and not conclusive results (which only a census can yield). If we can choose between getting conclusive and approximate results, why do we not always go for the definitive data then? Why be forced to go through the process of inferring from a sample data?

There are a number of reasons why a sample survey is chosen over a census, and most of these have to do with considerations of time, money, and logistics. A study of entire populations is a much more complicated exercise than the study of samples drawn from populations. The only exception to this rule is the study of very small populations, such as the population of an NGO (the entire staff) or the population of an office building, or of an apartment block (all the residents). Even in such cases we usually consider whether a sample drawn from these populations would be a more efficient way of giving us valid findings about our topic.

To understand the relationship between a population study and a sample study let us take the example of studies conducted in South Africa. The national Census of 2001 conducted by Statistics South Africa involved expenditure of hundreds of millions of Rands, and the deployment of 80,000 fieldworkers who were recruited and trained to complete the data collection all over the country. This called for complicated logistical arrangements for travel, accommodation, food, and office expenses. Hundreds of other people are still involved in processing the results. Preliminary findings are not expected before 2003, two years after the completion of the data collection process. The prohibitive cost and enormous logistical challenges of such a project are obvious, which can explain why it is conducted only once every five or ten years and not more often.

The figures above regarding the Census can be compared to figures for a large-scale sample survey, such as the annual October Household Survey also conducted by Statistics SA. This survey usually covers 30,000 households, may cost around R10 million, involve hundreds of fieldworkers and take at least a year before results become available. In comparison, standard normal surveys conducted by various research agencies target 1000-1200 households usually cost a few hundred thousands Rands each, involve a few dozen fieldworkers and the data collection and processing can be completed in a couple of months. The enormous savings represented by sample surveys are obvious.

Having said that, we must realise that there is *a trade-off* between cost and accuracy. Greater accuracy and confidence in the findings can be achieved with a population census or with surveys with large samples, but this comes at much greater cost and logistical headache. Even if resources were unlimited (and they never are), we would have to evaluate whether the potential increase in accuracy with a very large sample justifies the additional cost and time involved.

QUESTIONNAIRE DESIGN

Much of the material used in quantitative analysis is based on the findings of survey research. A survey, which normally uses a questionnaire as a data-gathering instrument, is a form of interview-based research conducted on a mass scale. Surveys target large numbers of people who are asked identical questions in the same order, so as to collect data about their demographic characteristics, living conditions, behaviour, opinions and preferences.

The main instrument used in surveys is a structured questionnaire, which may include open-ended questions as well. The structured questionnaire is based on the principle that we ask all respondents the same questions in the same order, with limited and pre-defined response options. All questionnaires must be administered in the same manner to ensure that the responses are always provided under the same circumstances. There is no flexibility in the way that questions are presented, the sequence in which they are asked and the options available for answering. While this is easy to observe where the researcher conducts all the interviews in person, surveys (especially those national in scope) frequently call for the recruitment of fieldworkers who would administer the questionnaire to the respondents.

Instructions given to the fieldworkers usually consist of some variation of the following:

- Do not interpret the meaning of questions: use the standard formula to explain them
- Do not deviate from the introduction, wording or order of questions
- Do not let anyone answer on behalf of the respondent (frequently this extends to a prohibition on the presence of other people in the room when the interview takes place)
- Do not suggest an answer, agree or disagree with the response or otherwise indicate your personal views on the matter being investigated.

These instructions aim to eliminate a potential problem known as the interviewer effect: the impact of a particular style of interviewing on the responses given by the interviewees. The stricter these instructions are applied, the less chance there is for error on this count. This means that supervision to ensure standardisation is a crucial element of survey administration (the logistical requirements of questionnaire administration will be discussed elsewhere).

Questionnaire design is in a sense a task that requires much greater attention to detail and to the consequences of inaccurate formulation than the design of other research instruments (such as in-depth interview guide or focus group discussion guidelines). The reasons for that are the need to convey questions in a precise and standardised manner as discussed above, and the need to fit the format to the specific and strict requirements of quantitative research design. Because very little flexibility is allowed in the course of the interview, potential problems must be identified and, as far as possible, eliminated beforehand.

In a previous module we discussed issues of research design and models that identify dependent, independent and intervening variables, and how they interrelate. Questionnaire design follows the same logic. Once the relevant variables have been identified, the bulk of the design involves identifying and clustering of topics to be discussed, and operationalising variables in the form of specific questions. However, given that questionnaires are usually large and may contain hundreds of variables, to optimise economies of scale, surveys may serve to design and test many different models on the basis of a single data gathering exercise.

The independent variables frequently consist of the background characteristics of respondents, such as sex, race, age, occupation, income, education, residence, province, language, ethnic group, religion, etc. Some of these variables – education and income for example – may become dependent variables as well, depending on the specific question being asked. The first section of the questionnaire then, collects information about these variables as the examples below – taken in a modified form from the CASE youth survey – demonstrate:

Province [Code by observation]

Eastern Cape	1
Free State	2
Gauteng	3
KwaZulu-Natal	4
Limpopo	5
Mpumalanga	6
Northern Cape	7
North West	8
Western Cape	9

Area and type of dwelling [Code by observation]

Metropolitan – formal	1
Metropolitan – hostel	2
Metropolitan – informal	3
Small urban – formal	4
Rural – farm worker	5
Rural – village under chief	6

Sex [Code by observation]

Man	1
Woman	2

Race [Code by observation]

African	1
Coloured	2
Indian	3
White	4

Language in which interview is done [Code by observation]

IsiXhosa	1	IsiNdebele	5
Setswana	2	Afrikaans	6
Sesotho	3	English	7
SiSwati	4	Other language (specify)	8

Notice that all the questions above are followed by the instruction 'code by observation'. These are data that can be collected by the interviewer without asking explicit questions. In fact, some of them would give rise to an awkward situation if they were asked aloud. Of course, if the interviewer is in doubt about the answer to any question, s/he must ask the question directly. These are followed by other questions that must be asked explicitly. Note that for all questions the answer options are not cast in stone. One could cluster them differently (for example create just two categories 'urban' and 'rural') or use different options altogether ('formal' and 'informal'). The precise formulation of both questions and answers is specific to each study.

How old are you?

	YEARS

What is your current marital status? [DO NOT READ OUT. SINGLE MENTION]

Single	1
Living with partner	2
Married	3
Divorced	4
Widowed	5

What is the highest level of education you have passed? [SHOW CARD. SINGLE MENTION]

No formal education	1
Gr. 1 – Gr. 2	2
Gr. 3 – Gr. 4	3
Gr. 5 – Gr. 6	4
Gr. 7 – Gr. 8	5
Gr. 9 – Gr. 10	6
Gr. 11 – Gr. 12	7
Degree/post graduate degree	8

What is your current status, i.e. what are you doing? [DO NOT READ OUT. MULTI-MENTION]

Unemployed	1
Working part-time in formal sector	2
Working full-time in formal sector	3
Working part-time in informal sector	4
Working full-time in informal sector	5
Self-employed	6
Housewife/homemaker	7
Student	8
School pupil	9

Approximately, how much do you earn per month (after tax and deductions)? [SHOW CARD]

Up to R499	1
R500-R999	2
R1000-R1499	3
R1500-R1999	4
R2000-R2499	5
R2500-R2999	6
R3000-R3999	7
R4000-R5999	8
R6000+	9

In addition to the content of the questions (establishing background characteristics that can serve as independent variables), it is important to ensure that the instructions to the interviewer are clear and observed equally by all. Their goal is to prevent confusion and facilitate receiving accurate information. The choice of multi-mention is used in questions that have more than one valid answer. In the example of employment above, people can work part-time both in the formal and informal sectors, or be a homemaker and a student, and it is important to capture their responses in full. When we want to force people to make a choice, we usually ask about their *main* form of employment. The purpose of showing a card where the answer options are listed is to facilitate answering when the options are too numerous, confusing or difficult to remember.

There are two principles to observe regarding the answer options. First, they must include all the possible categories. When this is not possible (usually when there are too possible answers, as in 'country of birth' for example), we list in full the most likely responses and add the option of 'other' or 'other (specify)'. For example, we may list the seven most common languages, which account for over 90% of the population in South Africa, and may not be interested in finding the precise answer of those who fall outside this framework, except to classify them under 'other'. Alternatively, we may want to specify the different answers under 'other' and code them accordingly later on (after the data-gathering stage is completed). The coding must reflect a

diversity of possible responses without necessarily including all the options. Choices in such matters depend on the goals of the study.

Open-ended questions are treated in a similar manner. They are post-coded (after the results are available, not while the interview takes place), according to a scheme devised beforehand. Structured questionnaires normally contain only a few open-ended questions. The strength of the structured approach is that it allows easy coding and analysis of responses. It captures the views of a large number of people who are presented with identical questions and choose from identical and limited number of options. Open-ended questions introduce an unstructured element that makes the task of coding and analysing the results very cumbersome, and thus they defeat the purpose of using the survey instrument. The goal of getting detailed and unstructured responses can be achieved more efficiently by using the in-depth interview method.

The second principle in questionnaire design is that we must ensure that the answer options are mutually exclusive. When we ask about age, for example, no figure can appear in more than one option. A common mistake to be avoided is to use options such as 20-25, 25-30, 30-35, etc. In this case the answer '25' can appear in two options, and we want to eliminate as much as possible the potential for confusion. Similarly, when we ask people about the reasons they are unemployed, and give them options such as 'I am unskilled', 'I am lazy', 'there are not enough jobs', 'there is discrimination', we must realise that more than one answer may apply. In such cases we must allow multiple answers or a combination of options. Alternatively we can phrase the question to refer only to the main reason for unemployment. Either way we need to be explicit in our instructions to the fieldworkers and include these in the text of the questionnaire.

While the independent variables in survey research are frequently limited to a standard list that is repeated more or less in all surveys, there is an infinite variety of dependent and intervening variables that could be explored. In the CASE youth survey these are clustered under headings such as family structure, education, employment status, skills and training, lifestyle, aspirations, etc. The choice of specific questions and issue clusters depends on the topic of the research.

A common format of opinion-related questions is known as the *Likert Scale*. This refers to a measurement of respondents' views on a scale that ranges from 'strongly agree' to 'strongly disagree'. The following example illustrates this:

'The South African economy is in a better shape now than it was 10 years ago'. What is your view of this statement?

Strongly agree	1
Agree	2
Neither agree nor disagree	3
Disagree	4
Strongly disagree	5

Another form of the same question involves asking people to answer the question on a scale ranging from 1 to 5 or 1 to 7. In this case the options do not appear in a verbal form and the respondent is asked to select a numerical point on the scale. For example, 'Read the following statement and place your view on a scale of 1 to 5, where 1 stands for strong agreement and 5 stands for strong disagreement'. The respondent may be presented with a card to illustrate the answer. Please note that because of the visual and numerical aspects of this format, it may not be suitable for countries such as South Africa with relatively low literacy levels.

To avoid repetition we may choose formats that facilitate the task of the interviewer by technically collapsing two aspects of a long question into one, as the following example shows. In this case instead of going through the same list of services twice, the fieldworker can read it once and ask two questions for each item on the list.

What kinds of GOVERNMENT SERVICES do you know of that help young people improve their employment chances, and which of them have you actually used?

Services	Know	Used
Job searching skills	1	1
Interview skills	2	2
Professional skills training	3	3
Hands-on training	4	4
Self-orientation training	5	5
Experiential training	6	6
None	7	7

There are many different formats of questions and we will no go through all of them here. It is important to keep in mind several general principles:

- The questions must be formulated clearly to avoid confusion on the part of respondents. Avoid questions that are too broad or vague such as 'what is your view of life?' or 'how do you feel about South Africa today?'
- The questions must not use concepts with which respondents may be unfamiliar ('do you feel alienated from your species-specific being?' or 'does government ensure environmental sustainability?' are not appropriate questions)
- Break down theoretical concepts into questions that can be answered by respondents. Instead of asking 'do you feel that your social welfare needs are being addressed?' ask questions such as 'do you have enough food to eat'?, 'do you have shelter?', 'do your children have access to school?', etc.
- Each question must be unique. Do not combine two questions in one, as in 'do you support government programmes on fighting crime and creating jobs?'

- Do not ask questions that assume knowledge that people may not necessarily possess. Before asking 'do you agree with the proposed changes to the Immigration Bill?' ensure that respondents are aware of the Bill and the proposals. And finally,
- When in doubt, choose simpler questions and more of them over a few complicated ones. It is better to underestimate what people know than to overestimate their knowledge, and to be repetitive than not to be understood.

SAMPLING STRATEGIES

Most surveys are sample surveys in that they select a number of people from the broader population for inclusion in the survey – they do not cover the entire population. People are selected for participating in a survey as members of groups (such as racial or ethnic groups) or of social categories (men and women, young people) or as residents of particular areas (urban and rural areas, specific cities and settlements). Survey findings are consequently presented and analysed on the basis of categories such as race, sex, age, income and education (or intersection of some of the above). The assumption behind this is that these characteristics are relevant to our understanding of people's views. They allow us to cluster views into useful bits of information, and they provide us with the beginning of an explanation of why people have views of a particular nature, by linking these views to their background characteristics.

Our ability to infer from the findings of a sample to the population is determined primarily by the extent to which the sample is *representative* of the population. If the sample is not randomly selected any projection of the results to the population is problematic. A *random* sample means that every member of the population has equal chance of being included in the sample. Accurate representation means, in this context, the extent to which the sample reproduces or mirrors the composition and diversity of the population that is being studied. The sample is *not* supposed to represent the overall population of the country but rather the specific population about which we seek to gain information.

When deciding on the size of the sample we must keep in mind that a large sample does not necessarily ensure greater degree of representation though it usually allows us to reduce the margin of error and conduct analysis and comparisons between sub-groups. The role of thumb used in calculating sample size is that we need at least 30 respondents for the overall sample, and 30 respondents for each sub-group that we wish to study (issues related to sampling will be covered in greater detail in another module).

The population about which we gather information (through the sample survey) may be the population of South Africa, or the population of Cape Town, the Wits student population or that of people living with HIV/AIDS. Whatever the case is, the requirement that the sample should be representative is technical in nature rather than political. Whether the sample is balanced on

racial or sex grounds is a meaningless question in the abstract. The sample should reflect the diversity of the specific population from which it is drawn. If race were deemed an important feature of the study, then a racially homogeneous population would call for a racially homogeneous sample, and a racially diverse population for a racially diverse sample, and so on.

We should realise that it is impossible for a sample to represent the population on all of its aspects, without making the sample very large and therefore costly and logistically complicated. This is because diversity is infinite and covers many different aspects. The researcher must identify which aspects of the population's diversity are relevant for the specific research. For example, we may choose race, sex and residence (urban, rural) as important aspects when conducting research on educational attainment among youth, and sample the population accordingly. At the same time, we may ignore other aspects such as ethnic identity, religious beliefs, hair colour and height as irrelevant to the research. In this case we do not care whether or not our sample is representative of the population with regard to these latter aspects.

Social research in South Africa normally uses race, residence and province as the bases on which to construct a sample. This choice is motivated by an assumption that these variables are important to our understanding of most topics of research. In other words, we assume that if the sample failed to be representative of the population with regard to these aspects, this will affect the validity of the findings. At the same time, failure to be representative of, say, the distribution of hair or eye colours in the population will not have such a negative effect. Assumptions of this nature are derived from theoretical understanding and expectations that are expressed in the model chosen for the study, and are specific to each study. In each case the choice of variables must be explicit and be done on grounds that can be defended and not merely assumed.

Having said that, let us consider cases in which race is not expected to have an impact on the findings. We have used earlier an example of medical research about the relationship between diet and cholesterol levels. It is a reasonable assumption that race does not have an effect on the extent to which certain diets are effective in reducing cholesterol levels. This in turn may be based on a more general assumption that all human beings function biologically in the same way, and what happens 'under the skin' cannot be affected by superficial physical differences. These assumptions may be derived logically from other scientific principles or from prior research.

Whatever the source of our assumptions, we use them as a basis for sampling. This means that in the example above we do not regard race as an aspect that should play a role in the sampling, and therefore we do not care whether or not the sample is racially representative of the population. If our assumption holds, our findings will not be affected by the racial composition of the sample. In other words, the effectiveness of the diet in reducing cholesterol levels would be the same for all people regardless of race. This means that when we design medical survey research we do not need to go into extra trouble and expense to attend to issues of racial representation. The fewer variables we need to control, the simpler the design is, as well as less costly.

On the other hand, we may assume that sex would have an effect on the findings of this research, based on prior findings that indicate that men and women consistently respond differently to diets. In this case we should ensure that the sample includes sufficient numbers of men and women to enable us to study the drug's effect on both groups (and possible sub-groups among them). A study of men would be valid only for men and not for women, and vice versa. Of course, if we discover that the diet is indeed equally effective for both groups, and subsequent research confirms this conclusion, we may at a future point in time discard sex as an aspect of research of this nature.

The crucial point here is that decisions regarding sampling and addressing the question of representation must be made on the basis of the goals of and expectations from a *specific* research project. They should not be made on the basis of abstract principles. When we look at research products we must examine how the sample was selected and whether it is representative with regard to aspects that are relevant to the research. To be representative of the population with regard to aspects that do not feature in the research is not a virtue. It will *not* diminish the value of the research but is likely to increase its costs without adding any benefits.

Although a random sample survey is the most useful approach in surveys that seek to capture the views of a large population, a number of other strategies are frequently used. One of these strategies is *purposive sampling*, which is used when we want to target particular individuals and categories of individuals for investigation. For example, we may select directors of large national NGOs in South Africa, or government officials in departments of social services of the rank of chief director and above, and interview all those available from these categories.

Another strategy is *quota sampling,* which is based on the need to interview sufficient number of people from different categories and we proceed with the interviews until we reach the required number. For example, select 30 men and 30 women at a conference, with no regard to any characteristic other than their sex. *Snowball sampling* is used to target difficult-to-reach people (members of religious sects or illegal migrants) by asking some of them to direct the researcher to others of the same group. Ultimately though, the choice of a sampling strategy depends on the research questions and the goal of the investigation.

PRESENTATION OF FINDINGS

Survey findings can be written up as text or presented in easier visual forms as charts, graphs, or tables. The table form is particularly useful and is most commonly used in research reports. The choice of a mode of presentation has a technical dimension (addressing questions such as which graphic format looks best, what software is used), and a substantive dimension (addressing questions of what data are most relevant, and how to highlight the role of different variables).

The most common measure used in descriptive statistics is *frequencies*, which break down the overall data into categories and present them as percentages of the total. For example, the racial breakdown of the South African population is that it is composed of Africans (76%), whites (12%), coloured people (9%) and Indians (3%). These figures are the frequencies of the different racial groups in the overall population. The sex breakdown consists of women (51%) and men (49%), and so on. Frequencies in a survey present the breakdown of different answer options. For example, 35% answered 'yes', 60% answered 'no', and 5% answered 'don't know'. Other common statistical measures that are used to describe data are averages, measures of dispersion, and measures of association (these will be discussed in detail in another module).

