CHAPTER 4

METHODOLOGY

4.1 INTRODUCTION

This chapter presents details of the research design and methodology used as well as an explanation and justification of how they were employed in this research. The methodology, as the core of the research design, is the tool used to accomplish part of the study, and specifically to obtain and analyse the relevant data (Thomas, 2006:357). To provide a brief context for the research design and methodology, a brief overview is given of the previous chapters (Chapters 2 and 3) that provided the theoretical framework on interpretation in national parks.

In Chapter 2, the focus was on the nature and place of interpretation in nature-based and cultural tourism destinations, with special reference to national parks. This chapter explained the role of interpretation in national parks and the interpretive roles of ecotour guides, as well as the conceptual foundation of this thesis, which is the ”EROT model of interpretive communication” in order to give a picture of how interpretation in nature-based tourism is understood. A large proportion of the exposition in Chapter 2 assisted to fulfil Objective 1, while some sections (EROT model) assisted to fulfill Objective 2. Objective 1 aims:

- To examine the place and nature of interpretation in national parks.

In Chapter 3, a broad overview of some management support and quality assurance systems for tour guides’ effectiveness was given. The quality assurance mechanisms that are used in tour guiding, such as professional associations, codes of conduct, certification, licensing and training, with special emphasis on continuing education and training for ecotour guides in nature-based tourism, were presented. The discussion further highlighted some of these mechanisms as they are used in the South African context. A brief discussion on management support for effective interpretation was also

given. Discussing quality assurance mechanisms helped to elucidate what can be done in managing tour guides' effectiveness in interpretive guiding. This chapter also explained the role of evaluation in ecotour guiding, with the intention of revealing what can be done to assess the quality of interpretive guiding in national parks. All the discussions in Chapter 3 aimed to fulfil the second objective, which is:

- To identify the factors constituting effective interpretation.

Various means were used to access the literature for Chapters 2 and 3. These included the following:

- The libraries of the University of Pretoria, North West University and the University of South Africa were used to collect information from books and periodicals;
- The inter-library loan facility of the North West University was used to access books from other universities in South Africa; and
- Databases such as EBSCO, Hospitality and Tourism Index and JSTOR were used to access journal articles and local and international theses and dissertations.

Reviewing the literature assisted the researcher to develop the theoretical framework of the envisaged model for effective interpretation for tour guides operating in SANParks, thereby highlighting the need for its further development through the empirical investigation, hence this chapter (Chapter 4).

This chapter (Chapter 4) presents discussion and clarification of the design and methods that were used in this research, such as the sampling methods, data collection, and data analysis to investigate empirically the 3rd, 4th, and 5th objectives and to test the formulated hypotheses, as indicated below:

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- Objective 3: To determine whether tour guides appropriately apply interpretive delivery techniques.

  H1: Within the South African context, tour guides do not effectively apply interpretive techniques in national parks.

- Objective 4: To identify tour guides' continuing education and training needs regarding interpretive delivery techniques.

  H2: Tour guides perceive the provision of continuing education and training in interpretive techniques as essential in improving their effectiveness in interpretive techniques**.**

- Objective 5: To assess the role of management within the context of South Africa's situation in supporting effective interpretation in SANParks national parks.

  H3: Perceived lack of support from management has a strong impact on tour guides' effective application of interpretive delivery techniques.

4.2 RESEARCH DESIGN

This research is descriptive, i.e. the research describes phenomena as they exist, by identifying and obtaining information on the characteristics of a particular problem or issue (Hussey & Hussey, 1997:10-11).

Descriptive research is common in the leisure and tourism field because of the changing nature of the phenomena being studied (Veal, 2006:3), such as the tourists' and tour guides' views. It is non-experimental research because variables are not manipulated by the researcher and are instead studied as they exist (Belli, 2009:60; Frankfort-Nachmias & Nachmias, 1996:115; Martin & Bridgmon, 2009:37).

The type of non-experimental research that was used in this study is cross-sectional, the design which is most commonly used in the social sciences. This design is best

suited to studies that intend to find out the prevalence of a phenomenon, situation, problem, attitude or issue, by taking a cross-section of the population. This approach is useful in obtaining an overall picture as it stands at the time of the study (Kitchin & Tate, 2000:93; Hussey & Hussey, 1997:59) so that there will not be the problem of chronological changes (Hussey & Hussey, 1997:59). The data is collected just once, over a short period of time, before being analysed and reported (Hussey & Hussey, 1997:59; Kitchin & Tate, 2000:93).

In this study the quantitative data was collected at six points in time during the period from May 2009 to April 2010, at the six parks that were selected (refer to Figure 4.1). These six parks, as stated in Chapter 1, were the Addo Elephant National Park (Eastern Cape Province), Kgalagadi Transfrontier Park (Northern Cape Province), Table Mountain National Park (Western Cape Province), Marakele National Park (Limpopo Province), Mapungubwe National Park (Limpopo Province), and Kruger National Park (Limpopo and Mpumalanga Provinces).

Figure 4.1: Map showing the six selected national parks

Source: SANParks (2008).

The aim of collecting the quantitative data in these national parks was to gather information from tour guides on their perspectives on interpretation, especially their application of interpretive delivery techniques, their continuing education and training needs regarding interpretation, and the role of management in ensuring effective interpretation. While the tour guides were the focus of this study, the inclusion of other tourism players such as tourists and park authorities, who either influence or are influenced by the tour guides' activities (Hu, 2007:52), was however found essential. Hence information was gathered from tourists concerning their feelings about interpretation as offered by tour guides, i.e. the guides' interpretive delivery skills and, the contribution the guides made towards their satisfaction at that particular time. Information was also gathered from park officials in order to obtain their perspectives on interpretation in their parks, and to establish their role in making interpretation more effective.

