Fit for Purpose: Designing Qualitative Research in Rural and Peri-urban South African Communities

Dorothy Queiros
ORCID: https://orcid.org/0000-0002-6988-5818

Abstract

Research undertaken in the field of environmental management is more often quantitative. The present research concerned the nexus between conservation and local communities in rural and peri-urban South Africa. This may yield rich data but requires new thinking on how best to gather data. Suitable questions need to be asked in an optimal way and the responses analysed to produce useful outputs. This methodological paper aimed to describe the process followed to enhance this research to be fit for purpose in these communities. Three contrasting case studies were chosen, each comprising a rural or peri-urban African community bordering three very different protected areas. In each community, the research sought to determine the influences on pro-conservation attitudes and behaviour. Few studies in this field are purely qualitative, yet this approach is valuable in investigating attitudes and behaveour. This paper covers three objectives, viz. to describe the multiple methods used and their value; explain the data analysis process employed; and highlight the research outputs to illustrate the methodology's potential. The multiple methods proved valuable in triangulating data, yet each method contributed new insights and gave different participants' opportunities to be heard. With the researcher largely removed, nominal grouping technique allowed ranking of data, while mapping revealed key insights into how communities view the adjacent protected area. Focus groups allowed discussion, probing and contrasting opinions. Finally, the data analysis and outputs provide the means to reduce data and encapsulate the communities' views. Although research is highly context-sensitive, this methodology can be drawn from for application to other settings where research is being designed for rural/peri-urban areas.

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1 Introduction

Research in environmental management is usually quantitative. The present research concerned the nexus between local communities and conservation and required a research design that would be fit for purpose in this context. Rich data can be gathered in the rural and peri-urban communities of South Africa, but methodologies need adaptation to suit the participants. Keane and Khupe (2017:11), writing about seeking an African education research methodology, express their hope that research will have a more human face in future and contend that 'greater effort still needs to be invested into developing and applying appropriate methods for research with, for, and among indigenous communities'. Motteux *et al*. (1999:2), in their research on the value and role of participatory research among disempowered communities in rural Africa, 'call for a reassessment of development research methodologies …'. These calls align with a decolonisation agenda, where research moves from being *on* or *about* participants, to research *with* participants (Jarvis 2021).

Approaches such as participatory research, action research and collaborative enquiry have broken from the mould of traditional western-derived methodologies. The methodologies falling within these approaches are often used among marginalised people groups, indigenous communities or those who have been disadvantaged in some way (Cohen, Manion & Morrison 2011; Creswell & Poth 2018) and include, among others, participatory action research (Cohen *et al.* 2011; Lune & Berg 2017), participatory rural appraisal (Chambers 1994) and transformative action research (Ramsden 2003). Based on the philosophy of community development, they involve the community from the start, with the identification of a problem through to implementation of solutions (Cohen *et al.* 2011; Kumar 2019).

Yet, research that does not fit under philosophies such as participatory research, action research and collaborative enquiry, but occurs in communities where traditional methodologies would not be the best approach, also needs to be adapted to be fit for purpose. New thinking is required on how best to gather data. Suitable questions need to be asked in an optimal way and the responses analysed to produce outputs of value. Murti, Mathez-Stiefel and Rist (2020),

in their work in rural communities of Burkina Faso, Chile and Senegal discuss the importance of the tools and methods used. They cite Limoges (1996:14-15) who maintains that knowledge production should be context-driven, '… arising from the very work of problem solving and not governed by the paradigms of traditional disciplines of knowledge'. Hamilton (2020:196), considering qualitative strategies in rural communities, appears to strongly concur, stating that 'Strategies to achieve rigor in qualitative methods should not be used as a one size fits all approach as this practice might actually diminish rigor. Among underrepresented populations, strategies should be adapted or not used at all'. Ponterotto (2013) and Keikelame and Swartz (2019) focus on cultural context, mentioning the importance of developing culturally sensitive qualitative research skills. Lee *et al.* (2015) illustrate this in their work with minority Cambodian Americans, where they follow a detailed process to develop a unique research instrument that participants would understand and that took cognisance of their socio-cultural world. Sherry *et al.* (2020:1), working with rural communities in South Africa, also highlight this, calling for '… indigenous values to replace Western ones in informing research ethics and engagement …'. Chauhan and Segal (2022) mention that poor socio-cultural adaptations of Western methods lead to ethnocentric bias and that the researcher cannot, therefore, universally apply methodological norms and guidelines.