When reading research finding that are presented in graphic form, we must pay attention to the way the information is organised. When we read tables we pay particular attention to rows, columns and totals. When we read graphs we look at the percentages of responses for each of the categories presented in the graph, and the same applies to charts. We must keep in mind that the purpose of graphic presentation of data it to allow the reader to have an overall view of the main findings in one glance, without going through a complex list of figures or a textual narrative. If the data are not easily accessible when presented graphically (if the tables are too complicated or the graphs have too many categories), that defeats the purpose of using graphic presentation.

Exercise:

Examine the following tables, chart and graphs and write a short paragraph detailing the *main* findings of each one and what they mean. Look at comparisons between categories across rows and columns, and identify the totals. Pay attention to the answers given in the tables and whether they cover all the possible options (examine what the figures are percentages of).

Race	SA Human Rights Com.	Com. Gender Equality	Public Protector	Constitutional Court
Africans	42%	32%	22%	26%
Coloureds	47%	27%	24%	30%
Indians	66%	59%	54%	59%
Whites	64%	42%	38%	51%
All	**46%**	**34%**	**25%**	**31%**

Table 1: Levels of knowledge of human rights institutions, by race. These are responses to the question of '*name the four human rights institutions mentioned in the Constitution*', taken from a CASE human rights survey.

Race	Successful	Neither successful nor unsuccessful	Unsuccessful	Don't know
Africans	33%	11%	6%	49%
Coloureds	38%	14%	3%	45%
Indians	48%	18%	3%	31%
Whites	33%	22%	13%	33%
All	**34%**	**13%**	**7%**	**46%**

Table 2: Success of the SA Human Rights Commission, by race. These are responses to the questions of '*how successful has the Human Rights commission been in your view?*' taken from a CASE human rights survey.

	Area	%
Men	Formal urban	48%
	Informal urban	68%
	Rural	77%
	All men	**62%**
Women	Formal urban	53%
	Informal urban	76%
	Rural	83%
	All women	**69%**

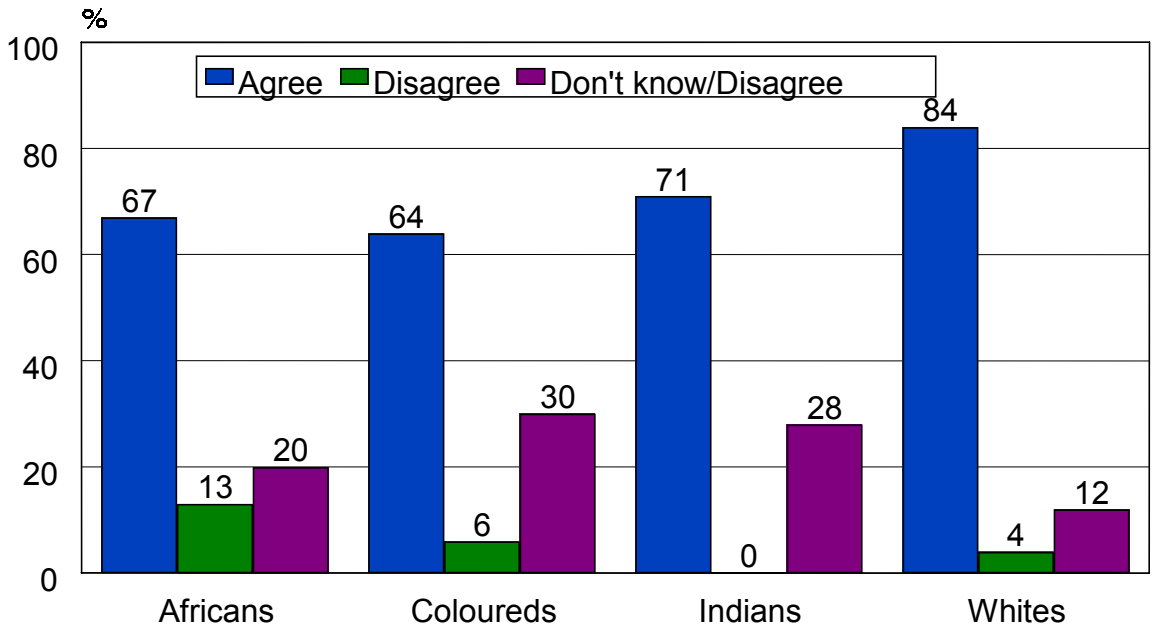
Table 3: Proportion of respondents willing to join employment scheme, by sex and area. These are responses to the question of '*would you be willing to join an employment scheme if one was offered in your area?*' taken from the CASE youth survey

	All	Unemployed
African	76%	90%
Coloured	40%	74%
Indian	21%	36%
White	19%	47%
All	**66%**	**87%**

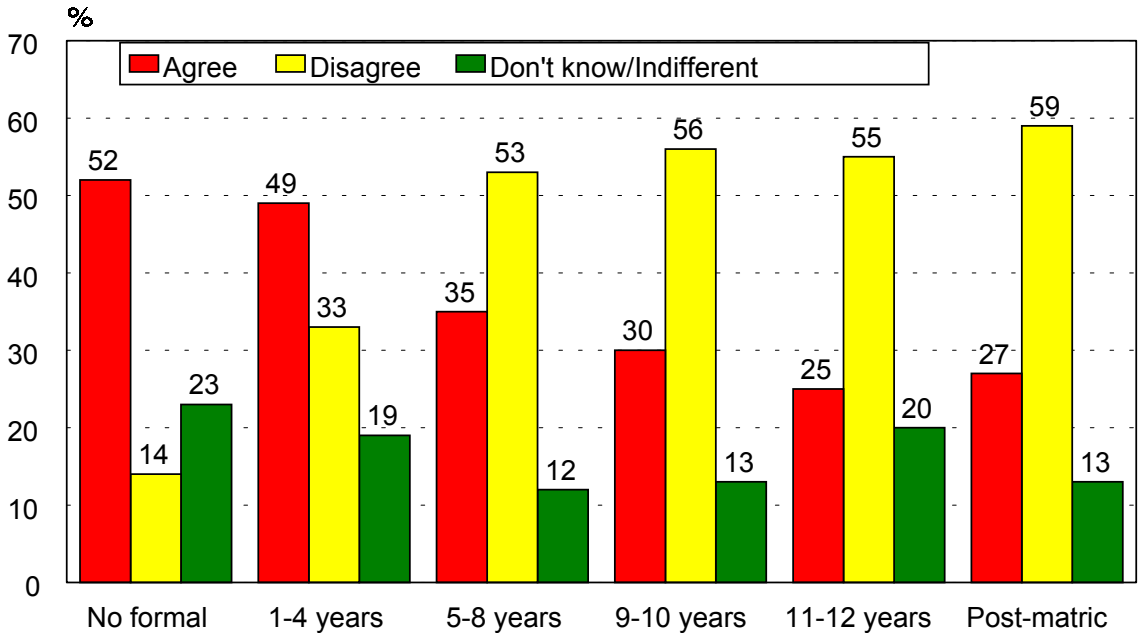
Table 4: Proportion of respondents willing to join employment scheme, by race and employment. These are responses to the question above, from the CASE youth survey

Source	Gauteng	KwaZulu-Natal	Northern Province
Tap inside dwelling	59%	55%	38%
Tap on premises	33%	19%	26%
Tap in area	5%	9%	21%
Borehole/Well	1%	3%	5%
River	0	10%	9%
Tank	0	3%	1%
Other	1%	1%	1%

Table 5: Main source of water for household use, by province. These are responses to the question of '*what is the main source of water used by your household?*' taken from a CASE social delivery survey



Graph 1: Responses to the statement of 'the Constitution gives too many rights to criminals', by race. This is taken from a CASE human rights survey



Graph 2: Responses to the statement of 'police can use force to extract information', by education. This is taken from a CASE human rights survey

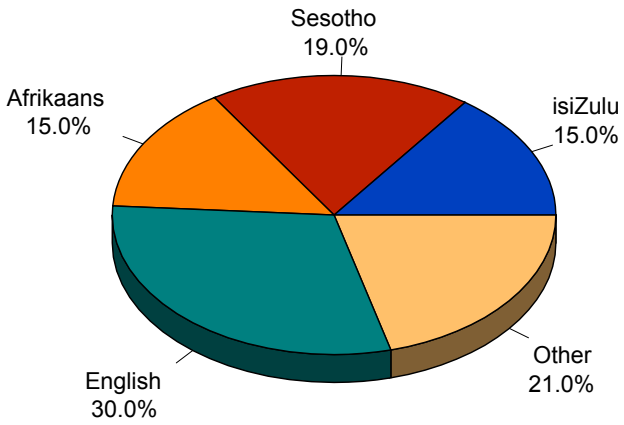


Chart 1: Language preferences in Gauteng, taken from a CASE human rights survey

4. STATISTICAL ANALYSIS

Statistical analysis can be conducted on data and research findings that are quantitative in nature (that is, they are or can be represented by numbers). We distinguish between two types of statistics. *Descriptive statistics* are used to organise and describe the characteristics of data about a population or a data set about a sample. This can refer to the population as a whole, in which case it would be a Census, or to any other well-defined population with clear boundaries, such as the Muslim population of Cape Town, the population of Durban, or the student population of South Africa. The most common measure used in descriptive statistics is *frequencies,* which break down the overall data into categories and present them as a percentage of the total. For example, the official racial breakdown of the South African population is that it is composed of Africans (76%), whites (12%), coloured people (9%) and Indians (3%). These figures are the frequencies of the different racial groups in the overall population.

Inferential statistics are used to make inferences or deductions from the characteristics of a sample to the characteristics of the population from which the sample is drawn. In other words, they tell us to what extent the information derived from the sample can be assumed to be valid for the overall population. Another way of putting it is that these statistics tell us whether the relations between variables that was found for a sample, would be found for the population as a whole as well. For example, the extent to which information about the sexual manners and customs of a sample of students at Wits University would hold for the entire population of Wits students can be determined with the use of inferential statistics. The same applies for the extent to which a high correlation between education and income found among a sample of Durban residents would be found for the Durban population as a whole.

The distinction between descriptive and inferential statistics is not related to the techniques used, but to the extent to which the data are definitive (in the case of descriptive statistics derived from a census) or merely approximating the real figures (in the case of inferential statistics derived from a sample). Most social research is conducted on a sample of the relevant population, and the findings are therefore never conclusive. We must always specify the relationship between the findings of the sample and the findings we would expect if the research targeted the entire population. This makes inferential statistics a crucial aspect of quantitative analysis of research findings.

MEASURES OF CENTRAL TENDENCY

The most basic statistical analysis is known as measures or indicators of central tendency, and in plain language as averages. These measures describe the characteristics of the data with the use of one central score or figure. They tell us something about the nature of the data in a concise way that saves us from the need to look at all the data points. With the use of central measures

we can reduce a thousand different observations in a survey to one figure, which summarises them. This is huge saving but we must always remember the principle of trade-off. Each summary statistic saves us time but also make us lose some information in the process. For example, if we are told that the average mark in the class is 65% we learn something about the level of performance in the class as a whole, with the use of one figure. At the same time, if this is all we know, we lose information about the individual marks and each student's performance.

There are three measures of central tendency that are commonly used in statistical analysis. These are the mean, median and mode.

The *mean* is the most common measure, and is what most people refer to in plain language as average. To calculate the mean we add up all the values in the data set, and divide the sum by the number of observations. For example, to calculate the mean height in a group of people, we add up the individual heights and then divide the sum by the number of people in the group. This operation is represented by the formula: X bar = sigma x over n. The mean is the most accurate indicator of the data set's central tendency. It is the mid-point above which and below which half of the total *values* are found. Although the mean represents the data set, it is possible that no single observation in it is identical to the mean. It is perfectly possible that the mean height of our group is 172 cm, and yet no member of the group is of that precise height.

The mean is the most accurate measure and is easy to calculate, but it has one main weakness: it is very sensitive to extreme scores, which are referred to as outliers. For example, in a group of 10 individuals whose heights range between 169 cm and 175 cm, the mean height would be around 172 cm. If a tall basketball player whose height is 216 cm joined the group, the mean height would rise to 176 cm, although all members except for the newcomer are below that height. Conversely if the new member is very short, 128 cm, the mean height of the group would drop to 168 cm, although all members except for the newcomer are above that height.

Another problem associated with the mean as a central score would be familiar to those who follow economic measurements such as the GDP per capita. This refers to the mean value of goods and services produced by each member of the population in a year. For purposes of international comparison countries are classified according to this measure, and South Africa usually finds itself with countries such as Costa Rica or Hungary in the medium-income category. Although countries in this category have similar GDP per capita, income distribution internally varies a great deal. Costa Rica and Hungary are relatively egalitarian and the majority of people create GDP of a value that is close to the mean, while South Africa is highly inegalitarian and most people create GDP that is much higher or much lower than the mean.

This example tells us something important about measures of central tendency. Although they provide essential information about the data (the group or the country), when used on their own

they can be misleading. This is why we frequently look at such measures together with measures of internal diversity or heterogeneity (more on this later on).

Another central measure is the *median*, which is the mid-point in a set of scores. One-half of the total *scores* fall above it and one-half of them fall below it. To calculate the median, we list all the values in order, from lowest to highest or the other way around, and find the middle point. If the number of scores is even, the median is the average of the two middle scores. The median is equivalent to the 50% percentile.

To take the same example as before, the median height in the group is arrived at by listing all the scores (heights of individuals members) in the group in order from the lowest (169 cm) to the highest (175 cm). We then select the mid-point – in a group of 10 members it would be the average between the 5^{th} and 6^{th} scores. In this particular case the median is likely to be very close in value to the mean.

The median is less accurate than the mean but it is better when there are extreme scores that would skew the results if the mean were used. For example, with the tall newcomer in the group, the median would change from the mid-point between the 5^{th} and 6^{th} scores into the 6^{th} score (a likely increase or no more than 1 cm, and still the mid-point of the group). With the short newcomer in the group, the median would still be the 6^{th} score, but this time it would reflect a likely decrease of no more than 1 cm in value from the previous median. In other words, when people with extreme scores join the group the median would not be affected as much as the mean would under the same circumstances.

The median is a superior measure to the mean in cases such as above, but we must realise that it is preferable only when we deal with small data sets. The larger the group is (the more observations there are in the data set) the less likely the mean is to be affected by extreme scores. In a group of 100 individuals, any additional person, regardless of how tall or short he might be, is unlikely to have much effect on the mean score.

The third central measure is the *mode*, which stands for the most frequent score, the one that occurs more than any other score. Data sets may have more than one mode, in which case they have a bimodal or multi-modal distribution. The mode is usually used with data measured on a nominal (or categorical) scale, where the data observations do not have a numerical value (and therefore cannot be added up to calculate the mean) and they cannot be arranged in an order (and therefore the median cannot be identified). For example, in a class of 10 students with six women and four men, the mode is ‘women’. In a class of 10 students with four whites, three Africans, two Indians and one coloured person, the mode is ‘whites’. Categorical variables, then, call for the use of the mode as a measure of central tendency, while in variables measured on other scales it is an inaccurate indicator of the group’s characteristics.

MEASURES OF DISPERSION (VARIABILITY)

Measures of dispersion (also called variability or spread) reflect the extent to which scores in a data set differ from one another. It is a measure of internal homogeneity or heterogeneity, which is used together with measures of central tendency to provide a fuller picture of the data. It serves to distinguish between two data sets, which may have the same mean but very different internal distribution of the values of the data. For example, we may have two groups with 10 members each. The mean height in both groups is 172 cm. In one of them, all 10 members are of the same height. In the other one, five members are 162 cm and the remaining five are 182 cm. Although they have the same mean, it is clear that the groups have different characteristics.

Let us take an example that should be familiar to those who follow economic measurements such as the GDP per capita. This refers to the average value of goods and services produced by each member of the population in a year. For purposes of international comparison countries are classified according to this measure, and South Africa usually finds itself with countries such as Costa Rica or Hungary in the medium-income category. Although countries in this category have similar GDP per capita, income distribution internally varies a great deal. Costa Rica and Hungary are relatively egalitarian and the majority of people create GDP of a value that is close to the mean, while South Africa is highly inegalitarian and most people create GDP that is much higher or much lower than the mean.

We must therefore use a measure of dispersion, such as the Gini coefficient (which measures income inequalities), which would transform the notion that South Africa belongs to the same category as Costa Rica and Hungary. If used on its own, the measure of dispersion would lead us to classify South Africa together with other countries with very high levels of income inequalities, such as Brazil, Jamaica and India. Doing that may be misleading as well. Only when we combine both central tendency and dispersion can we position South Africa meaningfully among its peers.

The two most common measures of dispersion are the range and the standard deviation. The *range* is simply the difference between the lowest and highest score. In the example of height above, the range is in the first group would be 0 cm (every one is of the same height), and in the second group is 20 cm (the difference between 162 cm and 182 cm). While useful, the range is limited in that it uses only the extreme values (lowest and highest) and does not tell us much about what is happening between them. We cannot distinguish between a group in which half of the members are 162 cm and half are 182 cm, and another group in which one member is 162 cm, another one 182 cm, and the rest are 172 cm.

A more sophisticated measure, as well as a bit more complicated to calculate is the *standard deviation* **(**represented by the letter s). It is defined as the average amount of variability in a set of scores, or the average distance from the mean. A large standard deviation means a very heterogeneous population, and a small one means a homogeneous population. Whether the

measurement is indeed small or large is relative to the size of the mean, because it is measured with the use of the same units. When applied to the two examples above, the standard deviation of the group where half of the members are 162 cm and half 182 cm is 10.54 cm. The standard deviation for the group where one member is 162 cm, another one 182 cm and the rest are 172 cm, is 4.71 cm. As we can see, whereas the range gave us the same result for both, the standard deviation allows us to distinguish between them.

Another measure of dispersion is the *variance*, which is derived from the standard deviation. It is standard deviation squared. However, the variance is difficult to interpret because it does not use the same units as the data, and is therefore less useful. The term variance is frequently used interchangeably with variability to indicate spread or dispersion.

MEASURES OF ASSOCIATION

Most social research is about the relationship between variables, or how the value of one variable changes together with the values of other variables. The extent to which two variables are related is called *correlation*. The coefficient of correlation (represented by the letter r) is measured on a scale of –1 to +1. It reflects the amount of variability that is shared between two variables.