The initial intention of the researcher was to include private operators and private guides (if any) that operate in the six selected parks. Several attempts were therefore made both telephonically and electronically to solicit their participation in the study but all was to no avail. They simply did not cooperate. A number of them even called on the researcher to refrain from talking to their tourists and tour guides.

In order to achieve the objectives of the study, both qualitative and quantitative approaches were used, on the basis of Neuman's view (2003) that a scientific research method is not one single thing, but a combination of ideas, rules, techniques and approaches that the scientific community uses to arrive at valid and objective results. Hence in this study the researcher used a combination of approaches and methods, i.e. mixed method research. In mixed method research, the researcher uses a mixture or combination of quantitative and qualitative methods, approaches or concepts in a single research study. This modus operandi helps to improve the quality of the research because different approaches have different strengths and weaknesses (Johnson & Christensen, 2008:51).

4.3 QUALITATIVE APPROACH

Interviews with selected individual park managers/officials were used as a qualitative method in this study. The word qualitative implies that there is an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency (Denzin & Lincoln, 2005:10). Qualitative methods help to check whether unexpected variables would emerge during qualitative data collection that could be integrated into the quantitative method of data collection (Muijs, 2004:9). Using qualitative methods enables researchers to explore a problem in depth. These are the informal conversational interview, the interview guide approach and the standardised open-ended interview (Johnson and Christensen, 2008:208). In this study, the researcher used the standardised open-ended interview. The use of this kind of interview was appropriate because the intention of the researcher was to focus on particular themes. Interviews allow the researcher to produce a rich and varied data set in a less formal setting. They also allow a more thorough examination of experiences, feelings or opinions that closed questions could never hope to capture, and therefore allow the researcher (interviewer) to make a true assessment of what the respondents really believe (Cohen, Manion & Morrison, 2000:275; Kitchin & Tate, 2000:213). The researcher also preferred a standardised open-ended interview in order to avoid variations in the questions and to remain focused. In the standardised open-ended interview the questions are all written out, and the interviewer reads the questions exactly as written and in the same order to all interviewees (Johnson & Christensen, 2008:209). The open-ended nature of the interview schedule was preferred because it allowed the researcher to probe and to be able to go into more depth.

Furthermore, Oppenheim, as cited in Kitchin and Tate (2000:213), suggests that the interview is really a precursor to a larger questionnaire survey, with the interview providing the basis for the closed-ended questions in the questionnaire. Used together with such a questionnaire, the interview provides a pilot study for formulating relevant questions.

Interviews with selected individual park managers/officials were done in two phases. The first phase of the interview specifically solicited information on issues in interpretation such as its quality, its purpose and the training needs of the guides in this regard. The outcome of the first-phase interviews was intended to be used for the development of the quantitative instruments and to gather information on the management's views on interpretation by SANParks' tour guides in their parks and their role in ensuring effective interpretation. The second phase of the interviews was used as a follow-up session to clarify certain issues, including those that had emerged from the first- phase interviews (refer to Table 4.1).

In qualitative research the issue of sampling has little significance, as the main aim of most qualitative enquiries is either to explore or to describe the diversity in a situation, phenomenon or issue (Kumar, 2005:165). However, in this research a purposive sample was used to select six park officials who were based at six of the study sites, Marakele, Kruger, Table Mountain, Mapungubwe, Kgalagadi and Addo, as shown in Table 4.1 and Figure 4.1. A purposive sampling technique is based on the researcher's knowledge of the population, its elements and the aims of the research. The researcher makes his/her judgement on who should participate on the basis of the participants' relevance to the topic. Thus the primary consideration in purposive sampling is the judgement of the researcher as to who can provide the best information to achieve the objectives of the study (Kumar, 2005:179).

The rationale for using a purposive sampling, as stated by Sarantakos (1997:152) and Kumar (2005:179) was also driven by one of the aims of the study: to solicit information on the role of park management in enhancing effective interpretation. It was the researcher's judgement in conjunction and in consultation with SANParks (during the application to conduct interviews with SANParks) which made purposive sampling the best option, as compared with the other types of non-probability sampling methods such as accidental, quota and snowball sampling methods.

One-page standardised open-ended interview schedules for the first and the second phases (see Appendices C and D) were designed by the researcher for interviews with the park officials of all six selected sites. The first-phase interview schedule was based on:

- The literature survey, in order to construct the structured open-ended questions; and
- The principles that should be adhered to in designing an interview schedule.

The content of the interview schedule revolved around the following themes:

- The understanding of and the purpose of interpretation;
- The requirements for tour guides who do environmental and cultural heritage interpretation in SANParks;
- What needs to be done in order to enhance/promote effective interpretation in their national parks; and
- The critical elements in effective delivery of cultural and environmental interpretation.

Five telephone interviews were held with five of the six park officials and a personal interview was conducted with one (see Table 4.1) during the first phase, and all second-phase interviews were telephonic. The primary reason for conducting telephone interviews was ease of access to the interviewees, who were in geographically diverse locations , as well as that it was more cost-effective than driving to all the respective parks (distances shown in Figure 4.1).

However, the researcher found it useful to conduct one face-to-face personal interview, prior to the telephone interviews, with a park official of the biggest park. This provided an opportunity to form an overall picture of interpretation in SANParks. The greatest value of face-to-face interviewing lies in the depth of information and the detail that can be obtained, which far exceeds the information secured from telephone interviews (Cooper & Schindler, 2001:298).