Importantly, in any rural research, the methods need to mitigate against power imbalances and researcher bias and assumptions (Nduna 2020). Mitigation measures include methods that are: more participatory (Murti, Mathez-Stiefel & Rist 2020); unmanaged by the researcher (Reed *et al.* 2010); led by participants (Young & Barrett 2001); and facilitated by a trusted and respected local community member (Sherry *et al.* 2020). However, while the reduction of researcher influence can be sought, it is the nature of certain methods in qualitative research that the researcher forms part of the instrument (Wa-Mbaleka (2020). In these instances, through respectful interviews and genuine interest in the lives and views of participants, participants (and the researcher/s) may suspend preconceptions and stereotypical ideas (Ponterotto 2013). This in itself diminishes power imbalances.

This paper focuses on the methodology used in a study which sought to determine the influences on pro-conservation attitudes and behaviour in rural and peri-urban communities surrounding protected natural areas in South Africa (Queiros 2020).

Two research gaps shaped the methodology chosen. *Firstly* – few studies in this field are purely qualitative. While focus groups have been used

widely in conservation research (Nyamba *et al.* 2018), Bennett's (2016) review on using perceptions to improve conservation management asserts that preference is still given to quantitative methods in social sciences. This results in an incomplete picture of the multiple facets involved in conservation. He argues for a plurality of methods to provide a more holistic picture on which to base management decisions. When designing this research, the researcher performed a meta-analysis of 39 primary research articles relating to communities and conservation. Of the 39, only six were purely qualitative. Of these, none were in an African context. Furthermore, while qualitative additions are on the increase, most research testing for attitudes or pro-environmental behaviour employs traditionally quantitative measures, making use of measuring scales (Han 2014; Kopnina 2011). Yet, these are not ideal in rural and peri-urban settings.

Secondly – research in rural areas has its own complexities and needs to be re-thought. In the rural and peri-urban regions of South Africa, communities are often disadvantaged. With language barriers, different illiteracy levels and issues of trust, the researcher settled on a qualitative approach, as it allowed flexibility and fitted the participants and the purpose of the research. As contended by Maxwell (2013:3), 'Qualitative research design, to a much greater extent than quantitative research is a 'do-it-yourself' rather than an 'off-the-shelf' process … [involving] interconnection and interaction among the different design components'. Gubrium and Holstein (2014:35) call it 'analytic inspiration' or 'explanatory excitement', calling for the need to move beyond methodological divisions and restrictions. They contend that what matters is to provide understanding. In the context of communities and conservation research, the approach was novel.

An innovative multiple-method qualitative approach was therefore followed, using contrasting case studies and adapted grounded theory. This paper focuses on the methodology employed and not on the actual findings of the primary research. It therefore aims to describe the process followed to enhance the research to be fit for purpose in rural and peri-urban South African communities. The aim is articulated via three objectives, namely:

1. to describe the multiple methods used and their value;

2. to explain the process of data analysis employed; and

3. to highlight the outputs of the research to illustrate its potential to encapsulate the views of these communities.

The methodology used is depicted in Figure 1. This is followed by an explanation of the approach, paradigms and strategies of enquiry for this research; the development and piloting of the research instrument; and sampling. With this background information in place, the multiple methods used and their value, are considered. The next sections explain the process of data analysis employed and the outputs of the research. Key findings regarding the efficacy and value of the methods are then highlighted, followed by a conclusion.