Correlation can be positive: both variables change in the same direction, up or down (for example, higher education is correlated with higher income, or lower investment levels are correlated with lower rates of growth). In such cases the correlation will take a value between 0 and +1. Correlation can be negative: both variables change in opposite directions, one of them move up and the other moves down (for example, higher tax levels are correlated with lower saving levels, or lower economic growth levels are correlated with higher unemployment levels). In such cases the correlation will take a value between 0 and –1.

The closer the correlation coefficient is to 1, the stronger it is. Generally speaking a correlation between 0 and 0.2 is regarded as non-existent to very weak, correlation between 0.2 and 0.4 as weak, correlation between 0.4 and 0.6 as moderate, correlation between 0.6 and 0.8 as strong, and correlation between 0.8 and 1 as very strong. All this holds in either direction (regardless of the sign, plus or minus).

The usual way of calculating a correlation is based on the assumption that it is *linear*, which means that whatever relationship between the variables we identify, it tends to be consistent. However, variables frequently are correlated differently in a *curvilinear* way. This means that they stand in a certain relationship to each other up to a point, beyond which the relationship may be reversed.

An example can illustrate the point. The relationship between education and income is not linear. Up to a point both move in the same direction. People with MA degree usually earn more than

people with BA degree, who in turn earn more than people with high school degree, to say nothing of people with primary school education. At the same time, people with a PhD degree and above tend to earn less than people with MA degree.

The explanation for this relationship is that when people move from the education system into the labour market, they are usually rewarded for the time they spent studying because they have acquired skill and increase their capacity to operate successfully in the world of work. However, people with PhD degree and above tend not to leave the education system and not to enter the (non-academic) labour market. They stay at academic institutions where salary levels are lower than at other sectors, and as a result earn less than their former colleagues who have moved on.

A related measure of association is the *coefficient of determination*, which is the percentage of variance in one variable that is accounted for or 'explained' by variance in another variable. Its value is that of the square of the correlation coefficient (known as r square). Because the correlation coefficient is a fraction (between 0 and 1), its square (coefficient of determination) is always smaller than it. For example, a medium-strong correlation of 0.6 between education and income would result in a coefficient of determination of 0.36, which can be interpreted as the proportion of variance in income that is accounted for by the variance in education. In less technical terms we can say that people's education levels explain 36% of their income levels (or simpler still, education explains 36% of income).

This notion means, at the same time, that 64% of the variance is income levels are *not* explained by education. This figure of unexplained variance is called the coefficient of alienation (or also coefficient on non-determination). The ratio of explained to unexplained variance, gives us an indication of the explanatory power of a model. The more of the variance on the dependent variable that is explained by the independent variable(s) the more powerful the model is. The most common way of specifying and testing a model and its power to explain variance on the dependent variable is regression analysis, to which we now turn.

REGRESSION ANALYSIS

Regression analysis measures the effect of one or more independent variables on the dependent variable. When we measure the effect of only one independent variable we talk about simple regression; when we measure more than one variable at the same time, we talk about multiple regression. Regression analysis allows us to use the value of the independent variable in order to predict the value of the dependent variable. The regression equation that is used to calculate the predicted value of the dependent variable is based on the correlation between the two variables. The higher the correlation is, the more likely the prediction is to be accurate. However, only in cases where the correlation has a value of 1, can the prediction be perfect.

Let us take a hypothetical situation in which education is perfectly correlated with income. This happens when the values of both variables move in the same direction at the same time, but they do so at the same rate. For each year of completed education, a person's income increases by R600 a month. For each additional month of completed education, a person's income increases by R50 a month. When this is the case, the correlation is perfect and the prediction is perfectly accurate as well. If we know how many years and months of education a person completed (say, nine years and three months) we can predict his/her income precisely (R5550).

In all other cases the predicted value is an *estimate*. The regression equation gives us the best fit between the values of the independent and dependent variables. Since the correlation is never perfect, there is always some deviation between the predicted (or anticipated) values of the dependent variable and the actual values. This deviation is called an error of estimate. The average error for all values in the data set is the *standard error* of estimate, and is an indication of the accuracy of the prediction. The smaller it is, the more accurate the prediction is, and if prediction were perfect it would have a value of 0.

In order to enhance out ability to predict the value of the dependent variable (which is the same as increasing our ability to explain the variance in the dependent variable), we may need to add more independent variables into the regression equation, and turn it from simple to multiple regression. Let us take the example of education and income again. We have found that the correlation between the two is 0.6 and therefore that education accounts for 36% of the variance in income. This is not good enough since almost two-thirds (64%) of the variance remains unexplained. If we add another independent variable to our model, that may increase its explanatory power and allow us to predict income better.

In order for this additional variable to improve our ability to predict, two conditions must be met. The new independent variable *must* be correlated with the dependent variable – if it does not, it will not be related to it and therefore will not help in the explanation. The new independent variable *must not* be correlated with the existing independent variable. In other words, to make prediction optimal, all the independent variables must be correlated with the dependent variable but not with each other.

The reason for that is that we seek to examine what each independent variable contributes to the model on its own. If a number of these variables are highly correlated it will be impossible to separate out their effects. For example, if we added to the model of 'education explains income', the variable of functional literacy (the ability to deal with increasingly complex texts), we would not increase our ability to predict the values of the dependent variable by much. This is because functional literacy is highly correlated with education, and its effects will have been identified and measured already through the variable of education.

The rationale of adding variables to the model is to identify and measure effects that are unique, and have not been captured already through existing variables. One of the implications of this is that the *order* in which variables are added to the model makes a difference to the outcome of the regression analysis. If education was added to the model before functional literacy, most of their combined effect will be captured by education, and the same is true if the order were reversed. The decision which variable should be added first should be made on the basis of some theory that explains the relationship between the elements of the model.

When adding variables to a regression model, then, we must be economical. We have to evaluate whether or not each new variable is likely to add to our ability to predict. We normally make this decision on the basis of a matrix of correlations between all the potential variables, which can be generated in the course of calculating the regression equation. In multiple regression, each independent variable is measured separately for what it ***adds*** to the explanation (its net effect). The outcome of the equation reflects the effects of all the variables taken together (this is represented by the r square statistic).

5. QUALITATIVE RESEARCH METHODOLOGY

This section is intended to provide students with an introduction to qualitative research, with a focus on the following:

- Theoretical perspectives on qualitative research.
- Qualitative methodologies.
- Practical application of qualitative methods in research.
- Qualitative data collection, management, analysis and reporting.

WHAT IS QUALITATIVE RESEARCH?

Qualitative research is a broad approach in social research that is based upon the need to understand human and social interaction from the perspectives of insiders and participants in the interaction. The main aim of projects and studies that follow this approach is to describe, understand and explain human behaviour. Qualitative research has strong methodological roots, and a collection of methods exist for gaining access to research subjects, for gathering qualitative data and for analysing such data. In an introductory section you were introduced to the idea that research can be quantitative or qualitative in nature, and examples were given of these different forms of research. Some of the features that are more typical (though not exclusive) to qualitative research are outlined below.

Naturalistic: Qualitative research emphasises, and is especially well suited to, the study of attitudes and behaviours in their natural setting, as opposed to what may be considered the more artificial settings of quantitative surveys. The focus on being naturalistic reflects a concern with the normal course of events and the importance placed by qualitative researchers on being as non-intrusive, non-manipulative and non-controlling as possible. They wish to observe events and actions as they unfold without interfering or intervening. As an example, the quantitative researcher may conduct a large, national survey of land reform beneficiaries in order to explain whether the programme has been effective in improving their quality of life. Statistical methods would be used to select a sample and a structured questionnaire would be developed. In contrast, the qualitative researcher would wish to spend more time in the field or natural setting, observing the daily struggles of a small number of land reform beneficiaries and understanding the obstacles they face in trying to cultivate the land they bought with the land reform grant.

It is important to note that these two approaches are ***not*** mutually exclusive, as they investigate different aspects of the same issue. In fact, it may be argued that only in combination of the two can research provide a comprehensive picture of the object of investigation.

Process oriented: Qualitative research is oriented towards studying processes over time rather than outcomes. For instance, the qualitative researcher may be able to examine the rumblings and final explosion of a riot as events actually happen rather than afterward in a reconstruction of the events. The qualitative researcher is therefore interested in studying events as they occur rather than having to reconstruct them after the event has already happened.

Insider perspective: As already mentioned, qualitative research attempts to view the world through the eyes or perspective of the people being studied. The implication of this is that the researchers have to be more than mere observers in a natural setting or research site. They are not trying to be objective outsiders. A deliberate attempt has to be made to put themselves in the shoes of the people being observed, and to try to understand their actions, decisions, behaviour and practices from participants' perspective. The focus on the insider perspective is especially important when there are big differences between the researcher and the people being studied, such as language, race, culture, beliefs, etc. These introduce potential barriers between the researcher and the participants and pose a serious challenge to the ability of the researcher to understand and convey an insider perspective.

Thick description: The main aim of qualitative research is in-depth or 'thick' descriptions and understanding of actions and events. Thick description is a rich, lengthy description that captures actions as they occur. It entails a lot of detail and a lot of quotations. Because of this, qualitative reports are often rich in description, colourful detail and unusual characters, which gives the reader a feeling for social setting. A qualitative researcher may use a case study approach, in which she gathers a great amount of information on one or a few cases, goes into greater depth and gets more detail on the cases examined. That is, gathers a range of information on a small number of selected cases.

Context sensitivity: Qualitative research places strong emphasis on many aspects of social, historical and physical context for understanding the social world. When an event, social action, answer to a question, or conversation is removed from the context in which it appears, social meaning and significance become distorted. Therefore qualitative research is holistic in that the phenomenon being studied is seen as a complex system that has to be studied on all its aspects.

Inductive approach: Qualitative research frequently starts off with a basic research question. Hypotheses and theory frequently emerge during the data collection and analysis processes, based on observation. Researchers immerse themselves in the details and specifics of the data in order to discover important categories, dimensions and interrelationships. This inductive method is referred to as *grounded theory*, since theory is built from data or grounded in the data and is therefore faithful to the evidence.

Cyclical research design: Qualitative research makes successive passes through steps. Allowance is made for trial and error since it is recognised that things may unfold differently

than expected. Qualitative research therefore uses more of a 'logic in practice' focus, where the logic of how research is actually carried out relies on the informal wisdom that has developed from the experiences of researchers. Few procedures or terms are standardised and research is learnt by reading many reports, by trial and error, and by working in an apprentice role with an experienced researcher.

For ease of reference, a summary of some differences in approach between qualitative and quantitative research strategies is presented in the following table. These are not to be taken as absolute differences but rather as different emphases that can be accommodated within the same research design:

Qualitative Research	Quantitative Research
Inductive	Deductive
Subjective, insider-centred	Objective, outsider-centred
Process oriented	Outcome oriented
Relative lack of control	Attempt to control variables
Goal: understand actor's perspective	Goal: find facts and causes
Thick description	Formal description
Cyclical research design	Linear research design

WHEN TO USE QUALITATIVE METHODS

When should you use qualitative research? It is generally considered appropriate when the research question that has been developed involves learning about, understanding or describing a group of people, their interaction, behaviour, and experiences. Examples of such questions could include: 'What kind of lives do prisoners in C-Max prison live?', 'What is it like to be a poor, rural South African?' or 'What is it like to be HIV positive in South Africa'. This sort of questions can be addressed by qualitative methods, since they try to describe and interpret people's feelings and experiences rather than measure their external characteristics (their income, level of education, voting record, etc).

Qualitative research can be used when you are exploring new territory or a new way of looking at a more familiar topic. For instance, given the rising incidence of orphans due to the death of parents from AIDS or AIDS-related illnesses, exploring the experiences of child-headed households in rural areas of South Africa is likely to be an important new topic of research. Qualitative research could also be seen as relevant for projects or studies where you require an in-depth understanding of subtle nuances or a complex, dynamic phenomenon: not only who people voted for in the past and intend to vote for in the future, but the range of possibly contradictory reasons and motivations for their decisions.

Qualitative methods are also appropriate in situations where the insider's perspective is likely to be substantially different from the outsider's perspective. This is true, for example, of the study of deviant behaviour, such as drug dealing, drug addicts, and youth gangs ('jackrollers'). In a quantitative study of household livelihoods, a situation could arise where no one is employed and the only form of subsistence is the growing and selling of dagga. It is likely that the respondent to a formal survey may deliberately not mention or report this illegal activity, despite the promise of confidentiality. A qualitative researcher working in the community, and having developed a relationship with the household over time, is better situated to gain an understanding of the hardship endured by the household and the necessity of cultivating dagga in order to put food on the table or pay for the children's education. Other phenomena where the insider and outsider perspectives may differ could include the homeless, street children and prostitution.

Qualitative methods can also be used when a holistic or complete picture will restore the necessary perspective to the research topic, when unanticipated side effects are important, or when there is a need to supplement quantitative evidence with more detailed qualitative evidence.

STRENGTHS AND WEAKNESSES OF QUALITATIVE RESEARCH

Having explored the questions of what is qualitative research and when it can be used, it is useful to take a critical look at what some of the positive elements and limitations of the approach are.

Strengths:

- Qualitative research provides a rich, contextual perspective on the issues that you may not get in a standardised questionnaire
- Qualitative research can generate new theories and recognise phenomena ignored by previous researchers and literature
- Qualitative research helps people understand the worldview of those they are studying. It recognises that in any social context it is possible that people may occupy different socially constructed realities and may therefore have different ways of interpreting their actions and the actions of others.
- Qualitative researchers examine phenomena in their natural setting. The goal is to try to capture what is happening without being judgmental, present people on their own terms, and convey their feelings and experiences from their own perspectives.

Weaknesses:

- The nature of qualitative research makes it very expensive to involve large number of participants. Because of the limited number of participants the results may not be generalisable. When there is a small sample size there is the possibility that the individuals interviewed are significantly different from the rest of the population. It also

leaves open the possibility that important issues may be missed altogether. The small sample size also makes it difficult to aggregate data and make systematic comparisons.
- Qualitative research is dependent on researcher's personal attributes and skills.
- Participation in a 'natural' setting changes the social situation (although not participating can change the social situation as well).
- Participation is time consuming and frequently requires immersion in a setting and thus takes the researcher away from 'normal' life.

QUALITATIVE RESEARCH INSTRUMENTS

Many researchers are excited at the prospect of doing qualitative or field research since it does not require any knowledge of statistics or abstract theoretical hypotheses. Instead it involves 'getting your hands dirty' by means of direct face-to-face social interaction in the natural setting. However, in order to become a competent qualitative researcher, it is very important that you are familiar with the basic skills that will be required of you.

Researchers opting to do qualitative rather than quantitative research may have reason to think that they are taking an easier route. Interacting with people in natural everyday settings is, after all, only an extension of what we do all the time. Doing qualitative research may therefore at first glance seem to come easily and naturally: being able to look, listen and speak. However, qualitative research also requires special skills, which may be derived from everyday skills but need to be developed in particular ways in order to become research skills.

Whereas in quantitative research one can rely on tried and tested instruments to collect data, and on statistical techniques to analyse the data, in qualitative research it is ***the researcher who is the primary instrument*** for both collecting and analysing the data. To do better qualitative research, you may have to work on your personality and attitudes. Skills such as listening and interpreting are in some ways more difficult to describe than quantitative skills, and more difficult to develop.

Perhaps the most important skills which need to be learnt are listening, looking or observing, questioning and interpreting, even though we do these things anyway, almost all the time. Consider, for example, the skill of learning to listen better. What specific skills make up good listening? Perhaps you might pause and list for yourself five skills that are essential to good listening and see if you can imagine how you might teach a person to develop these skills. Not easy, is it? Listening skills are dependent on researcher as a *person*.

Further adding to the importance of the researcher as an instrument is the general recognition in the literature on qualitative research methodology that the triumph of classic qualitative studies is due more to dedication, hard work, sensitivity and writing skill of individual researchers than

anything intrinsic to research approach. The researcher has to be a resourceful, talented individual who has ingenuity, and an ability to think on her or his feet while in the field.

It is important for the qualitative researcher to establish rapport (trust) with the person being studied. Rapport is a step towards obtaining an understanding of the people being studied and moving beyond understanding to ***empathy***. Empathy means seeing and feeling events from another person's perspectives. The qualitative research attempts to understand how reality appears to those being studied but also reporting on their own feeling and experiences in the data. The principle of empathy has had a strong influence in the social sciences, and particularly in the development of qualitative methodologies. The idea that 'telling it like it is, is telling it in context' has been formulated in many ways. Meaning is contextually grounded and one has to learn how to gain access to the context to grasp meaning.

ENSURING QUALITY OF RESULTS

A concern with qualitative research is that it may not be objective since the researcher's biases and values may influence the results. Field researchers spend long periods of time with the people they are studying. They get to know these people and their presence may influence events that take place. The field researcher sees, hears, remembers and records only some of what occurs, and includes some of this material in the final report. Research integrity is a crucial element. All research involves placing some degree of trust in the researcher. Opportunities for the dishonest and unethical researcher exist in all research, but the possibility of unintended distortions and personal biases is potentially greater in qualitative research.

The qualitative researcher must ensure that the findings accurately reflect the evidence and that systematic checks on evidence are included in the research design. In the first instance, the researcher should examine all existing evidence and look for internal consistency. Internal consistency refers to whether the data is plausible given all that is known about a person or event. External consistency is achieved by verifying or cross checking existing evidence with other, divergent sources of data. For example, does other evidence corroborate the researcher's observations?

Sometimes the researcher may invite subjects to read details of the study and judge their adequacy. It may also be useful to discuss the study with other independent researchers. The independent researchers should be supplied with all theoretical notes, raw data and interpretations in order to point out biases, flaws and other problems in the study.

Extensive field notes are an important aspect of enhancing the validity and reliability of research. It is important to read through field notes continuously. It is important to realise that the social world is not static and that the research design may need to be adjusted accordingly. An important way in which a qualitative researcher creates trust is in the presentation of evidence. It

may not be possible to present all the detailed notes in a report but researchers need to convince readers that they had an intimate knowledge of events, people and situations.

The use of multiple methods is generally considered to be one of the best ways to enhance validity and reliability. Researchers often feel that they have to rely on either the qualitative or the quantitative approach. There are limits and strengths in **both** approaches. In some instances, qualitative research may serve as a useful planning tool for quantitative research. Before you undertake more sophisticated and expensive quantitative research, some time spent conducting qualitative research may be worthwhile in order to generate a greater depth of understanding of social processes in specific contexts. Quantitative research findings can be interpreted with the use of qualitative research results and vice versa.

REVIEW OF DATA-GATHERING METHODS

There are many different types of available methods, though the primary methods that qualitative researchers depend on for collecting information for their projects and studies are (1) interviewing, in particular the *in-depth interview* and the *focus group*, and (2) observation, most commonly in the form of *participant observation*. It is expected that most of you should have been exposed to, or at some stage applied, one or all of these methods. However, given that these are the most widely used techniques in the qualitative tradition, it is important that we spend time reviewing the fundamentals of each before moving on to discuss some of the supplementary, lesser known and used methods.