The second-phase interview aimed to solicit information on issues such as:

- Transformation issues on employment of tour guides; and
- Monitoring and evaluation of guides' interpretive performance.

Official logistical procedures for interviews, such as making an appointment, were followed before the interviews were conducted. It is essential to make an appointment and to check later whether it is still convenient, because the schedules of busy people are often subject to unpredictable changes (Table 4.1) (Gillham, 2005:104). Appointments were fixed before the interviews were held because of the busy schedules of the park officials and were later confirmed and changed accordingly in certain instances. It was during the fixing of appointments that the researcher had an opportunity to clarify again the purpose of the interview and what was expected of the interviewee, to ask again for their consent and cooperation, and also to indicate how long the interview was likely to be. This was necessary, regardless of the correspondence received from the officials about this study and the contract agreements which had been signed earlier by both interviewee and interviewer (the researcher). Copies of the interview schedule were also sent electronically to the participants during the first phase of interviews. According to Gillham (2005:104), it is often helpful to send some written material such as a copy of the interview schedule, so that the researcher does not have to recite a long question. In this case, an interview schedule was sent so that the interviewees would be able to follow the questions without any hesitation or confusion.

The interviews took an average of 40 minutes each. The researcher wrote down the respondents' responses verbatim because no requests or arrangements had been made for tape-recording (which might not have been satisfactory when recorded over the telephone). According to Veal (2006:200), note-taking is acceptable when tape-recording is not possible.

Table 4.1: Types of interviews conducted with park officials (first-phase and second-phase)

Name of park	Number of Interviewees/ park officials and form of interview	Interview date (1st phase)	Interview date (2nd phase) (All telephone interviews)
Kruger National Park	1; Face-to-face interview	21 May 2009	13 May 2011
Table Mountain National Park	1; Telephone interview	29 May 2009	26 May 2011
Mapungubwe National Park	1; Telephone interview	1 June 2009	11 May 2011
Addo Elephant National Park	1; Telephone interview	12 June 2009	23 May 2011
Marakele National Park	1; Telephone interview	18 June 2009	17 May 2011
Kgalagadi Trans-Frontier Conservation Park	1; Telephone interview	11 August 2009	16 May 2011

In concluding this section, it should be reiterated that these interviews were conducted in this study to gain a broader understanding of the nature of interpretation in the parks, to investigate the role of management in enhancing effective interpretation, to determine what needs to be done to promote effective interpretation, to monitor tour guides' effectiveness, and to confirm the relevance of topics and themes that would be part of the quantitative process.

Section 4.4 provides the details of how the quantitative approach was used in this study.

4.4 QUANTITATIVE RESEARCH

This section explains how and why quantitative research was conducted in this study. The quantitative approach was used for the following reasons:

- To seek quantitative answers which qualitative, non-numerical methods may not provide, such as the number of tourists and tour guides involved, the extent to which guides effectively apply interpretive delivery techniques and the extent of the need for training in interpretation;
- To establish relationships between variables which could only be accurately studied using quantitative methods, such as the application and knowledge of interpretive delivery techniques in relation to the length of experience of tour guides; and
- To test the hypotheses of this study that could be appropriately tested by using the quantitative approach (Muijs, 2004:7).

4.5 SURVEY RESEARCH

The quantitative research method used in this study was a survey. Survey research is used when the researcher intends to describe relevant characteristics, opinions, attitudes or previous experience of individuals, groups, or organisations by collecting information from a sample (Berends & Zottola, 2009:90; Leedy & Ormrod, 2005:184). The aim is to learn more about the large population by surveying a sample of that population; hence it might be called a descriptive survey (Leedy & Ormrod, 2005:184). The survey strategy is usually associated with the deductive approach. Research becomes deductive when the researcher develops a theory and hypothesis/hypotheses and designs a research strategy to test them (Saunders, Lewis & Thornhill, 2007: 138).

This survey research involved two groups: tourists and tour guides. Tourists' opinions about the application of tour guides' interpretive delivery, as well as their general satisfaction as attributed to interpretation, were sought. The research also entailed

describing the characteristics and opinions of tour guides with regard to their experience of the application of interpretive delivery techniques, that is, the problems they encountered and their perceived needs for training in interpretive delivery techniques.

In describing the opinions and characteristics of the tourists and tour guides, it became essential to follow appropriate sampling techniques.

4.5.1 Sampling

4.5.1.1 The relevant target population

Only about twelve of the twenty-two national parks of SANParks provide interpretive guided activities (Park managers, pers. com.,2011). Of the twelve parks, six were selected to represent the parks that provide interpretive guided activities. The target population comprised all the guides working in the six selected parks (see Table 4.1, and Figure 4.1), that is, about 120 guides, and the accessible tourists who participated in the guided activities of the six selected parks during the duration of the fieldwork.

It is essential to mention that the motivation to select SANParks as the study area was enhanced by the fact that parks under the authority of SANParks are distributed across many provinces of South Africa (Figure 2.3), as opposed to some other conservation and tourism authorities which are only provincially based. Furthermore, SANParks, through the network of its national parks, constitutes almost 62% of the South Africa's formal protected areas (Castley, Patton & Magome, 2009:403). It is regarded as the highest conservation authority in South Africa (Brynard & Malan, 2002:107).

Non-probability sampling was used. It is acceptable to use non-probability because it may become imperative for the researcher to use non-probability sampling techniques in a situation where the number of elements in the population is either unknown or cannot be individually identified (Kumar, 2005; 177). For the said reasons, non-probability sampling was applied in this study.