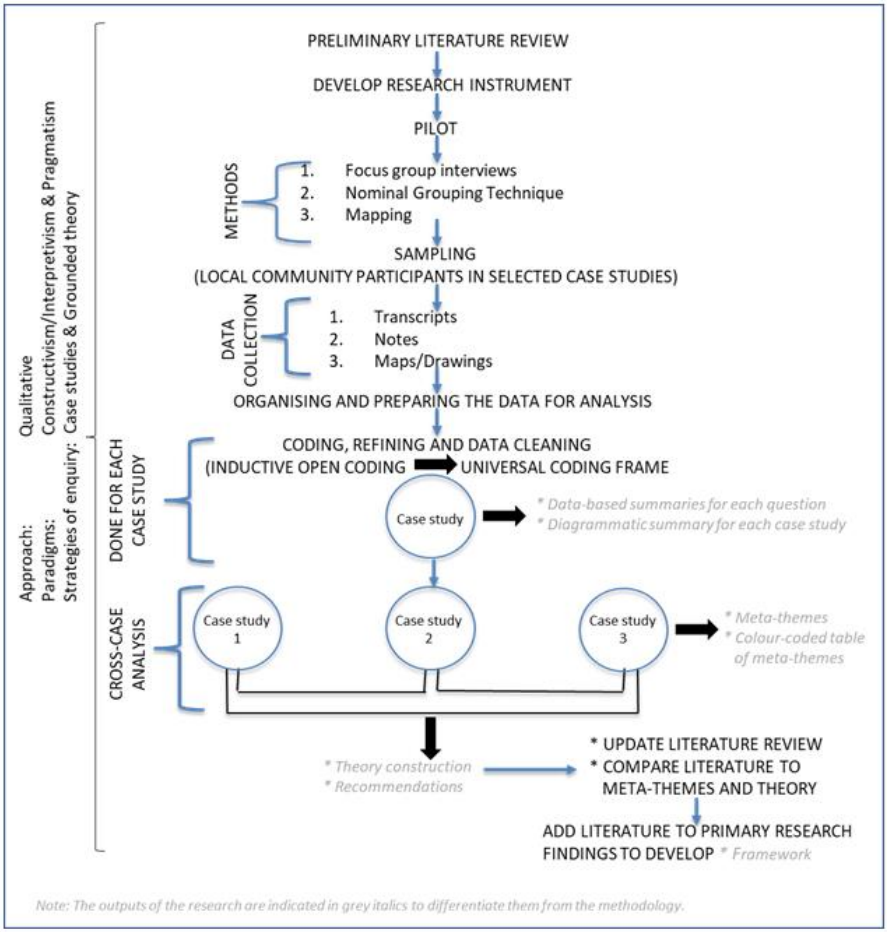

Figure 1: Research Methodology

2 Approach, Paradigms and Strategies of Enquiry

A qualitative approach is valuable to investigate a complex situation (Davies *et al.* 2014) and to understand, in their own words, participants' feelings and perceptions (Lune & Berg 2017). It also allows the researcher to approach the field without pre-defined categories per question, which would have limited participants' expression.

The research was predominantly situated in two paradigms. *Firstly* – constructivism/interpretivism, recognising that participants have multiple subjective views, discovered and explored through interaction with each other and the researcher (Creswell 2018) The researcher sought deeper meaning and multiple realities (MacQueen & Namey 2012; Myers 2020) by interacting with small samples of participants (Guba and Lincoln 1994) and following a largely inductive approach where meaning emerges from the data collected in the field (Creswell 2018). *Secondly*, the researcher borrowed from pragmatism, in the sense of using a combination of adapted grounded theory and case studies; a creative blend of research methods; and a self-designed research process to analyse, interpret and reduce data (Cohen *et al.* 2011; Creswell & Poth 2018; Saunders, Lewis & Thornhill 2009). Both the strategies of enquiry used, namely case studies and grounded theory, were equally important in executing the study and producing outputs. The use of contrasting case studies provided deeper understanding; avoided the vulnerability of single cases; and enabled comparison between cases (Miles, Huberman & Saldaña 2014; Yin 2018). In this study, the three cases (each one consisting of a community adjacent to a protected area) were specifically selected for the differences in the protected area which the community borders. These protected areas had contrasting ownership structures/management models, and were at different stages in the level of improvement in human wellbeing offered to the community.