INTERVIEWS

Among the various research methods that are at the disposal of the qualitative researcher, the interview is generally the favourite. In essence, the interview is a conversation that puts emphasis on the art of asking questions and listening. However, while a qualitative interview is a form of conversation and exchange reminiscent of normal daily conversation, this apparent simplicity is deceptive. Interviews differ from casual conversations in the sense that they are arranged in advance and the researcher will explain to the respondent why they have been approached, what they will be asked about and how the information they provide will be used. The respondent will give their *informed consent* to the interview. The researcher will set the agenda for the discussion. The level of control exercised by the researcher will vary depending upon the type of interview, but there is usually an implied understanding that the researcher is given control to direct and control the discussion.

When should you use interviews for research?

The decision about whether or not to use interviews depends on whether you want to:

- Gather relatively superficial information from a large number of people (breadth), or
- Collect very detailed information from a smaller number of people (depth).

Researchers who have decided to use interviews as a data collection method have usually chosen to obtain information that provides more of depth into the topic being studied, from a relatively small number of participants. Critical questions that researchers should ask themselves when they make this decision is:

- Does my research require the detailed information that interviews produce?
- Is it acceptable to depend on information collected from a small number of respondents?

The decision to choose depth over breadth will depend on the needs of the specific project. One example of where it may be necessary to get more depth than breadth is where the data being collected may be based either on emotions, experiences and feelings rather than more simple factual issues.

A second example of where depth is more important than breadth is where a project aims to explore sensitive issues such as sexual behaviour, domestic violence or drug use. Finally, another example of where a project would require more detailed information is when the information is gathered from a small number of sources that have particular knowledge or insight into an issue.

***Types of interviews*:**

There are many different types of interviews, and a common and useful way of classifying these is by thinking about how structured or inflexible the interview will be. *Structured interviews* involve tight control over the format of the questions and answers. The questions used in this kind of interview are similar to the questions asked in a survey or quantitative research projects. The researcher has a list of standard questions that must be asked in a particular sequence and the respondent is offered a limited number of pre-coded answers from which to choose. Structured interviews are often used for social surveys where researchers are trying to collect data from a large number of respondents.

Semi-structured interviews usually involve a clear list of issues to be addressed and questions to be answered, but there is more flexibility around the sequence in which they are asked and the interviewer will allow the respondent to speak more broadly about the topics being discussed. The answers are open-ended and there is more scope for the respondent to provide greater detail on points of interest. *Unstructured* or *in-depth interviews* are even more flexible and usually encourage the respondent to share his or her thoughts on a particular issue. The researcher's role is to be as unobtrusive as possible – to introduce a theme or topic and then let the respondent develop his or her own ideas. What differentiates semi-structured and unstructured interviews from structured interviews are the opportunities for the respondent to express themselves in their own words and develop their own train of thought.

In-depth interviews

In-depth interviewing is a popular method of data collection. The in-depth interview is more similar to an ordinary conversation than a question and answer session. However, it differs from a conversation in that the researcher has a clear purpose – to learn about the participant's perspective and experiences. Typically, the researcher has a list of topics to be covered in the interview. It is important for the researcher to know their interview guide well enough so that they do not have to continually refer to it.

In-depth interviews allow for greater flexibility in questioning the respondent. The researcher examines issues in greater detail and depth during the interview. The researcher may probe for more detail or ask additional questions to clarify the respondent's opinion or feelings towards a particular subject. Respondents are given freedom to express their opinions about the issue being studied. They are given the chance to convey their perceptions and experiences in a context important to them. Researchers can clarify ambiguous issues or any inconsistencies that the respondent may give. The researcher can also observe non-verbal behaviour. This allows researchers an opportunity to make a more accurate assessment of the feelings behind respondent's answers to the issue being studied.

Example: In-depth Interviews

As an input into the annual *South African Health Review* in 2001, a qualitative study was undertaken that focused on gathering and listening to the voices of health service users to help improve health service provision. The study drew on information from two sources. First, in-depth interviews were conducted with 14 HIV positive people who use health services in Gauteng. They were recruited from NGOs and HIV/AIDS support groups and from a wider study of HIV/AIDS services provided at the primary level in the province. They were interviewed individually about their experiences of accessing and using public health facilities. Second, information was collected from 24 focus group discussions conducted in 1998/99 as part of a wider study that investigated the costs and quality of 19 public and private primary care facilities across four provinces. The interviews and discussions were quite informal, based on a list of questions that were aimed to guide the researcher rather than a structured questionnaire. The objective of the interviews was to allow users to describe their own experiences of health services, reflecting on positive and negative experiences.

Source: Modiba,P., Gilson, L. and H. Schneider (2001) Voices of Service Users. In Health Systems Trust (Ed.) South African Health Review 2001. Durban: Health Systems Trust.

The interview process

Conducting an interview involves personal interaction with the respondent. It is important that you are very familiar with the interview guide. One way of ensuring it is to try out ('pilot') the interview a couple of times with someone you know or with a random respondent. This will also give you an indication of how long the interview will take to conduct. Once you have decided on the type of interview you need to identify where the interview should take place. Ideally, the place should be quiet and private so that respondents feel free to express their views honestly and openly. It is very disruptive if the researcher or respondent is being disturbed while conducting the interview. It is important to be aware that the physical environment may influence the interview. The researcher should ensure that the interview room is organised to allow for comfortable interaction between the researcher and the respondent. It is helpful to explain to the respondents approximately how long the interview will take when you set up the appointment so that they are able to give the interview undivided attention.

The researcher should start by introducing him/herself and thanking the respondents for giving up their time. The researcher should then present a brief summary of the purpose of the interview. The researcher should aim to establish a rapport with the respondent in the first part of the interview. This can be done by asking quite general questions which are not too sensitive, in order to help make the respondents feel relaxed and put them at ease.

Some researchers prefer to tape record the interviews they conduct. If the researcher intends to do so s/he must obtain the consent of the people that are being interviewed. It is important that the researcher checks that the recording equipment is working before the interview and knows how to use it. Recording interviews will provide the researcher with a more reliable account of the interview and allows the interviewer to give the respondent undivided attention. However, the presence of tape record may inhibit the answers that the respondent offers. The advantage of writing notes in the interview instead of taping is that researchers can record information that may be exchanged before the interview begins and make notes of what questions were not comprehensively covered, or new questions that might be added. It will also provide the researcher with an opportunity to note down any non-verbal behaviour that may be important.

Interviews may last from 20 minute to an hour and half. At the end of the interview it is important to ask if the respondents have anything else to contribute and to thank them for participating in the interview.

Taped interviews will need to be transcribed afterwards. A word-for-word transcription is a time-consuming exercise. It is easiest using a word processor to enable moving around of data and searching for particular words later on. If the transcriber is not the person who conducted the interview, the researcher who carried out the interview should read the transcript to check that it is an accurate reflection of the interview. Alternatively the researcher may summarise the main points that were raised for each question.

Important points for the interviewer to remember:

- A good interviewer should be *attentive*: although this may appear obvious, it is easy for the researcher to lose the thread of the discussion and not pay attention to what the respondent is saying.
- A good interviewer needs to be *sensitive to the feelings of the respondent*: this is courteous, and will encourage the respondent to respond honestly to the questions. If the researcher can empathise with the feelings of the respondent s/he will be in a better position to elicit relevant information from the respondent.
- A good interviewer needs to be *able to accept silences*: During the course of an interview, there is a strong likelihood that silences may occur. The researcher must master the skill of allowing the respondent to collect their thoughts and answer the questions at their own pace. An experienced researcher knows that silences are a resource.
- A good interviewer is *adept at using prompts*: while silences can be productive, there are times when the researcher may feel it necessary to encourage the informant to speak. This should be done in a subtle way rather than demanding answers, the idea being to gently nudge the informant to share their knowledge or thoughts on an issue. Examples of how this may be done include repeating the question, repeating the last few words spoken by the informant, or providing some examples.
- A good interviewer is *adept at using probes*: there are instances where the researchers may want to explore a topic in greater depth or where they feel that the respondent is reluctant to answer or some explanation may be needed or inconsistencies clarified. Examples of probes include asking for examples, clarification or more details. Again, it is critical that the probing be subtle and not aggressive.
- A good interviewer is *skilled at conducting checks*: one of the benefits of interviews is that they allow the researcher to verify that the informant has understood properly. The researcher can summarise the respondent's thoughts and confirm that his/her understanding is accurate and make the necessary corrections if a misunderstanding has happened.
- *With group interviews, a good interviewer manages to let everyone have a say*: a key skill that qualitative researchers need to develop is the ability to make sure that strong individuals do not dominate discussion or bully others into agreeing to their point of view.
- The good interviewer is *non-judgemental*: one of the first and most important skills that the qualitative researcher has to master is to, as far as is possible, put aside their own beliefs and opinions about the topics that is being discussed. This means that the interviewer must ensure that they do not indicate surprise, disapproval or pleasure through what they say or their facial expressions or gestures.

Focus group interviews

A focus group is a group discussion generally involving between eight and twelve participants from similar backgrounds or experiences to discuss a specific topic of interest. The group of participants is guided by a moderator, who introduces topics for discussion using a pre-prepared question guide and helps group members to participate in a lively and natural discussion among themselves. The question guide is an outline of the major questions to be asked of the group, and is flexible enough to allow the discussion to develop naturally, but at the same time provides sufficient structure and direction to prevent digression from the original topic of study. An observer records key issues raised in the session, and other factors that may influence the interpretation of information. This involves noting down the responses from the group, and observing and documenting any non-verbal messages that could indicate how a group is feeling about the topic.

Focus group discussions have many of the same features as in-depth interviews but enquiry usually occurs within a small group setting. Focus group discussion is used primarily to investigate normative aspects of behaviour. They permit exploration of the way in which people interact in discussion of a topic and of the extent of agreement in opinion and attitude. A focus group is *not* a group interview where a moderator asks the group questions and participants individually provide answers. It relies on group discussion and is especially successful where the participants are able to talk to one another about the topic of interest. This is important as it allows the participants to disagree or agree with each other. It can provide insight into how a group thinks about an issue, about the range of opinions and ideas, and the inconsistencies and variation that exist in a particular community in terms of beliefs and their experiences and practices.

Focus group discussion is usually 'focused' on a particular area of interest and does not cover a large range of issues. One or two topics are usually explored in greater detail. Focus groups are also 'focused' because the participants usually share a common background characteristic (age, sex, race, education, religion, or something directly related to the topic). This encourages a group to speak freely about the subject without fear of being judged by others thought to be superior, more expert or more conservative. Focus groups are useful for exploring people's beliefs, attitudes and opinions as a group. They indicate the range of a community's beliefs, ideas or opinions, and are especially valuable for gaining baseline information for a project. They are useful in providing background information for designing question guides for individual interviews and questions for structured interview schedules.

On the negative side, findings usually cannot be used to make statements about the wider community. Participants often agree with responses from fellow group members and so caution must be exercised in interpreting the results. An ill-trained moderator can easily force the participants into answering questions in a certain way. There is also the possibility that participants will be reluctant to disclose thoughts on sensitive issues. Focus groups have limited

value in exploring the complex beliefs of individuals. In-depth interviews are a more appropriate method for this purpose. The danger exists that the group will portray what is socially acceptable rather than what is really occurring or believed in a community. This problem can be limited by careful participant selection and good moderating skills.

Practical tips for conducting focus groups:
Group interviews generally involve a degree of risk and unpredictability. While they can be very successful in eliciting a wealth of information at a low cost, they may sometimes fail. If members of the group are not *comfortable* with each other, if a single individual dominates discussion or if the topic stimulates little interest then little of value will emerge. It is also important that the group is as *homogenous* as possible in terms of sex, educational background, economic and marital status and other relevant characteristics. This homogeneity will reduce the danger that discussion is inhibited by considerations of status or hierarchy. The *choice of venue* for the discussion is one important practical consideration. It should be informal and congenial. It is important to make provisions for refreshment or attendants to take of young children.

The performance of the moderator is vital to the success of a group. The task does not require high academic skills but good communication skills. It is important that you, as the moderator:

- Do not convey the impression of being an expert. However, you should be familiar with the subject matter.
- Remain objective. Do not allow your opinions to become apparent.
- Encourage all to participate and do not allow one person to dominate.
- Encourage discussion between participants.
- Control the time allocated to each topic.
- Be sensitive to new information and ensure that these are discussed in depth.

ETHNOGRAPHY AND PARTICIPANT OBSERVATION

The ethnographic approach to qualitative research comes largely from the field of anthropology. *Ethnography* focuses on the study of cultures, and sub-cultures, for example rural settlements, professional groups such as policemen or doctors or marginalised groups such as prostitutes, drug users and vagrants. The emphasis in ethnography is on studying an entire culture. Originally, ideas of culture were tied to the notion of ethnicity and geographic location, but more recently the use of the term has been broadened to include virtually any group or organization. That is, we can study the 'culture' of a business or a defined group (for example a Rotary club). Ethnography is a broad area with a variety of practitioners and methods. The most common ethnographic approach to field research is participant observation. Ethnographic research involves the researcher becoming immersed in the culture as an active participant and recording extensive field notes.

Participant Observation

Talking to people in an interview is considered to be an effective and direct way of learning about their feelings and experiences. However it relies on what the respondent remembers and interprets from an experience or event. In contrast, *observation* occurs while the event is actually taking place and it allows the researcher to witness events first hand, rather than rely on after-the-fact accounts. The most common form of observation is known as *participant observation,* which is a method in which the researcher or observer participates in the daily life of the people that have been chosen for study. Researchers who are immersed in the setting may observe things that happen, listen to what is said, question people and begin to experience reality as the participants do over a length of time.

The most important aspect of this type of research is to observe events as they would normally occur and in the settings where they usually happen. This method is selected when it becomes clear that the information needed would be difficult to obtain using other methods. This could be because those involved in the culture may disguise certain aspects of their culture, or simply because certain events, patterns, interactions, and practices are only visible to those who are members of the group or who spend a long time with it. The researchers' participation in the culture or event being studied (experiencing the insider's view) allows them to gain valuable knowledge about an event that may have been missed by those who experience things as outsiders. Participant observation allows the researcher to place greater emphasis on depth than breadth of data, observing the detail, subtleties, complexity and interconnectedness of the setting. This approach puts more emphasis on a holistic understanding, in which the participants are studied in relation to the whole culture and event (their context).

Participant observation can vary quite a lot in terms of what the people being observed know about the participant observation and to what extent the researcher is involved in the culture that is being studied. However, there are three basic types of participant observation.

The first is *total participation*. It is a form of participant observation where the qualitative researcher operates in a secret manner by keeping his or her role a secret and assuming the role of someone who normally participates in the setting. The participant observer operates in a similar way to an undercover policeman. The advantage of this type of participant observation is that the people being studied will act in a natural way and not be affected by the presence of the researcher. This form of participation is easiest in large and open communities, but has been used successfully in smaller settings such as the study of organisations and occupations. For example, a researchers may accept employment among the population being studied without making the research known.

The second form of participant observation involves *participation in the normal setting*. This form of participant observation does not involve total immersion, but refers to researchers being close to the action. The role of the researcher is chosen so that it does not affect the naturalness

of the setting, but allows a certain distance from the group under study. For example, in a study on prostitution, the researcher may for instance act occasionally as a receptionist of a brothel, allowing access to the normal scene while keeping a safe distance from the heart of the action.

The final variant of participant observation focuses on the *participant as observer*, where the researcher 'hangs out' with or 'shadows' a group through normal life rather than becoming a member of the group. The researcher's identity is openly recognised, allowing for informed consent, though the naturalness of the setting may be compromised.

Life amongst the Death Squads: Observational Problems

Jacques Pauw is best known for the two-hour television documentary that he produced in 1996 on mass murderer Eugene de Kock and his colleagues including assassin Joe Mamasela and convicted murderer and CCB operative Ferdi Bernard. The television programme also exposed the Vlakplaas killing exercises. He started examining apartheid's death squads in 1989 and it became his obsession for the next seven years.

One of the potential problems associated with participant observation is getting too close to the participants or losing perspective. In Pauw's case, this became something of an issue. As he himself admitted in retrospect: "Perhaps I got too close. My wife certainly does not understand how it is that I can have them over at my house for a drink?".

While on the one hand he despises, even hates De Kock and his fellow killers, Pauw admits to feeling a certain empathy with them: "I got on well with them". This admission can be seen in the context of a much broader issue of him coming to terms with his Afrikaner background and the violence carried out by security police during the Nationalist government.

Despite the risks involved in uncovering these security police operatives Pauw says he has never really feared for his life. "These people were nothing more than a bunch of drunken criminals and I decided that they had more important people to take out."

Source: Johnson, A. (1996) There's Life after the Death Squads for Pauw. Mail and Guardian, 25 October 1996.

Guidelines and Considerations for Conducting Participant Observation:

The most important point to remember about participant observation is that the researcher should not come with predetermined ideas, but should come with an open mind and be prepared to learn

about the situation and setting. Thorough participant observation is *time consuming*, often requiring months or years of intensive work, because the researcher needs to become accepted as a natural part of the culture to ensure that there is a comfortable relationship between the researcher and people being observed. Before starting the researcher must decide on the limit of commitment and be realistic about how much time is available and necessary for the study. Many researchers have to consider project deadlines and other constraints and will need to determine how to conduct the participant observation effectively within these constraints.

The researcher should avoid having too many fixed ideas about what will be observed in the beginning to enable him or her to gain a *general, holistic feel* for the situation. This process will lead into more *focused observations* as the significance or meaning of events becomes clearer. This may allow for *special observations* that investigate aspects of the setting that appear unusual or contradictory. This should finally lead to the *identification of issues and problems* that are considered critical by the participants. Throughout this process the researcher should try to remain focused on the purpose of doing the study, and be prepared for unexpected but useful information.

Note taking is an important skill and tool for researchers who carry out participant observation. The researcher needs to record observations in the field into a permanent record as soon as is possible. Records are usually in the form of extensive written notes or tape-recorded memos, referred to as *field notes*. It is important to record events immediately after the observation so that the detail is not forgotten. It is also important to take notes outside the arena of action because the people who are being observed are unlikely to behave in a natural way if they are aware of being tape-recorded or having notes written about them.