The convenience (accidental) sampling technique, which is a non-probability technique, was used in this study. This type of sampling technique relies on conveniently available subjects (Frankfort-Nachmias & Nachmias, 1996:184), and is used due to practical constraints. It may also be used when the researcher envisages that it would be either impossible or unfeasible to select the kinds of probability sampling (Babbie, 1992:230; Johnson & Christensen, 2008:238). As a result, only people who are available, volunteers or those who can be easily recruited and are willing to participate may form part of a sample (Johnson & Christensen, 2008:238).

The convenience (accidental) sampling technique was used in the six parks, Kruger, Marakele, Table Mountain, Kgalagadi, Mapungubwe and Addo, to select tour guides because of the following:

- Only the researcher herself distributed copies of the questionnaire to the guides, and that involved a lot of travelling time to parks (and their different camps) that are very far from each other. Under certain circumstances this strategy is an excellent means of obtaining information quickly and inexpensively.
- It was only possible and convenient to access tour guides when they were in their administration building waiting to begin their guided activities or immediately after a guided tour. The researcher was therefore obliged to involve only those who were available at that time. Thus some of the tour guides were not present when copies of the questionnaire were discussed and/or distributed.

A convenience sampling technique was also used to approach the tourists. This was imperative because of the fact that tourists are not always willing to participate in surveys. In most cases they are reluctant to do this because they find it burdensome to take part, when they have come to relax at leisure. Refusal to respond is the most common reason for non-response (Welman, 2005:73). Therefore, only those who were willing to complete the questionnaire formed part of the sample.

Sample size for tour guides: Of the 98 (n=98) questionnaires that were distributed to tour guides, 46 (n=46) questionnaires were completed and returned. This represents a response rate of about 47% (46.93%). The distribution of the number of questionnaires returned by tour guides is shown in Table 4.2 below.

Table 4.2: Tour guides who participated in the study

Name of park	**Number of copies of questionnaire returned**
Kruger National Park	27
Marakele National Park	5
Kgalagadi Trans-Frontier Conservation Park	0
Mapungubwe National Park	2
Addo Elephant National Park	6
Table Mountain National Park	6
Total	**46**

It is important to highlight the low response/no response from the tour guides in some cases as shown in Table 4.2. This was not surprising when considering that, given today's increasingly fast-paced culture and the growing demands and expectations which employees are faced with, tour guides may be less willing to commit themselves to a voluntary activity such as completing a survey (Sax, Gilmartin & Bryant, 2003:423). Additionally, with regard to tourists, it is important to highlight that it is difficult to construct with confidence a representative sample of visitors at a tourist destination such as a resort (Cooper, Fletcher, Gilbert & Wanhill, 1993:55). Out of the 1 000 (n=1000) questionnaires given to tourists, 169 (n=169) tourist questionnaires were completed and returned in usable form. This represents a response rate of about 17% (n=16.9%). According to Van Dou (2004:145), non-response is a major disadvantage of using a questionnaire, and there is a view that non-response has increased in recent years (Sax, Gilmartin, & Bryant, 2003:411). The recipients may simply decide not to

respond to the questionnaire. Since tourists tend to be transient travellers it is difficult to do follow-ups, which could help to maximise the response rate.

It was deemed necessary to establish the number of tourists who join the guided activities in the six national parks. Getting specific numbers of tourists who join guided activities that are conducted by SANParks' tour guides or private tour guides was a problem, because in many instances, the numbers of those who enter the gates of national parks and those who specifically join the guided activities are not categorised. However, some park managers provided the researcher with some rough estimates electronically. For instance, at Addo Elephant National Park, about 27 204 tourists join the SANParks' guides' game drive per year, whereas at Mapungubwe National Park, of the estimated 260 000 tourists who visit the park per year, it is about 4 176 tourists who may have joined the guided activities. In some of the parks, it was established that there were no private tour operators or private guides, whereas in some others there are private tour operators and tour guides. The following are some of the responses that were received about private guides/private tour operators:

"There are no private tour operators with open vehicles in the park, we do get however once in a blue moon the Overland which comes in. The only Safari companies which do visit the park regularly are -------, but we do not have the numbers about their tourists"

"We do not have private tour operators in our park, there are regulations about the type of vehicles that they should use. One or two companies around have shown interest, but their vehicles do not comply with our requirements"

"Unfortunately we do not have any stats on outside operators or concessionaires"

4.5.2 Data collection

It is always advisable to choose the data collection methods that are appropriate to the research questions and objectives (Saunders, Lewis & Thornhill, 2007: 356). Questionnaires, which may be described as a data collection instrument that each research participant fills out, were used to collect the quantitative data (Johnson & Christensen, 2008:170) (see Appendices A & B). Questionnaires are the type of instrument most commonly used in surveys.

4.5.2.1 Questionnaire

Questionnaires can be used for descriptive or explanatory research (Saunders, Lewis & Thornhill, 2007: 356). It became appropriate to use a questionnaire in this study because of the descriptive nature of the study. Despite the descriptive nature of this study, what motivated the researcher to use a questionnaire was the fact that using a questionnaire is less expensive because the researcher saves time and human and financial resources; and it offers greater anonymity, as there is no face-to-face interaction between respondents. This helps to increase the likelihood of obtaining accurate information in the case of sensitive questions (Kumar, 2005:131).

Questionnaires are commonly used in tourism research when soliciting opinions and gathering information on issues such as the type of interpretation that is provided and the application of interpretive delivery techniques. For instance, Madin and Fenton (2004:126) used a questionnaire to assess visitors' knowledge and understanding of the primary topic areas emphasised in interpretive programme activities. So did Frauman and Norman (2004: 382), to develop a further understanding of the construct of mindfulness and its application in managing visitors to natural, cultural or historically based tourism destinations. According to Ham and Weiler (2003:23), questionnaire surveys are the most widely used methods for measuring learning in interpretive settings.

4.5.2.2 Questionnaire design

Both the guides' and the tourists' instruments were self-designed in English by the researcher. Designing a questionnaire is a complex procedure that involves a great many considerations (McBurney & White, 2004:238); hence the researcher formulated the questionnaires by making use of the following:

- Literature review (issues raised in the literature). Issues raised that emanated from the literature include the following:

  - The meaning of interpretation as communication to tourists with the aim of enhancing their experience through entertaining and educating them (Chapter 2);
  - Guides' training needs and the role of management in ensuring effective interpretation through training (Chapter 3);
  - Effective interpretation and Ham's EROT model of effective interpretation (Chapter 2); and
  - The role of guides in enhancing tourists' overall experience, satisfaction and knowledge (Chapter 2).

- Modified portions of various questionnaires that were previously used in interpretive research, such as the one in Armstrong and Weiler's (2003: 45-46) section on delivery in their instrument. These portions were considered to be integrated because they related well to the objectives of this study regarding the application of interpretive delivery techniques in nature-based tourism. Despite that, the researcher found these extracted portions relevant to testing the applicability of Ham's EROT model.
- Some matters which emanated from the interviews.
- Principles that should be adhered to in designing a questionnaire; and
- The team of the Department of Statistics, in correctly structuring the questionnaire from a technical point of view.

The following discussions explain the format and the content of the questionnaires.

4.5.2.3 Format and content of the questionnaire for tour guides (see Appendix A)

This questionnaire, which included both closed-ended and open-ended precoded questions, was designed to gather information on the knowledge which tour guides have of interpretive delivery, on whether the guides effectively apply interpretive techniques during interpretation, on guides' continuing education and training needs in regard to interpretation and on how they perceive the role of management in ensuring the effective application of interpretation.

The scales of measurement that were used in the questionnaire included the rating, and categorisation scales. Rating questions are often used to collect opinion data. Most frequently the Likert-style rating scale is used, in which the respondents are asked to indicate how strongly they agree or disagree with a statement or series of statements (Johnson & Christensen, 2008:179; Saunders, Lewis & Thornhill, 2007:372). The scales used in the questionnaire provided for nominal, ordinal and interval data.

The six–page questionnaire for tour guides comprised Sections A, B, C and D. Part of Section B was derived and summarised from Armstrong and Weiler's (2003:43-46) instrument.

- **Section A** - Biographic data: This first part of the questionnaire was designed to gather information on the general background of the guides. It comprised twelve questions (Question 1 – Question 12) where participants were responding to particular questions from the fixed lists.

- **Section B** - Factors that affect interpretive delivery: This part of the questionnaire aimed at soliciting information from guides on how effective they are in the interpretive delivery techniques, as well as their continuing education and training needs in regard to interpretive delivery techniques. This section included twelve items (Questions 13.1 – 13.12), and the respondents were asked to reflect on each item using a 5-point Likert-type scale to measure their problems in applying

interpretive delivery techniques as well as their continuing education and training needs in interpretation, where 1 = there was no problem at all and 5 = there was a big problem, in applying interpretive delivery techniques. Similarly, regarding their training needs, respondents were required to indicate 1 on the scale if there was no need for training on a particular aspect, up to 5 if they felt there was a great need for training on a particular aspect. This section further required respondents to rank interpretive delivery techniques in order of importance from 1 to 5 (Question 14). Respondents were also required to indicate any other type of training which they felt they needed to improve their interpretive delivery (Question 15).

- **Section C** – Other concerns with regard to effective interpretive delivery: This section required the respondents to indicate on a 5-point Likert-type scale the extent to which they felt that the other listed aspects had any negative effect on the quality of their delivery, by indicating 1= when they strongly agreed that it had, and 5 = when they strongly disagreed (Questions 16.1 – 16.7).

- **Section D** further solicited information on upgrading training courses which they had attended on interpretive guiding since they started working as guides (Question 17, 17.1), and the reasons for not attending if they had not attended (17.2.1 – 17.2.6).

Table 4.3: Questionnaire for tour guides: construction summary

Section	Topic	Number of questions	Scale type
A	Biographical and demographic aspects of tour guides	Q1 – Q12	Information, multiple choice and open ended
B	Factors that affect effective interpretive delivery (problems and training needs in the specific aspects) Opinions on the relative importance of the interpretive delivery techniques Opinions regarding any other training needs to improve delivery techniques	Q13.1 – Q13.12 Q14.1 – Q14.5 Q15	Likert scale Rating Open-ended
C	Concerns about negative attributes that affect tour guides' quality of interpretive delivery	Q16.1 – Q16.7	Likert scale
D	Information on previous participation in an upgrading courses Reasons for not participating in an upgrading course	Q17.1 Q17.2	Yes/No Checklist

4.5.2.4 Format and content of the questionnaire for tourists (see Appendix B)

This was a one-page questionnaire. The researcher decided on a one-page instrument as a way of encouraging tourists to complete it, especially because tourists are not always eager to complete questionnaires. The rating and the ranking were used as measurement scales, and the scales provided the nominal and the ordinal data.

The construction of this instrument was as follows:

- **Introductory remarks** explained the purpose of the survey.

- **Questions 1- 3** formed a section on sociodemographic characteristics of the respondents, including age, gender and nationality.