Access: Before setting up the participant observation the researcher must consider how to gain access to a particular setting. Public places such as shops, taxi ranks, street traders, soccer matches, may be relatively easy to observe without causing any or much disruption, while others, such as gangs, may be more difficult. The answer is to find someone who is an accepted member of the group or setting that can help the researcher gain access and initial acceptance. These people are sometimes referred to as a *sponsor*. Sometimes the sponsor is a gatekeeper, and if not s/he is usually on good terms with some of the gatekeepers. *Gatekeepers* are people who have control over who is allowed in and who is not. These are usually parties who have vested interests either in the issue at stake or in the well-being of the potential respondents, such as superintendent in a hospital; principals and senior teachers in schools; inkosi or induna in a tribal area; elected or self-appointed leaders in informal settlements.

If the researcher wishes to conduct secret participant observation is it important to acquire the necessary *credentials* to appear convincing in the a role or setting so as not to stand out. For example, white researchers would find it very difficult to infiltrate a gang that lives and operates in Soweto.

Example: Access to the Drugs and Sex Industries in South Africa

Ted Leggett, a researcher based at the ISS, encountered various issues of access to in his recent study of the sex and drug industries in the country. In his own words:

"I am writing…as a white, American, male academic and none of the people I am writing about are white, American, male academics. There are advantages and disadvantages to being an outsider, but my identity has a definite effect on the kind of information I collect in the field. For example, most inner-city sex workers find it easy to talk to me because foreign males make up a good portion of their client base. In the beginning they usually present the image they have learned to use when dealing with clients. They tend to portray themselves as happy, healthy workers who enjoy (and are very good at) their job…As time passes and people relax, this façade tends to fall away, but in the end there are no objective observers." (2001:vii)

Ted had spent a substantial amount of time observing drugs and prostitution circles prior to the study. He spent two years working in a shelter for homeless women in New York, where many prostitutes were addicted to drugs. He also had experience of working as a prosecutor. Finally, after arriving in South Africa in 1995, he joined the School of Development Studies (University of Natal) where he did extensive research into youth and crime, as well as being editor of the journal "Crime and Conflict".

Source: Leggett, T. (2001) Rainbow Vice: The drugs and sex industries in the new South Africa. Cape Town: David Philip.

The selection of a topic for research using participant observation is shaped by the researcher's interest and background characteristics. It should be remembered that participant observation is a difficult method to use because it can be very physically and emotionally draining and is often more demanding and time-consuming than other research methods. Many researchers tend to explore aspects of social life, which their own life experience have prepared them for.

CONTENT ANALYSIS (REVIEW OF DOCUMENTS)

Apart from participant observation and interviews, qualitative researchers often rely on the gathering and analysing of documents as another key method. Documents are non-reactive, which means that the researcher does not intervene in the context and therefore does *not* have to rely on the cooperation of participants, and they are a useful source for the values and beliefs of participants as well as for background information. The observant researcher can infer from the evidence of behaviour to attitudes without disrupting those being studied. The kind of archival

data or documentation that is reviewed includes minutes of meetings, logs, announcements, formal policy statements, letters and so on. The decision to gather and analyse documents or archival records should be linked to the research questions developed during the conceptual framework of the study.

Using documents often involves a specialised approach called ***content analysis***, which entails the systematic examination of forms of communication in order to identify patterns emerging from the data. Content analysis is a method for gathering and analysing the content of text. The content refers to words, meanings, pictures, symbols, ideas, themes or any message that can be communicated. The text is anything written, visual or spoken that serves as a medium for communication. It includes books, newspaper or magazine articles, advertisements, speeches, official documents, films or videotapes, musical lyrics, photographs, articles of clothing, or works of art. In content analysis, a researcher uses systematic recording procedures to produce a description of the symbolic content in a text. Content analysis allows researchers to reveal the content (messages, meanings, symbols) in a source of communication (book, article, video). With content analysis, a researcher can compare content across many texts and analyse it with quantitative techniques (figures, charts, tables) as well as qualitative ones.

Content analysis can also be used to reveal aspects of the text content that are usually difficult to see. By examining the presence or repetition of words and phrases in the texts, the researcher can make inferences about the open and hidden assumptions of the writer, the audience for which the piece is written, the culture and time in which the text is embedded, and the *discourse* (mode of verbal and written communication) that informs the actors' perspectives.

One of the strengths of this method is that documents usually provide a source of data that is available in a form that can be verified by others. In addition, there is an abundance of information that is contained in documents. Depending on the nature of the document, most researchers will find access relatively easy and inexpensive. The main weakness of the method is that a certain document may not be a credible source of information, so it may be necessary to check the procedures used to produce the original data.

NARRATIVES AND LIFE HISTORIES

Narrative analysis is a research method based on the idea of life as narrative (story), which seeks to reveal the way people construct life narratives around specific experiences, such as illness or political struggle. The emphasis of narratives is on people's life stories. It is interested in studying the ways people experience the world. It tries to understand groups, communities and contexts through the individuals' lived experiences. The researcher explores the story told by participants and then writes a narrative of the experience. The story usually follows a chronological order and sequence of events. Events are presented as unique, unpredictable and contingent.

Narration may take various forms. Field notes, interviews, journals, letters, autobiographies and orally told stories are all methods of narrative inquiry. This makes it colourful, interesting and entertaining to read. There may be more than one narrator, in which case we get the story from more than one point of view. A book portraying a family history for example, may have one section narrated by a parent, a second by a child, a third by a social worker and a fourth by friends of the family. The use of more than one narrator shows the subjectivity of experience and the fact that the same event can have different meanings for different people.

The research is a collaborative document, a story constructed out of the intersection of the lives of participants. In this effort there is recognition that the researcher is actively constructing the narrators' reality, with their collaboration, rather than merely recording it. It requires intense active listening by the researcher. It may be time consuming and require specialised training. A strong advantage of this method is that it draws out the voice of the narrator without imposing the researcher's framework and interpretation. A problem with narratives, like all data, is that they depend on participants' accounts of events. The researcher sees only what the narrators allow him or her to see. Sometimes the individual may not recall all details of the events and may fill in the gaps through inferences and reinterpretation.

One type of narrative, life history research also referred to as the biographical method, can be considered a full-length account of a person's life expressed in his or her own words. Typically, the life history will be gathered over a prolonged period of time with guidance by the researcher. This method is concerned with the subjective reality of the individual. Life history research offers a framework through which the meaning of human experience is revealed in personal *accounts*. It gives the researcher access to the ways in which individuals create and portray the social world in which they live. An understanding of a culture emerges through the history of one person's development or life within it. Apart from intimately entering the individual's subjective reality, the life history method is appropriate for documenting the confusions, ambiguities and contradictions that characterise our daily lives, but within an overall narrative framework.

An example of the life history method is Nelson Mandela's autobiography, *Long Walk to Freedom*, which is a 751-page account of the former president's life in his own words. The account was begun in secret in 1974, during his imprisonment on Robben Island, and finalised after his release in 1990. The book recreates the various experiences that shaped and defined Mr Mandela's growth and allows the reader to gain an understanding of how he viewed the social world he lived in. We are taken from his childhood experiences in Qunu village in the district of Umtata to his experiences of the apartheid system as a young man in Johannesburg, all the way through to his imprisonment on Robben Island and his release almost three decades later. It is a holistic description of the significant events and experiences in Mandela's life that is told in a way that captures his own feelings, views and perspectives.

Data can be generated from interviews with the subject as well as friends, family, colleagues, opponents and other relevant individuals. Other sources include personal documents such as letters, journals and diaries, as well as official documents. The vast amount of data collected in a life history should be channelled to some extent before progressing with analysis. Apart from arranging the material in chronological order, the data can be also be organised and presented according to the dimensions of the person's life, as well as the main turning points in that life.

One *advantage* of the life history method is its ability to provide specific information about events and customs of the past, showing how the individual interacts with the culture, studying cultural changes that have occurred over time, and gaining an insider's perspective of a culture. One of the major *problems* with the method is the absence of accepted principles for selecting participants. Life history research does not provide representative cases and may thus produce findings that are not typical. However, it should be recognised that, in general, the concern for context tends to outweigh the concern for findings that can be generalised.

Life History: Nelson Mandela's Long Walk to Freedom

"I was not born with a hunger to be free. I was born free – free in every way that I could know. Free to run in the fields near my mother's hut, free to swim in the clear stream that ran through my village, free to roast mielies under the stars and ride the broad backs of slow-moving bulls. As long as they obeyed my father by the laws abided by the customs of my tribe, I was not troubled by the laws of man or God.

It was only when I began to learn that my boyhood freedom was an illusion, when I discovered as a young man that my freedom had already been taken from me, that I began to hunger for it. At first, as a student, I wanted freedom only for myself, the transitory freedoms of being able to stay out at night, read what I pleased and go where I chose. Later, as a young man in Johannesburg, I yearned for the basic and honourable freedoms of achieving my potential, of earning my keep, of marrying and having a family – the freedom not to be obstructed in a lawful life.

But then I slowly saw that not only was I not free, but my brothers and sisters were not free. I saw that it was not just my freedom that was curtailed, but the freedom of everyone who looked like I did. This is when I joined the African National Congress, and that is when the hunger for my own freedom became the greater hunger for the freedom of my people. It was this desire for the freedom of my people to live their lives with dignity and self-respect that animated my life, that transformed a frightened young man into a bold one, that drove a law-abiding attorney to become a criminal, that turned a family-loving husband into a man without a home, that forced a life-loving man to live like a monk. I am not more virtuous or self-sacrificing than the next man, but I found that I could not even enjoy the poor and limited freedoms I was allowed when I knew my people were not free. Freedom is indivisible; the chains on any one of my people were the chains on all of them, the chains on all of my people were the chains on me.

It was during those long and lonely years that my hunger for the freedom of my own people became a hunger for the freedom of all people, white and black. I knew as well as I knew anything that the oppressor must be liberated just as surely as the oppressed. A man who takes away another man's freedom is prisoner of hatred, he is locked behind bars of prejudice and narrow-mindedness. I am not truly free if I am taking away someone else's freedom, just as surely as I am not free when my freedom is taken from me. The oppressed and the oppressor alike are robbed of their humanity.

When I walked out of prison, that was my mission, to liberate the oppressed and the oppressor both. Some say that has now been achieved. But I know that is not the case. The truth is that we are not yet free; we have merely achieved the freedom to be free, the right not to be oppressed. We have not taken the final step of the journey, but the first step on a longer and even more difficult road. For to be free is not merely to cast off one's chains, but to live in a way that respects and enhances the freedom of others. The true test of our devotion to freedom is just beginning.

I have walked that long road to freedom. I have tried not to falter; I have made missteps along the way. But I have discovered the secret that after climbing a great hill, one only finds that there are many more hills to climb. I have taken a moment here to rest, to steal a view of the glorious vista that surrounds me, to look back on the distance I have come. But I can rest only for a moment, for with freedom come responsibilities, and I dare not linger, for my walk is not yet ended."

Source: Mandela, N.R. (1995) Long Walk to Freedom: The Autobiography of Nelson Mandela. London: Abacus, pp.750-51

VISUAL METHODS

Sociologists and anthropologists tend to use film, video and photography as a way of recording and documenting the social life of the group under study. Such visual methods are becoming increasingly important research tools. Films can provide visual records of passing natural events and can be used as permanent resources. Research filming is a powerful way of studying past events, and it has the ability to capture events with an apparent objectivity, although always from the perspective of the filmmaker. Since a wealth of visual material emerges from natural events, some form of selection is used, affected by the researcher's interests, concerns and biases. This is not a problem in itself, if the consumers of such products are aware of the selection criteria employed in identifying the material to be included in the study.

Example: Documenting the experiences and social worlds of SA's youth

In 1992, a group of 20 seven-year-old South African children were selected for a documentary called "7 Up South Africa". The children revealed intimate details of their lives and searing honesty about their situations. Seven years later, in 1999, a new documentary "14 Up South Africa" was produced. The same children, now all adolescents, were tracked down and re-interviewed. Again, their experiences were filmed and recorded, the emphasis being on how their lives have changed relative to the context of political and social changes that occurred in South Africa in the intervening period. The lives of all these children have changed, for better or worse, and each child offers us a view into a family, a community, and ultimately, a society in flux. They tell us much about where we have come from and where we are going. They are vivid, vital and dynamic: ordinary children in an extraordinary world. This process of recording the real experiences of 20 South Africans as they chart the journey of their lives is to be repeated every seven years. The idea began in Britain almost 40 years ago, and the same form of research filming has been initiated in Russia and America.

On the positive side, film is a helpful tool in discovering and validating other types of evidence, since it records non-verbal communication such as facial expressions or emotions. It can also preserve activity and change in its original form, which allows interpretations of information to be validated by other researchers. It also assists in overcoming the limitations of the human eye in picking up subtle nuances. On the negative side, visual methods are limited by the identity of the observer and possible bias by the photographer. In addition, film is very expensive and requires special expertise on the part of the researcher.

PARTICIPATORY ACTION RESEARCH (PAR)

Participatory action research emerged in the 1970s in Latin America and other developing countries as a contribution to practice and struggle for social justice. Its focus is on research methodologies committed to empowering the people who are being studied. This approach is widely applied to interventions at grassroots level, especially in poor, rural locations. It aims to make development more responsive to the needs and views of the intended beneficiaries.

What are the main principles of this approach? The central ideas behind the participatory action approach are participatory involvement, action and change, reciprocal encounters and dialogue. There is also a strong emphasis on the *political* dimension of social sciences research, especially with regard to the power sharing between the researcher and the research subjects, identifying with the poor and the oppressed, and acknowledging the political nature and impact of research.

Perhaps the most important feature of this paradigm is that it active involvement of research subjects in all aspects of the research process. They may help decide the purpose of the research, set the agenda, plan the design of the project, participate in the data gathering and analysis, generate solutions to problems, and control the use of outcomes. There are different degrees of participation, ranging from extreme of 'participant control', where participants are entirely in charge of the whole research process, to lesser forms of participation such as 'consultation' and 'partnership'. PAR has an expectation that the researcher will attempt to promote participation during the research process, though its extent may vary with the specific goals and circumstances of the research project.

In this arrangement the researcher is considered a '*change agent'*, and the research subjects are seen as co-researchers or research '*participants'*. Thus PAR seeks to change the subject-object relationship characteristic of social research into a new subject-subject relationship. Because of its concern with participation, participatory action research tends to place special value on *local* or *indigenous knowledge*, which can be understood to mean the common sense, wisdom and expertise of the participants. This is in contrast to the significance placed upon the technical expertise and knowledge of the researcher in conventional research. This allows for the inclusion and more faithful representation of the participants' situation and context.

Another characteristic of PAR is that it is designed to lead to practical, social actions and change. It is concerned with the benefit of the research for the participants, the underlying assumption being that the existing situation needs to change. As a result, PAR is often aimed at finding solutions to practical or concrete problems. PAR is not an end in itself, but is instead a means towards action and social change. *Knowledge is produced for action*. The action involved should always be aimed at serving the interests of the participants.

Last, *empowerment* is a crucial goal of participatory action research. This implies that the poor and oppressed acquire power through research. PAR could is primarily an approach for empowering participants and only secondarily as a research methodology. Since PAR promotes a participatory approach, it is a particularly relevant tool for South African researchers. This is in recognition of the fact that many people live in impoverished conditions, and also because post-apartheid development efforts need to accommodate the needs of people in different locations and empower the poor and dispossessed to be able to effect meaningful change.

Example: The South African Participatory Poverty Appraisal (PPA)

In 1995/6, a PPA was undertaken in South Africa. It followed closely on the heels of a national quantitative poverty assessment, and was designed to be a participatory investigation into poverty. The main purpose of the PPA was to provide a fuller and more integrated understanding of poverty from the perspective of the poor and to fill the gaps that the quantitative study could not easily explain. Participation and stakeholder involvement was built into every stage of the research process (design, methodology, management, facilitation and synthesis).

The PPA was facilitated by a development consultancy. An initial consultative workshop was held to begin the process of designing and implementing the study. Over 150 organisations and individuals – NGOs, CBOs, academics and development workers – were contacted to take part in the PPA. Ultimately 14 organisations were selected to do research for the PPA. Fieldwork took place between June and November 1995. Of the participating research teams, more than half (eight) used participatory rural appraisal (PRA) with the others using mainly in-depth interviewing.

Source: Attwood and May, "Kicking Down Doors and Lighting Fires: the South African PPA", in Whose Voice? Participatory Research and Policy Change, edited by J Holland and J Blackburn (London: Intermediate Technology Publications, 1998).

PAR uses a range of data-gathering methods adjusted to each specific situation, in line with what participants believe to be relevant to achieve their objectives. Qualitative methods are favoured because they facilitate in-depth, rich understanding of the setting, focus on the participants' experience of their situation, and are consistent with a focus on local knowledge. Feedback and diffusion of research findings to the participants and their communities is an important component, as it serves to verify and validate data and makes the research more credible.

ASSESSING QUALITATIVE METHODOLOGY

In this section the focus will be on assessing the relative strengths and weaknesses of the main qualitative methods that were discussed earlier.

IN-DEPTH INTERVIEWING

Strengths:

It is a useful way for collecting a large amount of data. Respondents are given substantial freedom to express their opinions concerning important issues. It is particularly good at producing rich and deeply textured data, which deal with topics in detail.

The interviewer has the opportunity to clarify ambiguous issues and cases of inconsistencies or to probe when insufficient information is provided. The interviewer is also able to pose additional questions to follow up on issues, which perhaps had not been anticipated and therefore not included in the questionnaire.

Combined with observation, interviews allow the researcher to grasp the meanings people attach to their everyday activities. It can be a rewarding experience. People enjoy the rare chance to talk about their ideas at length to a person whose purpose is to listen and note their ideas without being critical.

Weaknesses:

Interviews involve personal interaction and cooperation is essential. Interviewees may not be willing or comfortable sharing everything with the researcher. The researcher may not properly comprehend responses to questions or elements of the conversation.

The interviewer may not ask questions that evoke long narratives from participants because of a lack of expertise or lack of familiarity with local language or because of lack of skill.

Analysis of data can be difficult and time consuming. Transcribing and coding interview data is a major task for the interviews. Also, data tend to be less standardised.

FOCUS GROUPS

Strengths:

Focus groups produce a large amount of information far more quickly and at less cost than individual interviews. Since the questioning is flexible, you may discover attitudes and opinions that might not be revealed in one-on-one interviews. Focus group discussions are valuable as a tool for gathering preliminary information and attitudes about sensitive topics. They may stimulate contributions from interviewees who might otherwise be reluctant to contribute.

If used to explore relatively simple issues, it can be easily managed by people not trained in qualitative research methods.

Focus groups can offer insights into how a group thinks about an issue, about the range of opinions and ideas and the inconsistencies and variation that exist in a particular community in terms of beliefs, experiences and practices.

Weaknesses:
Results cannot usually be used to make statements about the wider community.

Participants often agree with responses from fellow group members because of peer pressure, and therefore caution must be exercised in interpreting the results.