- **Question 4.1- 4.3** was a Likert-type scale that required respondents to indicate how they felt about their interpretive experience, their satisfaction with the way the tour guide interpreted and their experience regarding environmental or cultural knowledge, where 1 indicated very much and 5 not at all.

- **Question 5.1 - 5.12** had items which required the respondents to indicate how often guides performed particular activities (according to EROT model of interpretation), where 1 was for never and 5 was for always. These listed activities/items are central to what constitutes quality interpretation, according to the literature.

4.5.3 Procedures

4.5.3.1 Permission to conduct the study

The research followed the procedure that is normally used to seek permission to conduct research within an organisation (SANParks). The research panel committee of the organisation met several times to scrutinise the proposal and to give comments and suggestions on various aspects of the study such as the focus of the study, the study sites, participants, aims and ethical considerations. After several meetings, the committee granted permission to conduct the research at SANParks (see Appendix G).

4.5.3.2 Ethical considerations

The researcher followed appropriate University of Pretoria procedures to apply for ethical clearance of research through the University's Ethics Committee. Besides the University procedure, the researcher had to comply with SANParks' ethical procedure

(through SANParks' research committee), which was incorporated into the application for approval.

These committees (SANParks' and the University of Pretoria's Ethics Committees) looked at the research proposal/application and reviewed and approved the ethical standards of the research, such as confidentiality, anonymity and consent of the participants. In complying with the procedures of both committees, the researcher duly included space for the respondents' signatures to indicate voluntary participation in the study (in the case of the guides' questionnaire), and declarations in the questionnaires that the participation was voluntary (in the case of both tourists' and guides' questionnaires). With regard specifically to the interviews, over and above complying with the University's and SANParks' requirements, the researcher made telephone calls to further explain the purpose of the interviews and of the research, and to obtain the consent the researcher sent the interview schedules electronically to the interviewees.

4.5.3.3 Pilot study

The questionnaires (for both guides and tourists) were pretested with five tourists and three tour guides, as well as with officials dealing with research in national parks that were not part of the study. The pretesting was done in order to examine both the effectiveness and the sensitivity of the questions, and the following questions formed the main considerations during the pilot study:

- How clear and understandable are the questions to the respondents?
- How applicable are the questions to the respondents?
- If sensitive issues were involved, were questions so phrased that tourists and guides could answer willingly without feeling offended?

The questionnaires were accordingly modified where necessary. For instance, "other" was included as a third option in Question 6, and "as far as possible" was added to Question 13.7 in the guides' questionnaire (see Appendix A). "Where applicable" was included in Question 5.7 of the tourists' questionnaire (see Appendix B).

4.5.4 Administering of the final questionnaire

Self-administered questionnaires were used. Such questionnaires are usually completed by the respondents (Saunders, Lewis & Thornhill, 2007:356). Self-administered questionnaires are generally cheaper and quicker than interview surveys. They are also especially appropriate if a questionnaire contains sensitive questions, when it is more convenient for the respondents to respond to anonymous self-administered questions (Babbie, 1992:277). The following section describes how the self-administered questionnaires were conveyed to the tourists and tour guides in this study.

4.5.4.1 Questionnaire for tourists

A delivery (drop-off) method was used to deliver a one-page questionnaire to tourists. It took approximately 5 minutes to complete the questionnaire.

The procedure was such that tourists collected the questionnaires when they were collecting the park's indemnity forms at the reception desk, or they received questionnaires from the guide immediately after the guided activity. Tourists were given two options for returning the questionnaires: they either left them at the reception area or gave them to the guide immediately upon completion of the guided tour**.**

Tourists were assured of complete anonymity and confidentiality and no contact details were required. The tourists did not have to give the name of the guide, and that helped to avoid bias and ensure no interference on the part of the guide. To increase the response rate, tourists were asked to complete the questionnaire immediately after the activity before they dispersed. It should however be mentioned that some tourists were not interested in completing the questionnaires, hence the low response rate to the tourists' questionnaire. According to Muijs (2004:43), the non-response will not matter if there is certainty that those who have not responded are very similar to the respondents on all relevant variables, and would therefore have answered the survey in a similar

manner if they had participated. The researcher assumed that this was the case in the survey of the tourists and that therefore the views of the tourists represented the reality and could be used for generalisation. This therefore means that this study used the exit survey of tourists, bearing in mind that some studies have used both pre- and post-visit samples for interpretive research (Tubb, 2003:481).

This study only used an exit survey, mainly because the focus was not on testing the knowledge and behaviour of the tourists before and after, but on how effective the guides were in their delivery techniques, whereas most of the studies that have used both pre- and post-visit surveys, such as Chou, Tsai & Wang (2002), aimed at testing knowledge and behavioural changes.

4.5.4.2 Questionnaire for tour guides

The researcher used two methods, i.e. dropping off questionnaires or administering them to a group, depending on the circumstances. For example, in a situation where guides would not be available because they were busy with guided activities for tourists, the researcher used a drop-off. But if some guides were not engaged with tourists at a particular time, the researcher would proceed to administer them individually. However, as far as possible, the researcher made sure that the tour guides completed their questionnaires when the researcher was available at the site to help explain when the respondents wanted further clarification. That therefore helped to increase the response rate of the guides' questionnaires. Being present at the sites enabled the researcher to meet with the coordinators of the guided activities, such as head guides, in order to negotiate for assistance with the distribution of the tourists' questionnaires that would take place later after their guided activities.

It was possible in certain camps and parks for the researcher to personally administer the questionnaire to a group of guides. According to McBurney and White (2004:245), group administration is a very efficient use of time and money and has a very high response rate. In this research, administering to a group enhanced the response rate of

the guides' questionnaires because the researcher collected them immediately. It was also possible to collect from those whom the researcher had engaged individually. In rare instances, the researcher allowed and requested the others that she had not met to submit the forms later (after a day or two) or to post them.

4.5.4.3 Covering letter

A covering letter was used to introduce the questionnaire to the respondents (see Appendix A). The purpose of the covering letter was to:

- Inform the respondents about the purpose of the study;
- Indicate why it was important for the respondents to complete the questionnaires as genuinely as they could; and
- Assure the respondents that there were no right or wrong answers, that they would not be identified and that their answers would be treated confidentially.

4.6 DATA PROCESSING AND ANALYSIS

4.6.1 Qualitative data analysis

Statements that were made by the six officials of the parks during the interviews were used as the sample for analysis. In analysing the qualitative data, the researcher used the method described and recommended by Kitchin and Tate (2000:231). This method involves description, classification and connection of statements. The description stage involves the portrayal of data in a form that can be easily interpreted. The classification stage involves "breaking up" the data into constituent parts and then placing them in similar categories or classes. It is during this stage that factors that are important or more salient are identified in order to derive commonalities and divergences. The last stage, connection, involves identifying and understanding the relationships and associations between different classes (Kitchin & Tate, 2000:231).

This method was found suitable for the analysis of the interview responses because it provided an opportunity to scrutinise data from all the respondents before selecting the aspects that could form part of the quantitative instruments.

4.6.2 Quantitative data analysis

The responses of the tourists and the tour guides generated quantitative data collected through the use of the questionnaires. The quantitative data analysis was done with the help of the Department of Statistics of the University of Pretoria, using the Statistical Package for Social Sciences (SPSS) version 17.0.

Data from the questionnaires which was already coded was entered into a statistical package for the analysis. Error checking was done because errors can and do occur, especially when large and complex data sets are involved. These errors could occur in typing, repetition or recording (Kitchin & Tate, 2000:73).

The SPSS version 17.0 analysed the quantitative data using both descriptive and inferential statistical analysis techniques. Descriptive statistics are used to organise, summarise, describe and compare quantitative information in meaningful ways (Salkind, 2008:8; Saunders, Lewis & Thornhill, 2007:433). Inferential statistics are used to draw conclusions about populations to determine the probability that results are not due to random chance (Belli, 2009:75; Salkind, 2008:163).

In this study, descriptive statistics such as frequency distribution, measures of central tendency and dispersion (mean, mode and median) were used to describe, summarise and compare data that was obtained from the tourists and from the tour guides. The inferential statistics were used to draw conclusions beyond the descriptive data and to test the hypotheses that were formulated for this study (Lapan & Quartaroli, 2009:75) (see 1.5 & 5.1).

4.6.3 Inferential statistics for hypothesis testing

Statistical inference is a process of coming up with conclusions about a population based on the data that describe the sample (Saunders, Lewis & Thornhill, 2007:211). The process assists the researcher to confirm or reject predictions or hypotheses made in the research (Field, 2005:24). It allows the researcher to make probabilistic statements about whether a particular supposition is true or false (hypothesis testing), the relationships between two or more variables, and the characteristics of the population from which a sample is drawn (Shaw & Wheeler, 1994:65), thus helping the researcher to rule out the possibility that the results from the sample size could have been obtained by chance (Saunders, Lewis & Thornhill, 2007:211).

Inferential statistical tests can be subdivided into two groups, parametric and non-parametric (Kitchin & Tate, 2000:109). Both parametric (such as the t-test) and non-parametric (such as the chi-square test) tests were used in this study to examine the extent to which the hypotheses were significant. Parametric tests make parametric assumptions, assumptions concerning the characteristics of the underlying populations that the samples come from. These include the assumptions that populations are normally distributed and samples come from distributions with equal variance. However, non-parametric tests may be used if the requirements for parametric tests might not be met, e.g. if the data is not interval, if the parametric assumptions might not be valid, and if the assumptions of parametric tests are not met. In that case, it is appropriate to employ a non-parametric test which does not make the interval assumption about the scale of measurement or any assumptions about the underlying distributions (Hinton, 1995:204). Inasmuch as non-parametric tests do not follow the same rules that are followed by parametric tests, they are, however, just as valuable (Salkind, 2008:263). For instance, some non-parametric statistics are appropriate for data that are ordinal rather than interval in nature, and others may be useful when a population is highly skewed in one direction or the other (Leedy & Ormrod, 2005:257).

Depending on the type of data, the way in which significance is tested using non-parametric and parametric statistics answers one or more of the following questions:

- Is the association statistically significant?
- Are the differences statistically significant?
- What is the strength of the relationship, and is it statistically significant?
- Are the predicted values statistically significant? (Saunders, Lewis & Thornhill, 2007:441).

In this research, the chi-square was used to test for significant relationships and differences between variables and the independent t-tests were used to test whether two groups (categories) were different (Saunders, Lewis & Thornhill, 2007:442). The tests are described below.

4.6.3.1 Chi square

The chi-square test, which is a commonly used non-parametric test, was used in relation to cross-tabulations of variables. A chi-square test was computed to test associations between two nominal variables. The chi-square test assists in finding out how likely it is that the two variables are associated. It is based on a comparison of the observed values in the table with what might be expected if the two distributions were entirely independent. The conclusion is drawn on the basis that, if the probability is 0.05 or less, it means there is a 95% certainty that the relationship between variables could not have occurred by chance only (Huizingh, 2007:250; Saunders, Lewis & Thornhill, 2007:444). Therefore, there is a statistically significant relationship (null hypothesis is rejected) (Saunders, Lewis & Thornhill, 2007:441).