A moderator that is not well trained can easily force the participants into answering questions in a certain way. Participants may be reluctant to disclose thoughts on sensitive issues.

They have limited value in exploring complex beliefs of individuals, and as a result, in-depth interviews are a more appropriate method for this purpose.

They can paint a picture of what is socially acceptable in a community rather than what is really taking place or believed. This problem can be limited by careful participant selection and good moderating skills.

PARTICIPANT OBSERVATION

Strengths:
Participant observation uses the researcher as the main tool of research and therefore requires little by way of technical support.

It provides insights into social processes as they unfold and is suited to dealing with complex realities**.** The researcher observes events in natural settings, as they normally happen, rather than as they happen under artificially created conditions.

With participant observation, the emphasis is on holistic understanding, in which the individuals studied are examined in terms of their relationships.

Weaknesses:
The process of observation is not straightforward. The researcher's perception might be influenced by personal factors and thus the data collected may not be reliable. Participant observation may be dangerous. Sometimes the researcher may make contact with groups whose activities are on the margins or outside the law for example, drug lords, sex workers etc.

One of the most persistent and most difficult issues that the researcher faces is the problem of ethics. Researchers may be faced with the dilemma of whether or not to participate in activities that are illegal, or activities considered immoral or unethical.

There are other ethical concerns that come with any fieldwork study: For example, should the researchers conceal their identity? Should they reveal themselves? What are the costs and benefits of each option?

Participant observation can be very demanding, requiring a great deal of personal commitment of time and energy.

6. QUALITATIVE DATA ANALYSIS

Once the data have been collected, the researcher is faced with the daunting task of making sense of it all. In this section you will be exposed to some of the methods for organising, interpreting, and drawing and verifying conclusions from qualitative data.

Data analysis is the process of bringing order, structure and meaning to the mass of collected data. It is often a messy, ambiguous, time-consuming, creative and fascinating process. While, in the quantitative tradition, researchers rely on a standardised set of techniques for data analysis, qualitative data analysis is less uniform. The wide variety in approaches to qualitative research is equalled by the many approaches to data analysis. In addition, while quantitative researchers begin analysing their data once the data has been collected and captured in numeric form, in qualitative research there is no clearly defined point at which data collection ends and analysis begins. Instead, data analysis may begin early in the research process and data collection and analysis go hand in hand, allowing for the emergence of theory grounded in empirical data. Analysis does not represent a final stage of work after data collection, and there is a gradual fading in and out effect, so that at first you are mainly collecting data and towards the end you are mostly analysing what has been collected.

The three principal methods of qualitative data collection discussed earlier (interviews, observation, and documents) produce three kinds of data. These are respectively quotations, descriptions, and excerpts of documents. Resulting in one product: Narrative description (sometimes charts and diagrams too).

STEPS IN DATA ANALYSIS

Data analysis involves reading through your data repeatedly and engaging in activities of breaking the data down (identifying themes and categories) and building it up again in novel ways (elaborating and interpreting). In reality, qualitative analysis rarely proceeds in an orderly manner. There are generally certain steps that appear to be followed.

Step 1: Organising the data. By the time the data collection process has been completed, your analysis should be well underway. Data gathering involves developing ideas and theories about the phenomenon being studied, so that by the time you arrive at data analysis you should already have a basic understanding of the meaning of your data. The suggested approaches to qualitative data analysis emphasise the importance of ongoing analysis during data collection. Field notes should first be converted into what is called a *write-up*, which is a version of the notes that is

intelligible to another reader. It usually involves removing private abbreviations, making the text legible, making corrections and incorporating reflections and other additions. Tape recordings need to be processed shortly after they have been made, either by means of a full *transcription* or by making *notes and a selection of excerpts.*

What needs to happen in the data analysis phase is for you to immerse yourself in the material again, this time with texts (field notes, interview transcripts) rather than with lived reality. The texts need to be read numerous times and notes should be made, diagrams drawn and the text brainstormed. Through this process, a reasonably good idea of what can be found where, as well as the interpretations supported by and missing in the data, can be formed.

Step 2: Identifying themes. Through a process of induction you seek to derive general rules on the basis of specific instances. You look at your material and try to establish what the organising principles are which naturally underlie the material, but which at the same time have a bearing on the original research questions. There are no rules about what types of themes and categories is the best, nor is there one specific way of organising raw data. Some pointers include:

- Try to use the language of the informants rather than abstract theoretical language
- Try and move beyond merely summarising content. Think in terms of processes, functions, tensions and contradictions
- Try to find an optimal level of complexity – identifying only one or two themes is probably insufficient for doing anything interesting with the data, but if you have ten to fifteen themes you should probably try to rearrange them into a smaller number of main themes
- Do not settle for one theme, theory or pattern too quickly. Play around with the data and try different themes
- Do not lose focus and remember what your study is about

Step 3: Coding. While being busy with developing themes, you should also be able to code your data. This involves marking different sections of the data as being instances of or relevant to one or more of your themes. They are typically related to research questions, concepts and theories. You might code a phrase, a line, a sentence or a paragraph, and identify textual bits by using a theory that addresses the themes under consideration. There are different ways of doing this:

- Using coloured marker pens to highlight pieces of text, so that, for example, in a study on AIDS prevention, all text relating to condom use is marked in yellow
- Making several photocopies of each page of data and then cutting them into smaller sections that are grouped together. A more efficient method is to use the cut and paste function in a word processor to move bits of text around
- Use one of a variety of software programmes that aid qualitative analysis, such as NUDIST, Ethnograph, Nvivo.

Coding breaks down the body of data into meaningful pieces, with the aim of clustering the bits of coded material together under the code heading and further analysing them. In practice, steps two and three (identifying themes and coding) blend into each other, because often themes develop sub-themes which require analysis and, because of this, codes should never be viewed as final and unchanging.

Memoing is a process for recording the thoughts and ideas of the researcher as they evolve throughout the study. You might think of memoing as extensive marginal notes and comments. Again, early in the process these memos tend to be very open while later on they tend to focus increasingly on the core concepts. Memos contain the researcher's reflections on and thinking about the data and coding. Researchers add to the memo as they progress through the data collection process. Memos may help to generate hypotheses and to develop new themes or coding systems. It is possible to modify memos as the enquiry develops.

Step 4: Elaboration. Introducing themes and coding breaks up the linear sequence of the raw data in that events or remarks that were far away from each other are now brought close together, giving a fresh perspective on the data and allowing careful comparison of sections of text that appear to belong together. At this stage, it is likely that extracts that you grouped together under a single theme differ in many ways, and that all sorts of sub-issues and themes surface. Exploring themes more closely in this way is called elaboration, the purpose being to capture the finer nuances and meanings that have not been captured by your original coding system. The idea is to keep playing around with your data until you produce a good account of what is going on in your data.

Step 5: Interpretation and checking. The final step is when you put together your interpretation, which is a *written account* of the phenomenon you are studying, most probably using the thematic categories from your analysis as sub-headings. Check your interpretation for weak points, such as contradictions, instances of over-interpretation, and prejudices, in addition to reflecting and documenting your own role in collecting the data and developing the interpretation.

Interview Transcripts: An example

Line of the transcript		Code for the content	Notes
46 47 48	Interviewer: How serious a problem is HIV/AIDS for women in this area?		
49 50 51 52	Thembi: It is very serious because they stay at home and wait for their husbands to give it to Them		Thembi is looking frustrated.
53 54 55	Interviewer: Do women simply accept it from their husbands?		
56 57 58 59 60 61 62 63	Thembi: There is nothing the woman can do. If she tells him to use a condom. He gets angry and hits her. Women have to do with what the man says!! Interviewer: Is there anything women can do to protect themselves?	08	Thembi says later that her partner refuses to wear a condom
64 65 66 67 68	Thembi: Some women are able to refuse sex. They don't depend on men. However, for some women this is not an option. She is afraid that her husband will leave her if she refuses him sex.	15 08	

This extract was adapted from an in-depth interview with sexually active women in KwaZulu-Natal. The names have been changed and codes and notes included for illustrative purposes. Notice how numeric codes representing certain themes have been introduced (the code 8 could represent reasons why women are not using condoms, the code 15 may indicate independence, etc). Also, the notes are an example of memos. They contain the thoughts, ideas and observation of the researcher.

Analysis on completion of data collection

The drawing of conclusions and their verification is the major remaining analytic task. Some of this can be done while data collection is in progress, but generally it is a task performed after the data collection phase. The major emphasis of the analytic techniques recommended for use during data collection was data reduction that is, making the data volume manageable through summary and coding. The emphasis in this phase is on *display* that is, finding methods that present the data in such a form that valid conclusions could be drawn in a clear and easily presentable manner.

Drawing conclusions from qualitative data

Displays, summary tables and the like are useful strategies for making sense of qualitative data, but some specific tactics can be used in the process to help to draw conclusions:

- Counting: measuring the frequency of occurrence of categories
- Patterning: noting recurring patterns or themes
- Clustering: grouping objects, persons, activities, settings, etc. with similar characteristics
- Factoring: grouping variables into a smaller number of hypothetical factors
- Relating variables: discovering relationships between two or more variables
- Building of causal networks: developing chains or webs of linkages between variables
- Relating findings to general theoretical frameworks: finding general propositions that explain particular findings.

Irrespective of whether your study produces quantitative or qualitative data, the major task is to find answers to your research questions. To arrive at valid answers, the analysis has to treat the evidence fairly and without bias, and the conclusions must be compelling, especially in ruling out alternative interpretations. In recent years, serious attention has been given to achieving a degree of rigour in the analysis of qualitative data that is commonly expected in the analysis of quantitative data. However, there remain those that view qualitative data analysis more as an art than a science, and therefore believe that intuitive approaches are sufficient.

Computer programmes

Traditionally qualitative researchers relied on notes, memos and files. Increasingly, qualitative researchers have moved towards computer analysis of their data. A number of software packages are available to analyse qualitative data. Some of these packages are used to search for particular words and phrases. More sophisticated packages allow researchers to carry out complex forms of analysis and to code field notes.

Writing a report

A critical component of research is communicating the findings to others. The most common means of disseminating findings is the research report, which is a written document, or presentation based on a written document. Compared to quantitative research, it is more difficult to report on qualitative research. It has fewer rules and less structure. Nevertheless, the purpose

of the qualitative research report is the same, namely to communicate the research process and findings to others. Researchers balance the presentation of data and analysis, since they wish to avoid a problem known as *error of segregation*, where there is excessive separation of the data from analysis to the extent that the reader cannot see the connections between the two. In terms of presenting evidence, the qualitative researcher frequently suffers from excess of data. Since she or he cannot directly share observations or conversations with readers due to the sheer volume of field notes collected, only select quotes are included in the report with the rest of the data being indirectly conveyed or referred to.

Qualitative researchers rely on a range of devices for organising evidence and analysis. The most commonly used of these is to organise the report in the form of *themes*, with others including a arrangement based on natural history (presenting events as the researcher discovers them), chronological, or a zoom lens approach (begin broadly, then gradually focus on a specific topic). Reports may contain transcripts of tape recordings, maps, photographs or charts illustrating particular categories. They supplement the discussion and are placed near the discussion they complement. Care should be exercised in protecting the privacy of those being studied, such as by changing names and precise locations.

Example: Writing Up Results

In a recent journal article, University of Natal academic Pranitha Maharaj documented some of the obstacles women in KwaZulu-Natal face in negotiating condom use with their partners. Extracts from the transcripts are used extensively to illustrate particular findings and interpretations. Below is an example from the article:

Negotiating Condom Use

Women who request condom use are frequently viewed in a negative light. They are usually perceived as promiscuous. As one respondent indicated:

If my girlfriend gave me a condom I cannot accept it. This means she is a prostitute (Rural Male)

Women who suggest condom use are often seen as sexually available or ready for sex. Other studies have found that such beliefs have been found to produce a strong negative attitude to past condom use and to current condom use (Edem and Harvey, 1993).

Source: Maharaj P (2001) Male attitudes to Family Planning in the era of HIV/AIDS. Journal of Southern Africa Studies. 27(2): 245-257.

Exercise:

- Break into groups
- Read through the extract from the in-depth interview provided below.
- Discuss among yourselves how you would go about analysing the data.
- Identify some of the common themes in the interview.
- Explain how you would incorporate the findings into a research report.

Postgraduate Student Study on Aspects of Crime in the Park Kloof Area

What is the current level of crime in Manor Gardens?

It is quite high.

High…compared to another area of its size or income level?

It depends on the crime itself. Like, obviously armed robbery is low but housebreaking is high. It varies.

Would you say that the level of crime has increased, stayed the same or decreased in the last year?

I would say it is increasing.

What would you attribute this to?
Okay, for Manor Gardens, in particular you take into account.. we have an informal settlement that's quite close to Manor Gardens. Also, the other factor if you take that community…it's possible that they are not aware… or they are making the crime possible in the sense that they are not being cautious.

So what are the most common crime in Manor Garden?

Okay, housebreaking.. for the entire year that you wanted, we had sixty seven, so that's very high. The other crime is theft of motor vehicles. We had forty six thefts of motor vehicles and eighteen attempted thefts of motor vehicles.

Have you found that any people in particular are more vulnerable to crime in Manor Gardens?

Not necessarily… it just depends.

Have you found any ways in which children, in particular, are affected by crime?

To my knowledge, no. Basically the crime that we have so far is basically to do with property… and that is affecting children.

I must add that we had a couple of cases where children were at home at the time when the incidents occurred.

Have you found that the perpetrators of the crimes in Manor Gardens have come from specific areas?

It is possible that some of them come from Cato Crest Informal Settlement. There is also the possibility that they come from areas like Umlazi, Chesterville and Inanda.

How would you describe the relationship between the police and the community of Manor Gardens?

Ja, we have a good relationship.

There is a community policing forum?

Yes, we have one. There was a neighbourhood watch but I think that it has disintegrated. We are trying to get it back on track but you know we have a problem. People are interested in a neighbourhood watch as soon as something happens. However, when things are going smoothly, they lose interest. And unfortunately, a neighbourhood watch must be run and administered by the community itself you know.. it's not a police project. It's a community project and if they lose interest there's not much we can do.

We have done some surveys in the area, just asking people what they think about crime. One of the things people felt was that there wasn't enough of a visible police presence in the area. They thought more police patrols would be necessary to reduce crime. Can you comment?

I agree. I am sure that police patrols would reduce crime. It is just not possible with the manpower and equipment shortages that we have. Sometimes we have vehicles available but we don't have people to drive the vehicles and do the patrols. It makes it hard.

Also, we at Mayville cover a wide area.

Exactly, what areas are in your jurisdiction?

This is the area. It starts from Francois Road in the south and it goes right up to Umgeni Road and Quarry Road in the north, so that's a very big area you know. When we patrol Manor

Gardens these guys have their informants and they know this area. When we patrol, they go back and know the guys on that side. So, you know, it's a big area… it's very spaced out unfortunately… it's not a cluster in a round circle…so that's the problem we have. And then the east boundary is Ridge Road and the west boundary is Brickfield Road. And then we also cover the whole freeway up to the Spaghetti Junction for accidents etcetera.

Another thing people seemed to feel was important to reduce was to increase awareness about crime and to make people more security conscious. Are the police helping in this process of making people more aware?

Well, I can tell you that currently I have noticed that there is a programme on television where they make people aware of crime and how to crime themselves and how to have extra precautions. That is sponsored by I think the AA and MTN. I see it every evening. It is a five minute insert. There is also aprogramme on East Coast Radio at nine thirty in the morning where they discuss crime and how you can safeguard against it. We also have a community police forum which used to be held… we held plenary meeting every month, but because of disinterest we had to change it to every three months. So we have that every three months. The community is welcome to attend and they can hear what's going on in the area, and how they can get involved in trying to help us do this new concept of community policing. We also have planned a crime awareness day for the 31 July. This is unfortunately something which we can only schedule once a year because of the demographic and trying to get everything together. So that's what we from the Mayville police station are trying to do as a whole to get the community to draw them to one central spot where we can make them aware of certain things, shows them how the police operate, what units are available to them and just make them generally aware of how to safeguard themselves.

What constraints does this station in particular face in trying to carry out effective policing?

Manpower shortage

Can you give me some idea of how short you are?

Fifty percent under. That was a study done last year. They came and did a study here at the police station. You know, they calculate… they take the population, your square meterage area and they calculate from there. And we are supposed to be a hundred and seventy people manning this station to make it effective and we are currently…that includes the labourers, okay, which…they don't really count…we are eighty six, so you know, we are currently running at half strength. If we get the necessary manpower we will need more vehicles.

How short of vehicles would you say you are?

Well, I would say at the moment we are not very short to meet the needs of the people working at this station. If all our vehicles are in working order I think we have enough vehicles. But the thing is that they are not always working. Sometimes some of the vehicles are at the garage. We can manage if all the vehicles are in working order. You know there was one day when we had only three vehicles on the whole police station, that included the patrol vehicles…three vehicles running. I mean all the other vehicles were in for repairs. And that's the problem we have… you know these vehicles are really taking strain, they are used twenty hours a day, so you must know, you know, they take a lot of strain…and it's high speed chases.

Just in general terms what do you think needs to be done for crime to be reduced in the country?

The justice system needs to be jacked up. They have to build more prisons and they have to double the police force.

So for the police, you do think it is a matter of numbers, not…?

Absolutely… you know when I read statistics for other countries I have found that they have one policeman for every twenty members of the public. Here we have one policeman for every twenty thousand people in the country. I mean its crazy. How can you police? You can't police a country. We are busy trying to transform. There is a lot of changes and people are scared of change. They are very negative towards change, so we are facing an upward battle. It is hard. It is really hard. And because of the old stigma, you know, attached to the police… it makes it difficult, because we are trying to change perceptions. We are not those monsters they thought of us in the past. We are trying to change that perception.

How would you say the process is going? Do you think you are changing people's perceptions of the police?

Ja, I think so. It is slow but I think it is changing. I must say, change is a slow process… very, very slow. But I think in the end, if we continue, we'll get there. We are really trying to change their perceptions of the police.

Do you have any other comments?

No.

Nothing.

Thank you

7. COMBINING QUALITATIVE METHODOLOGIES

TRIANGULATION: MIXING OF METHODS

In previous sections we have tended to talk independently about qualitative research methods and about the differences between qualitative and the quantitative research in general. The reality is that there exists a strong and distinct tradition that encourages the use of multiple or mixed methods in order to overcome the limitations or weaknesses inherent in a specific approach. This brings us to the concept of *triangulation*, a term that originates with land surveyors and refers to measuring the distance between objects by viewing them from different angles. In research methods, triangulation has come to refer to the use of multiple methods. It is based on the idea that the qualitative and quantitative methods should be seen as complementary rather than as mutually exclusive or rivals. It also refers to the combination of methodologies that are used in studying the same phenomenon, the aim being to improve the validity of one's findings.