In this research, the conclusions as to whether null hypotheses were rejected or accepted were drawn by using the values of Fisher's Exact Test. Fisher's Exact Test is mainly used for very small samples (Huizingh, 2007:251; Leedy & Ormrod, 2005:274) for the following questions:

- Question 4.2 (I was generally satisfied with the way the guide presented: yes/no) with Question 4.1 (I enjoyed my experience), Question 4.3 (The experience from the guide has increased my knowledge), Question 2 (Gender), and Question 3 (Nationality).

The standardised residuals were computed to determine which cells were over-represented or under-represented in the actual sample, compared with the expected frequency. In the case where the standardised residual had a positive value (+), this meant that the cell was over-represented (meaning that there were more subjects in this category than were expected), whereas the standardised residual that had a negative value (-) meant the cell was under-represented (meaning that there were fewer subjects in this category than expected) (University of Texas, n.d.).

4.6.3.2 Independent t-test

A two-tailed test was chosen instead of a one-tailed test because the statistical hypotheses that were drawn for this study were non-directional as opposed to directional hypotheses. In a non-directional research hypothesis, the difference between groups is reflected but the direction of the difference is not specified (Salkind, 2008:126).

A t-test is used to examine differences between groups on one or more variables (Salkind, 2008:166). Therefore the t-test compares the mean values of different groups of the sample using a measure of the spread of the scores (Lee,Lee & Lings, 2008:356). The basic idea of the t-test is that, if the likelihood of any difference between these two groups occurring by chance alone is low, this will be represented by a large t-statistic ($p<0.05$) and the result would be statistically significant (Lee, Lee & Lings, 2008:356; Saunders, Lewis & Thornhill, 2007:447).

In this study, the Levene's Test results for equality of variance (which assumes that the variances in two groups are equal) were considered in the analysis. The results are

significant when p≤0.05: then the null hypothesis is not correct and variances are significantly different. If Levene's test is non-significant (p>0.05), then the null hypothesis is accepted (Field, 2005:301; Lee, *et al.*, 2008:357). Levene's Test was used to assess the following in the items for the tour guides:

- The relationship between problems that tour guides encounter with regard to interpretive delivery techniques and the needs of tour guides in connection with interpretive delivery techniques (Questions 13.1-13.12).
- The relationship between the academic qualifications (Question 3) and training needs in interpretive delivery techniques and problems with interpretive delivery techniques (Questions 13.1-13.12).
- The relationship between the question "Have you ever attended any upgrading training course on interpretive guiding since you started working as a guide?" (Question 17), and problems with interpretive delivery techniques (Questions 13.1-13.12).

When comparing two samples, or a sample and a population, the aim of hypothesis testing is to determine whether the observed differences are due to chance factors or sampling variability, or whether they are due to the action of a certain independent variable on a dependent one (Bless & Kathuria, 1993:128).

4.7 RELIABILITY AND VALIDITY OF THE SURVEY INSTRUMENTS

The concepts of validity and reliability are multifaceted. The variety of types of validity and reliability lends itself to several ways in which they can be addressed (Cohen, Manion & Morrison, 2000:105). Despite these complications and dimensions in validity and reliability, these concepts still remain a crucial part of methodology (Mellenbergh, 1999:325).

One way of ensuring the validity of tourists' and tour guides' instruments in this study was to do a pilot study (see section 4.5.3.3). The discussions and input during the pilot study aimed at ensuring the validity of the instruments. Furthermore, according to Mellenbergh (1999:325), in empirical studies, substantive hypotheses and theories are

investigated, and a study is said to be valid if the statements on the investigated hypotheses and theories can be justified by the empirical results of the study. Therefore, another way of ensuring validity in this study was to justify hypotheses and the theories of the study using both descriptive statistics and inferential statistics. Importantly, the validity of this study was further enhanced by the interview process that the researcher conducted with the officials (see Table 4.1).

The sound research procedures that were used by the researcher were intended to ensure validity, on the basis of the views of Hussey and Hussey (1997:57) that research errors and misleading measurements could undermine validity. The literature review also assisted the researcher with the formulation of items, concepts and constructs to ensure relevance and validity. With regard to the validity and the reliability in the qualitative research, it should be highlighted that the concepts of reliability and validity are viewed differently by qualitative researchers. They strongly believe that these terms as defined in quantitative terms may not apply to the qualitative paradigm (Golafshani, 2003:600). However, the validity and reliability of the interviews was enhanced by making further clarifications during the interview (first and second phases), in order to avoid misunderstandings on the part of the interviewees about what was asked.

Reliability refers to the consistency or dependability of a measure (Belli, 2009:62). There are various ways in which the researcher may ensure reliability. For instance, Babbie (1992:131) asserts that one way of handling the problem is to use measures that have proven their reliability in previous research. In this research, the literature survey assisted the researcher with solid information on appropriate measures that had been successful in conducting similar research.

4.8 SUMMARY

This chapter presented the research design and methodology that were used during the study. Both qualitative and quantitative methods were used, as explained in this chapter. Clarifications were made on the rationale for using qualitative and quantitative methods.

The sampling techniques and size, data collection methods, procedures and data analysis were discussed, with clarification of the rationale for using each of the methods in both the qualitative and the quantitative approaches. This section concluded by providing a brief discussion on the reliability and validity of results.

The following chapter (Chapter 5) focuses on the results of the empirical investigation.