Four types of triangulation have generally been identified in the literature. The first of these is known as *data triangulation*. This relates to the advocacy of a range of data sources in the context of a project or study. Examples of this could include comparing data from early and later phases of fieldwork, or from different cases or settings. It could also entail comparing, for instance, observational data with data from interviews.

The second type is *investigator triangulation*, where several different researchers or evaluators are used in a project. This can assist in drawing attention to previously unnoticed researcher effects (the impact of a particular researcher‘s biases, style and approach on the research process). The notion of investigator triangulation could be extended to *interdisciplinary triangulation*, where researchers from different disciplines are used to verify findings. A good example would be the inclusion of medical sociologists and demographers, epidemiologists, and economists in a study looking at the socio-cultural factors that affect the transmission or spread of HIV.

The third type is *theory triangulation*, where multiple theoretical perspectives are used to interpret a single set of data. Finally, there is *methodological triangulation*, where multiple methods are used to study a single problem, looking for convergent evidence from different sources, such as participant observation, survey and documentary sources. An example is Geraldine Fraser's PhD research, to which you were introduced the introductory session, which relies on data from a survey and participant observation.

Is it possible to combine qualitative and quantitative methods to benefit from the strengths of each and avoid the weaknesses of either? While there is a general acceptance of the obvious complementarities between the qualitative and quantitative approaches, tensions are still apparent due to loss of information and effectiveness by forcing a 'marriage' between

approaches. The danger is that this will result in a loss of precisely the features for which either of these approaches has been recognized as robust, capable of generating valid, reliable and illuminating results.

In light of this, another way of proceeding is what is referred to as 'sequential' as opposed to 'simultaneous' mixing of approaches. This means allowing each approach to do its best, untainted by the other, and then using the results to triangulate and to inform the next stage of design of each, rather than forcing a combination or mixing which might not be appropriate.

In view of the current trend towards combining the two methodological approaches, should an integration be forced at the design stage, or should each technique be allowed 'to do its best', leaving integration for a later stage? The evidence so far tends to suggest that the answer is in fact 'both'. On the one hand, as mentioned above, there is considerable support for *limited* movement of qualitative researchers towards the quantitative and quantitative researchers towards the qualitative. On the other hand, there are concerns about convergence of the two, which would result in an undifferentiated single bland approach. In response to these misgivings, a sequential approach to triangulation may be the most practical approach.

Example: A Sequential Approach to Quantitative and Qualitative Methods

In 1993, South Africa's first nationally representative, multi-purpose household survey, the Project for Statistics on Living Standards and Development (PSLSD), was launched. The survey was coordinated and managed by the Southern Africa Labour Development Research Unit (Saldru) based at UCT. The sample consisted of 9000 households in 360 clusters. The main purpose of the survey was to collect information about the living conditions of South Africans in order to provide policy makers with the data required for planning purposes. In 1998, the KwaZulu-Natal Income Dynamics Study (KIDS) re-surveyed those 1100 households from the PSLSD that were in KZN, using the same questions that were asked five years earlier. KIDS was developed to gain insight into the dynamics of poverty in South Africa. One part of the study classified households as non-poor (not poor in 1993 or 1998), transitorily poor (poor in one of the two years), or chronically poor (poor in both years). The definition of poverty was based on an expenditure poverty line, measuring whether households fall above or below a certain level of monthly expenditure.

In 2001, the Legacies of Inequality project was launched to revisit some of the households in the KIDS database that fall into the poverty categories above. Combining in-depth interviews, observation and PRA has provided new and exciting information about these households, by comparing and contrasting qualitative and quantitative findings to help us understand both aspects. In conclusion, this experiment with the *sequential* approach to triangulation has proven most effective and holds much promise for other project work in South Africa.

Source: B. Roberts, "Chronic and Transitory Poverty in South Africa; Evidence from KwaZulu-Natal", Journal of Poverty Studies, Vol.5, No.4, 2001.

The main barriers to mixing qualitative and quantitative methods appear to lie in the resistance of practitioners and reviewers to stepping outside the traditional boundaries of practice. The situation has undoubtedly improved in recent years, but practitioners in the two traditions still seem to inhabit unconnected worlds, with their own conferences and academic journals. The main point is that practitioners do not seem to talk to each other as much as they ought to, given the common objective of helping to develop sound strategies for research, action, interventions and policies.

KEY ISSUES IN RESEARCH DESIGN

RESEARCH PROBLEM AND QUESTIONS

Quantitative research usually begins with an idea (in the form of a hypothesis), which then, through measurement, generates data and, by deduction, allows a conclusion to be drawn. In contrast, *qualitative* research begins with an intention to explore a particular area, collects 'data' (observations and interviews), and generates ideas and hypotheses from these data largely through what is known as inductive reasoning.

The first critical step in qualitative research is the identification and formulation of a research problem that the study will address. An argument should be developed that links the research to larger, significant theoretical problems, social policy issues or practical concerns. The study needs to be framed so that it addresses a particular problem, which will help to determine the study's significance. The research problem is generally formulated as a *research question*. The initial questions for research often come from real-world observations, dilemmas, and questions that have emerged from personal ideas and experiences, theory and scholarly trends. Sometimes, the topic of study comes from existing theories and associated field research.

The questions that are initially developed are intimately related to the research problem and can be theoretical, focused on a particular population or class of individuals, or site-specific. Theoretical questions could include 'How does the social capital that a household has help them cope with the effects of natural disasters?' Questions focused on particular populations could included: 'What is the life of a street child like?' or 'what happens to children whose parents die of AIDS? How does this affect their long-term development?' Finally, site-specific questions could include: 'why is the LoveLife campaign working well in this area but not in others? What is special about the people? The context? The campaign design?'

Having decided on the research problem, the researcher needs to select an appropriate research design for the study. Since different designs are suited to different types of research questions, various combinations of methods and procedures may be used. The sampling, data collection and data analysis methods used by qualitative researchers for a project are determined by the nature of the research questions and the type of evidence that is needed to address the problem.

Qualitative research tends to involve research questions of an empirical nature, which means that they are 'real-life' problems instead of more abstract or theoretical questions. Developing the research questions involves specifying the research purpose. The three most common and useful purposes of research are exploration (*what*), description (*how*) and explanation (*why*).

Exploratory studies attempt to develop an initial, rough understanding of a certain phenomenon. Since they usually result in insight and understanding rather than detailed, accurate and replicable data, such studies often involve using in-depth interviews, the analysis of case studies and the use of informants. Descriptive studies aim to describe the characteristics of a population, situation or event. Many qualitative studies are descriptive in character since they are aimed primarily at providing rich description of a specific individual, social event, group, or company. Explanatory studies attempt to discover and report on relationships among different aspects of the phenomenon being studied. Most studies will have elements of more than just one of the three main purposes of research.

SAMPLE SIZE

How many cases or participants are sufficient for a qualitative research project? The experienced researcher will have a general sense of when the coverage of the principal issues is sufficiently comprehensive and in-depth. However, for those of us who have not had such exposure, let us consider in more detail how the experienced researcher is able to perceive when 'enough' material has been gathered. The most commonly applied notion is that of '*saturation*'. This marks the point at which one stops adding new material because such material is no longer challenging or contributing to the emerging interpretive understanding, when no new relevant information emerges, when category development is dense and rich, when relations among categories are well established and validated, and when there is a sense that the theoretical account is nearing a complete and adequate form. There may even be a point when new material is counter-productive. Not only does it not contribute further to the study, but it undermines conceptual clarity and threatens to throw the project into disarray.

For research proposals we are often required be more precise about sample size. The number of cases selected depends in part on the level of theoretical development in the field of study. Where a large body of theory is available, the researcher is usually expected to set specific research questions to verify or contest certain ideas. Under such circumstances, a small number of cases may be needed. However, if you plan a study around a relatively new or unexplored theme, your sample size may have to be substantially larger to ensure that the topic is adequately covered. Deciding on sample size also depends on the level of detail that the research method is likely to generate. For example, conducting in-depth interviews may yield several hours worth of material per respondent, enabling detailed accounts with a small number of cases. In contrast, semi-structured interviews on attitudes may require a larger sample size in order to gather sufficient detail. The available time and money will be crucial for deciding the issue, of course.

JUSTIFYING METHODS AND CONCLUSIONS

One of the major tasks of qualitative data analysis is to find answers to your research questions. To arrive at valid answers, the analysis has to treat the evidence fairly and without bias, and the conclusions must be compelling, especially in ruling out alternative interpretations. In recent years, serious attention has been given to achieving a degree of rigour in the analysis of qualitative data that is commonly expected in the analysis of quantitative data. In terms of judging how good the quality of a qualitative research project, reference is commonly made to what are known as the *trustworthiness criteria*. There are four basic criteria: credibility, transferability or generalisability, dependability, and confirmability.

Credibility: This refers to the accuracy of the description. Is the description plausible and recognised by those who experienced it? It addresses the issue of whether the respondents' views and the researcher's reconstruction and representation of them are compatible. Researchers can improve the credibility of qualitative data in a number of ways. It can be enhanced by prolonged time in the field, repeatedly observing and interacting with participants, as well as triangulating data sources, methods, data type, investigators, and theories.

Transferability: this refers to the extent to which the findings can be applied to other contexts, settings or respondents. The researcher needs to provide sufficient information in the research report on the case study so that readers can establish the degree of similarity between it and other cases to which the findings might be generalised or transferred. A lack of transferability is often viewed as a weakness of qualitative methods.

Dependability: This refers to the stability of the data and conditions over time. The study must provide the audience with evidence that if it were to be repeated with the same or similar respondents in the same or similar context, the findings would be similar. It reflects the reality that people's situations change and reality differs for people. The intention is to determine the extent to which another researcher with similar training and rapport with participants would make the same observations. **Confirmability:** The basic issue here is one of neutrality. This is concerned with the extent to which the data and interpretations are not merely figments of the researcher's imagination. It questions whether two independent researchers would agree about the meanings emerging from the data. The procedure useful for meeting this criterion is auditing, where the researcher leaves an adequate trail for the 'auditor' to determine whether the conclusions, interpretations and recommendations can be traced to their sources and are supported by the evidence. The researcher must explain how personal biases may have come into play and consider alternative explanations.

Being trustworthy therefore means that the qualitative researcher conducted his/her work fairly and ethically, and that the products represent as closely as possible the experiences of those being studied.

READING AND EVALUATING QUALITATIVE RESEARCH

There is a tendency for a finding or a result to be more readily and uncritically accepted as a fact if it is expressed in numbers than if it is not. As was mentioned in an earlier section, they aim to study things in their natural setting, attempting to make sense of, or interpret, phenomena in terms of the meanings people attach to them, and they use a holistic perspective which preserves the complexities of human behaviour. By its very nature, qualitative research is non-standard, unconfined, and dependent on the subjective experience of both the researcher and the researched. However, some ground rules for evaluating it may be developed. The list that follows draws on the previous sections about the research design process and consolidates it into a set of points that you can use as guideline for checking the worth of a research paper or report.

Did the paper describe an important problem addressed via a clearly formulated question? One of the first things you should look for in any research paper is a statement of why the research was done and what specific question it addressed. Qualitative papers are no exception to this rule: there is absolutely no value in interviewing or observing people just for the sake of it. If a paper cannot define its topic of research more specifically than "we decided to interview 20 street children", it does not inspire much confidence that the researchers knew what they were studying or why. However, if the paper begins with a statement like the one provided below, an immediate and rather significant difference is noticed:

> While the phenomenon of children and youth living on the streets is worldwide, it is a fairly recent problem for South Africa. While apartheid laws placed artificial constraints on urban migration, with the relaxation and abandonment of 'influx control' South Africa has seen a rapid rural migration to the urban areas. At the same time, there has been a dramatic increase in the number of children taking to the streets, especially in the Western Cape. Many appear to suffer from poor health, malnutrition, and violence, and get involved in activities that are unlawful to some degree, ranging from petty offences to more serious matters like glue-sniffing, prostitution, drug use, and violent crimes such as fighting among themselves. We decided to study 20 street children in Cape Town using in-depth interviews and observational methods, exploring the factors that forced them to leave home, as well as gaining an understanding of their experiences on the streets and their needs. The research is intended to help redesign government assistance, which has tended to be limited to short-term relief and institutionalisation, so that it more effectively addresses the long-term developmental needs of these children.

Was a qualitative approach appropriate? If the objective of the research was to explore, interpret, or obtain a deeper understanding of a particular social issue, qualitative methods were almost certainly the most appropriate ones to use. However, if the research aimed to achieve some other goal, such as determining the incidence of street children in Durban or the frequency of child-headed households (that is, children who are looking after other children because both their parents have died of AIDS or other illnesses) in South Africa, testing a cause and effect hypothesis (for example, testing whether poverty causes ill health), quantitative research methods may have been better suited to the research question.

How were the setting and the subjects selected? Quantitative research stresses the importance of selecting a random sample of subjects so that the results reflect the condition of the population from which that sample was drawn. In qualitative research, we are not interested in a typical or 'on average' view of a population. We want to gain an in-depth understanding of the experience of particular individuals or groups. We should therefore purposefully seek out individuals or groups who fit the bill. For example, if we wanted to study the experiences of child-headed households and their survival strategies (with a view to tailoring social services more closely to the needs of this group), we would be justified in going out of our way to find orphans who are heading households and who have had a range of different experiences – victimisation, alienation, government assistance – rather than a random sample of households or child-headed households.

What was the researcher's perspective, and has this been taken into account? It is important to recognise that there is no way of removing or adjusting for observer bias in qualitative research. This is especially true when participant observation is used, but it is also true for other forms of data collection and of data analysis. For example, if the research focuses on the experience of street children living in damp and overcrowded shelter in Johannesburg and the perceived effect of these surroundings on their health, the data produced by methods such as focus groups or semi-structured interviews are likely to be heavily affected by what the researchers or interviewer believe about this subject and by whether they are employed by the social work department of the local authority, or a child rights group. However, because such interviews are inevitably going to be conducted by someone with views and an ideological or cultural perspective, the most that can be required of the researchers is that they describe in detail where they are coming from so that the results can be properly interpreted.

What methods did the researcher use for collecting data, and are these described in sufficient detail? The methods section of a qualitative paper often cannot be written in a short form. It may have to be lengthy since it is telling a unique story without which the results cannot be interpreted. There are no precise rules about what details should be included in this section of the paper. You should simply ask yourself whether you have been given enough information about the methods used. If you have common sense you can assess whether these methods are sensible and adequate way of addressing the research question.

What methods did the researcher use to analyse the data—and what quality control measures were implemented? The data analysis section of a qualitative research paper is where sense can most easily be separated from nonsense. Having gathered a large pile of interview transcripts or field notes, it is simply not good enough to flick through the text looking for 'interesting quotes' that support a particular theory. Good qualitative researchers must find a way of analysing their data, and seek examples of cases that appear to contradict or challenge the theories derived from them. One way of doing this is by making use of content analysis.

Are the results credible, and if so, are they important? We cannot assess the credibility of qualitative results through the precision and accuracy of measuring devices, nor their significance via confidence intervals and similar statistical devices. It usually takes some plain common sense to determine whether the results are sensible and believable, and whether they matter in practice. One important aspect of the results section to check is whether the authors cite actual data. Claims such as "men in rural KwaDumisa generally did not favour the use of condoms during sexual intercourse" would be infinitely more credible if one or two verbatim quotes from the respondents were included to illustrate that they believed condoms interrupted sexual activity, caused discomfort or ruined the excitement of flesh-on-flesh contact.

What conclusions were drawn, and are they justified by the results? Quantitative research papers tend to separate the study's statistical results from the interpretation of those results (the discussion). The reader should be able to clearly distinguish between what the researchers *found,* from what they think it *means*. In qualitative research, such a distinction is often not possible since the results are fundamentally an interpretation of the data. It is therefore necessary to ask whether the interpretation placed on the data makes sense and is relatively untainted with a personal or cultural perspective. This can be a difficult because the language we use to describe things tends to ascribe meanings and motives that the subjects may not share. The conclusions of qualitative studies should be grounded in evidence – that is, they should flow from what the researchers found in the field. In deciding whether the conclusions of a qualitative study are valid, you should ask yourself, among other things, how well the analysis explained why people behaved the way they did, how understandable the explanation would be to a participant in the setting, and how well did the explanation supported what we already know.

Are the findings of the study transferable to other settings? One of the most widespread criticisms of qualitative research is that the findings of any qualitative study relate only to the limited setting in which they were obtained. In fact, this is not necessarily any truer of qualitative research than of quantitative research. You should be able to see that the use of a true *theoretical* sampling frame greatly increases the transferability of the results over a convenience sample.

8. POLICY AND ADVOCACY RESEARCH

RESEARCH FOR POLICY

In this session we will be concentrating on policy research. Policy research is vital for the organisational life of society. Before we outline some preliminary facts about policy research, it would be important to outline a few points about organisations.

At the most general level, organisations are created in order to coordinate human effort to achieve certain goals. Another way of saying the same thing would be: organisations are the 'means' or 'devices' through which we achieve our goals.

Through our work we encounter hundreds of organisations – they are everywhere. We can distinguish between formal and informal organisations. Formal organisations have constitutions, office-bearers, bank accounts, members or clients. Informal organisations rely on face-to-face communication, support systems, and unwritten rules. They presuppose solidarity between their members.

A common feature in all organisations is that they have been set up to achieve certain goals: for example we may encounter organisations whose sole purpose is religious devotion or organisations whose aim is to have a lot of fun and merriment.

The largest organisation in any society is the institution of the state or government. Like all organisations governments coordinate the efforts of thousands of officials to achieve the goals defined by the constitution and the laws of a country. Like all organisations they are always busy creating and developing, refining and re-working the rules under which they operate.

We will focus on a simple assertion: policies allow organisations to act in a consistent manner. Without a formulated policy or a policy framework, officials and office-bearers cannot apply themselves in any systematic way. So a lot of effort and a many resources are expended in the development of policy. In a country such as ours, undergoing a transformation away from the institutions of the Apartheid past, policy work has increased tremendously. As new rights, new laws, new problems, new dilemmas appear on the scene, policy development has multiplied.

The word 'consistency' is of paramount importance in any organisational setting. Consider, for example, a health clinic. It is on the government books and somehow government needs to look after it. A provincial department decides to give it R 1 million a month. The health professionals sit down and say: OK we have R1 million a month. We are new here but we are democrats, we have to democratically decide on how to spend it. They decide to spend it on the basis of a 'first-come, first-serve' principle. They do so. They do so, with a smile. In the first two weeks they run out of money. They close their doors. They sit down again. They decide to stretch their work

over the whole month. They decide to care for all those whose ailments are on the left side of the body and care for those whose ailments are on the right side of the body during the following month. Their books balance. Realising though that half of their patients are children and half of their patients are adults, they decide that the next month will only be children's month. Imagine what would happen. We can get furious and accuse them of immoral randomness. They would say 'no' we are not random, we are consistently democratic and we are trying to serve as best as we can with the resources we get.

As we all know, policy documents do not drop from the sky nor can they be bought at CNA. Policies are developed – some policies emerge through consultations with stakeholders, through discussions and debate, through contestation. Invariably, some research will be involved. At a certain point, a policy-framework is approved or endorsed. Then, it would be 'actioned' or 'implemented', and officials after some training or instruction will be able to carry it out.

New policies create a lot of noise around them. We might be interviewed as individuals or we might be consulted as stakeholders. If we have our say and the results are contrary to what we want or need, we will protest, shout and moan. Nevertheless, without clear policy guidelines or frameworks, organisations cannot achieve their goals.

A further point that needs to be made is that new laws more often than not demand immediate policy work. What laws do is to empower groups of people to do new things with their lives. What they also do is to prohibit people from doing some things. For example the Employment Equity Act has empowered 'designated groups' on the labour market in order to redress the Apartheid past. It has empowered such 'groups' to demand change. It has also prohibited employers and non-designated groups to continue doing things in the 'old ways'. Such a law immediately demands policy development: each organisation has to create guidelines of how it would comply with the legislative framework.

Good policy frameworks are vital but they are as 'good' or 'bad' as the information they relied on in the first place. So we return to the role of research: unless the information available to policy-makers was 'reliable' or 'valid' their policy outcomes would be compromised.

It is important to remember that you can have consistent policies based on either good or bad principles. What we mean with the emotive words good or bad is two things: if 'bad', the task might be badly defined or it might be unclear or its objectives have not been clearly thought out. It can also mean that the principles and objectives might be morally wrong, discriminatory, based on a specific vested interest or suspect.

The purpose of this session is to also raise another point that has to do with policy research as such: you can have an unreliable and badly done piece of research informing a very popular policy development. Its opposite is also possible: you can have an excellent piece of research

informing a horrific policy. The challenge for all of us is to understand the goals, objectives and principles behind the research as well as the quality of the research.

In conclusion: Remember that every policy document claims that it should be taken seriously because it is based on reliable information. It is reliable because it reflects real aspirations gathered through consultations or through research about people. Our task is to understand and question such claims.

Policy research has been central to South Africa's developing democracy. In fact, the transition from Apartheid with its racial forms of domination to a new dispensation has increased the volume of policy development and research to unimaginable levels.

There is no doubt that power-based confrontations and negotiations have created the possibility for the new society. They can also determine whether for example there will be Provinces in the country and decide on their relative powers. Once it was decided that, 'yes' there will be provinces, a decision is needed to agree on 'how many'. Teams of experts and representatives get together, researchers are hired and they propose a number of options: is it going to be 5 or 9? Power and influence decides on 9.

Then, the country needs to define what the provincial powers would be. Immediately after that, the country needs to know what its 'distributional' policy would be: in other words, how will the state share its resources between the provinces. Again, experts and researchers are mobilised to recommend scenarios. In the end, it is decided that the fairest and most democratic policy would be one that gives the provinces sums that are proportional to their population. That is, despite the fact that Gauteng contributes more to the country's economy and to the state, it will only receive according to its population size. The rest will be spread to the other provinces. To do that, you have to know reliably how many people are in each province. Statistics South Africa has to find out through a Census. More research is needed.

Then, the country needs to establish the separation of powers between national, provincial and local authorities. Then the country needs to establish a unified state administration. Then you have to establish principles of governance. Then each institution needs to develop its own policies. Finally, as laws are voted in, policy work follows. The volume of policy research increases and increases.

The **first** important point this section seeks to make is that policy work is defined by three 'power arrangements'.

The first is a *historical* balance of powers: this is embodied in the country's Constitution. At a certain moment in time, all the conflicting parties compromise on a document that defines the

character of the state. Although the Constitution can be changed, it needs such an overwhelming majority in parliament and obey certain guidelines that it is very difficult to change, indeed.

The second is a *fundamental* balance of powers: this is embodied in a country's laws. Such laws have to conform to the Constitution but they can be created and changed in the country's parliament. They are contested by parties and by civil society, but once they are 'passed' they fundamentally define the parameters of action in a country.

The third is an *implementation*-based balance of powers: this is embodied in policies that translate the above into consistent and applicable operational principles or plans. Policies and plans are contested, defined and re-defined but once in place, they allow organisations (the largest of which is the government) to implement what they are supposed to do in a consistent way. These policies can be developed unilaterally by the powers vested in government or through processes of consultation.

The **second** point this section is trying to make is that we can distinguish policies in terms of their scope: some policies are 'fundamental' some are 'streamlining', some are 'corrective' and some are redressive'.

'Fundamental' – these are policies that define the operations of an entire sector of activity following the passing of a law. For example, our Health policy is one that prioritises preventative health care. Through that government, health professionals, health-based organisations and service providers are enabled to act in a consistent way (a White Paper on Health or Education is an example of this).

'Streamlining' – these are policies that are developed to create an efficient delivery process so that everyone knows what their role is in the system of implementation and knows what to do and knows when to do what they are supposed to do (a strategy policy on HIV/AIDS or schooling is an example of that).

'Corrective' – these are policies trying to correct a problem that arises. Such problems have either been unforeseen, or the 'Streamlining' is not working, or the system fails to do what it is supposed to do. For example, the treatment of HIV/AIDS mothers to stop transmission to infants was 'outside' the immediate actions of the streamlining processes. Now it seems that a corrective policy, which affects the Fundamental policy and the Streamlining policies, will need to be developed.

'Redressive' – they may have to be developed if the 'Corrective' policies are in crucial conflict with the 'Fundamental' one. So a new Fundamental policy needs to be developed. For example, the Basic Income Grant or a National Income Grant is being vigorously debated. If it is seen as a necessary redressive measure, it will affect and re-define GEAR (the macro-economic policy), the policies of the Department of Labour and the Social Welfare policies of the country. If this

cannot be done, and there is overwhelming political support for the new grant, then a new law has to be passed to create an enabling environment for new Fundamental and Streamlining policies.

The **third** point this section is trying to communicate is that policy development is central for organisational life in all societies. It is important therefore to spend a few minutes re-visiting some of our prior understandings of organisations. Organisations reflect the need to coordinate human effort to achieve certain goals, through policies that encourage consistency in action.

Organisations are related to another type of structure – social movements. Sociologists claim that a social movement is a sustained upsurge of people challenging the social order or the structure of a society. They do not involve just 'upsurge' but a 'sustained' upsurge. The definition also implies that social movements are oppositional – they challenge the social order. If they challenge the social order, social movements bring with them new orientations and values.

Let us take these points in turn: in our everyday life, where we work or where we live, we get upset or angry about events. Sometimes we are so upset as to down tools, go on strike, chase government officials out of our neighbourhood, arm ourselves and chase foreigners out of the street, set up barricades, throw stones. These are upsurges, they are unplanned, they are spontaneous, they reflect and demonstrate social grievances. They are a challenge to the social order but sociologists insist they are not social movements.

They become social movements when such upsurges are sustained through a coordinated effort. Leaderships emerge, people volunteer their effort, resources are gathered and through that, the social grievances and challenges to the social system become sustained. This is true of social movements that seek social justice but also of movements that demand privileges, exclusion of some group or another, religious ones as well as ethnic.

In the process of coordination some of them develop the features of organisation we have addressed previously. For example, the trade union movement displays all the features of a structured organisation, whose existence is owed to a crucial social grievance by workers. They have constitutions, structures, decision-making bodies, office-bearers, rules and procedures. But they did not start like that.

Some movements start 'from below' – people in their everyday lives become fed up and start challenging their conditions of life. At other times, a constituted group propagate their ideas, they gain popularity and people join the movement. Whatever the origin, we need to be able to analyse their significance.

Once a social movement is organised, it invariably needs to develop internal and external social policies to guide its actions. Some of these are simple some of them are complex. For example, an internal one might involve employment conditions and office space allocation within the

organisation. An external one, might involve a carefully worked-out policy about the organisation's relationship to local government, to funding or to other organisations. All these policies might not need research – a simple majority decision at the appropriate level, after discussion and debate might be enough. Sometimes they do: from the simple, 'hey, Ben, my boy, go and find out what employment policies our next door neighbour organisation has and come and report' to the complex, 'Ms Bernards, could you please find out the patterns of wage-remittance of our members to the countryside.'

The usual research conducted by organisations and social movements in civil society is *needs*-based – the need for example to find out about the organisations they are dealing with, around their strategic concerns and priorities. Organisations like trade unions need to collect and analyse data on a regular basis about the performance of companies in their sector, and the trends in the economy, especially before wage-negotiations. To do that, they commission research. Such needs-driven, strategic research has been increasing in the country since the 1980s.

Most civil society associations, organisations, networks, and social movements are involved in advocacy work – these are processes of realising their goals and objectives. Such advocacy work involves a range of activities from protests to demonstrations, from campaigns to education programmes. From our observations, research enters advocacy work when the above groups become involved in processes of consultation, of lobbying, of defending, of challenging or of popularising. We shall take these in turn.

Consultation: Most policy formulation or development involves processes of consultation with stakeholders. Such processes provide an opportunity for civil society organisations to 'make their case' and make it strongly. Many of them prepare substantial reports based on research and argument in the hope that the policy-outcome will reflect the aspirations they represent. Although everyone is unsure of how the policy will balance all the competing claims, many civil society groups take these processes seriously. Furthermore, however solid, reliable, exhaustive the research might be, there are no guarantees of its gaining influence. It also depends on how powerful, influential, authoritative and decisive the group is in the country's life.

Lobbying: An aspect of the politics of influence involves 'lobbying' decision-makers and decision-takers. This involves formal and informal meetings with them, trying to convince them that changes have to happen, that procedures need to change, that different voices have to be heard, that governance needs to be improved. In a corruptible system, such lobbying involves bribes, deals, sleeping partnerships with decision-makers for mutual gain and threats. In a democratic environment such a politics of influence, involves the sharing of information and of values, hoping to effect a change. The quality of the research findings strengthens such interactions.

Defending: Usually defending one's constituency or members happens in Court: to stop eviction orders, to stop electricity cut-offs, to get treatment for HIV-positive mothers, to stop retrenchments and changed conditions of employment, to stop harassment and intimidation. In the case of the Constitutional Court it is to uphold and confirm a right enshrined in the Constitution of the country. Whatever the case might be, magistrates and judges demand facts and well-grounded arguments and evidence. Invariably, civil society organisations develop arguments based on extensive research studies around the issue at hand.

Challenging: when the dominant ideas in society, when also policies or laws are against what civil society formations strive for, research helps them in formulating public challenges to the status quo. Women's groups, Trade Unions, Livelihoods Initiatives, Faith-based movements, Unemployed networks, Campaign groups and a large number of formations engage daily with information, value-systems, public opinion and dominant beliefs. Such challenges are part of the vital work of civil society and so is the quality of information they gather to launch their disagreements.

Popularising: all initiatives attempt to win the 'hearts and minds' of the broader public and to gain support from wider and wider layers of people. Armed with the desire to make the broader public aware, campaigns and programmes are launched to disseminate values, insights, and information on a daily basis. This starts processes of response from those who feel discomfort with such a process, who in turn start their own alternative campaigns. In this contestation research findings are propagated, questioned, challenged.

Most civil society formations do not have internal research capacity. Some do: COSATU has created NALEDI as its research wing but even the largest trade union formation relies on others as well. Usually research is commissioned to NGOs (Non-Governmental Organisations) that specialise in research services (such as CASE, CPS and CSVR). It is also commissioned to consultancies and to civil society service organisations (like the labour service organisations – TURP, SWOP, ILRIG, etc). On other occasions it is also commissioned to University Departments and Centres (such as EPU, CHP, and CALS).

Each of these organisations has its own mandate, strategy and growth-plan. They have their own policies, styles and forms of accountability. They depend on funding, tenders and commissions. Sometimes the funders tell them what they can or cannot do with their capacities. Sometimes too, they serve conflicting constituencies. On many occasions conflict and disagreements emerge between those who commission the research and the researchers. Although everybody prefers good relationships based on accountability and mutual respect, this is not as easy as it looks from the outside. Research in the 'real world' is different in this sense from most academic research. It involves much more negotiation, attention to practical concerns and negotiation with a range of parties external to the research process itself. It is more complicated but at the same time more challenging and potentially of greater interest.

ADVOCACY

In all societies, possessing equal rights never means that people have equal capacities or power. Power is not something you can put in your pocket – it always involves a relation between people. At its broadest definition many social scientists agree that it involves the ability or capacity to get others to do what you want them to do whether they 'like' it or not. If a group, a collective or an organisation is able to do that, we can say that it exercises power over others. Such power relations define relationships between men and women, elders and youngsters; owners of the means of production or livelihoods and non-owners, owners and controllers of the means of communication, of the means of devotion and knowledge, and others.

Therefore all societies have inherent power tensions that generate conflict. Some of them are impossible to resolve within a social system, some are, but each society moves through forms of conflict and reconciliation.

The South African Constitution enables any two people to form any voluntary association to pursue their common aims and objectives within the boundaries of the law. This is available to the powerful and those whose capacities to exercise power are limited. Any and every voluntary association is involved in advocacy work of some scale.

Such advocacy work intensifies if it is located within a social movement. We have defined social movements as 'sustained upsurges of people challenging the social order or the structure of a society'. Phrased differently, social movements challenge power configurations.

Political scientists distinguish for example between transformative, reformative, identity and redemptive movements. So for example, a communist movement in a capitalist society would be of a transformative nature. A movement that challenges the social order for more access to resources would be a reformative one. An identity movement would be fighting for special group rights that recognise its constituency's difference. A redemptive movement would be one that demands withdrawal from the social order so that it could create its own moral society. Sociologists are more concerned with how these movements are organised. Economists are concerned with the economic and social resources such movements deploy in their 'sustained upsurges'. Social movements as the central carriers of change and new values are some of the most researched components of human life.

One of the most fascinating movements in the last twenty years has been the Self-Employed Women's Association (SEWA) in India and its 'sister' organisation the Self-Employed Women's Union (SEWU) in South Africa. It is a movement fighting for greater access of informal sector women to the economic life of a country. It is an organisation and a network: it mobilises resources and creates alternative systems of participation; it is intensively local and through networking, it is globally linked. It is criticised by the left as being too 'reformist' and by the

right as 'subversive' (usually of the gender relations in society). It works finally in alliance with other NGOs, CBOs and research consultants.

The reason why this example was chosen amongst thousands of others is that it combines three features that advocacy work has been all about: conflict processes, encroaching processes, and creative processes.

Conflict Processes: organisations in civil society, in pursuing their goals, are active agencies. They are involved in a range of activities from protests to demonstrations, from campaigns to education programmes. They become involved in processes of consultation, lobbying, defending, challenging and popularising.

Encroaching Processes: movements especially among the poor and dispossessed are involved also in a politics of encroachment. They gain access to resources, spaces and facilities. For example, in the SEWU case above, the municipalities have shifts their policies to, instead of chasing women traders from the street, to offer them pavement and stall access. This 'encroachment' creates its own dynamics.

Creative processes: movements create alternative institutions and systems as well: new productive networks, centres, care facilities, advice nodes, transportation systems, cultural institutions and alternative economic processes. The list is long and growing as the state is withdrawing from areas of social life, leaving civil society to fend for itself.

Advocacy means organising to identify, understand and challenge social relations and power configurations in state and society. In achieving their goals, organisations work through several steps that can be summarised as below:

Problem Identification

- They agree that there is a problem
- They ask themselves what is the cause or what are the causes of the problem
- They examine whether the situation can be changed through advocacy work, and proceed with the following

Gathering Information

- They gather as much information about the situation and its causes
- Such a gathering process might involve research
- They identify possible solutions
- Such an identification might involve research on options
- They develop an idea about favourable or negative opportunities
- They develop a clear idea of sources of support

Taking an Action-based Decision

- They agree to act

Planning

- They create a clear plan of action that involves a variety of processes as outlined above: lobbying, demonstrating, popularising, etc.

Taking Action

- This involves also the definition of action-based roles and division of labour

Evaluation – which may lead to new problem identification

- It involves a thorough review of the outcomes of the action
- It reviews and researches the intended and unintended consequences of the action
- It identifies new problems

We can see from this step-by-step scheme of advocacy work that research may occur at various steps. Also, that other people's research and policy documents based on other people's research enter the process.

The steps outlined above are best suited for what we have described as ‘conflict processes’. We need to explore how the relationship between research and action differs in ‘encroaching’ and ‘creative processes’.

First, there might be confusion about the distinction between the two. There should not be. Movements, organisations and initiatives manage to win access to existing resources. As we mentioned above, informal traders might win the right to use pavements and get the city to provide toilets and stalls. They do not get a new city built for them. They gain a new dispensation. But this immediately changes their operations because they have to operate from a new platform – a platform that is part of their existence. Their advocacy has to change to include this new platform. They would ask for storage space and night-shelters. The authorities might resist. The informal traders will not throw away their gains because of that, their survival depends on it, but they will lobby, argue, and fight to encroach some more.

Second, creative processes involve the creation of an alternative system or institution that does not exist. This would involve creating, sustaining, expanding, sourcing and resourcing something that is viable: a cooperative, a crèche, a cultural centre, an alternative education system and so on. If we take these two kind of processes, it is easy to see how research deployed for their achievement might be different: knowing reliably that 11% of our women members are HIV positive is not the same as building and creating a new health-care facility.

Let us now in conclusion return to the theme of advocacy. Let us use a more refined definition of 'power' – power is an aspect of all relationships in society. It can be 'legitimate' or 'illegitimate'. For example, we might consent to, agree with, and empower certain groups to carry out their goals because we identify with them. Or we might feel that this or that group is illegitimate.

All organisations in society are means through which social power is marshalled to achieve certain goals. In a society that enables free and voluntary association, we are faced with competing, contending and conflicting goals and processes. Therefore advocacy work flows out of this contestation.

In this context, researchers and social scientists claim that without them it would be difficult to 'know what you want' or 'want what you know'. They claim that research due to its systematic, methodical and methodological rigour is an indispensable element of social and organisational life. Researchers want to claim more: that their work should be independent of power interests if it is to be reliable. Advocacy groups and organisations criticise researchers all the time: research should be linked to their needs, it should be linked to their aspirations, it should be relevant.

It is the creative tension between power, interests and knowledge that informs researchers' work. They cannot produce pure knowledge that is not implicated in power relations and they cannot serve the interests of groups implicated in power relations without seeking to examine and challenge existing knowledge and create new one.