In line with constructivist and Straussian variants of grounded theory (Strauss & Corbin 1990), a preliminary literature review was completed in January 2015 to provide broad themes (multiple lenses). From this, the research instrument was developed. After the results had been written up (in mid-2019), and the theory had been constructed, the literature review was updated to include research that had been published during the time that the researcher undertook the fieldwork (Figure 1). This interval assisted in avoiding the pitfalls of literature hampering creativity or forcing preconceived categories when in the field and during data analysis (Strauss & Corbin 1990; Thornberg & Charmaz 2014).

3 Developing and Piloting the Research Instrument

The research instrument was developed based on the preliminary literature review. The pilot study consisted of two main phases, which are outlined below.

3.1 Testing IQA/ NGT

In late 2015, the researcher accompanied another researcher to assist with Interactive Qualitative Analysis (IQA) (Northcutt & McCoy 2004) within a rural community outside Phinda Private Game Reserve in the province of KwaZulu Natal. Though IQA differs somewhat from Nominal Grouping Technique (NGT) (Chapple & Murphy 1996), which is one of the methods described later in this paper, it has similarities, and was hence a valuable trial-run which guided the design of the present research. IQA is an innovative methodology whereby participants are actively involved in gathering data by responding to an 'issue statement' – first through a brief discussion in groups and then by silently brainstorming and independently writing their reflections regarding this statement on Post-it notes. The notes are then pasted onto a large piece of paper for all to see. Participants then analyse the notes by discussing the results and identifying emerging themes/categories and relationships between themes (Bargate 2014).

The lessons learnt are outlined below and the adaptations made for this present research are indicated in italics:

- In this rural community, IQA was quite challenging, but participants became accustomed to the process. *The researcher decided to ask direct questions rather than use the 'issue statements' of IQA. Time was also allowed for participants to understand the question and seek clarity.*

- When participants discussed and clarified notes/ideas as a group before sticking the notes in the front of the venue, little was achieved and it considerably lengthened the process. *Therefore, in this work, participants were not divided into groups, but generated ideas on notes and pasted them up immediately.*

- While the idea was to generate ideas as individuals, some participants chose to first discuss their idea with a fellow participant or have someone

write for them. *Hence, when the researcher did her fieldwork, she allowed this adaptation, as it increased the confidence and participation level of women in particular, as well as those who were illiterate or more hesitant to put pen to paper. This adaptation was valuable in enabling the voices of these participants to emerge.*

- With IQA, the entire group should categorise the notes into themes once they are pasted together on a large piece of paper. This proved complex, with little progress being made as 20 people clustered around. An adaptation was therefore immediately implemented, *with two volunteers being asked to sort ideas into categories and then seek group consensus. In the present research, this approach was replicated, followed by voting on the importance level of each category.*

- IQA was demanding and time-consuming. *In her own study, the researcher therefore limited the use of an IQA/NGT approach to questions where multiple answers, categories and importance levels were required. It was also realised that it would be too complex for participants to analyse the data themselves, beyond creating categories and naming them.*

- After this session, clarification on some notes written in IsiZulu was sought. This highlighted the importance of clarifying unclear notes before participants left. *In the present research, the researcher therefore employed highly literate local translators, who could translate immediately, so that, if necessary, notes could be clarified while participants were present. This needed to be done sensitively and unobtrusively, so that participants were not made to feel that a particular answer was wrong.*

3.2 Testing the Questions and Multiple Methods Approach

The research instrument was first checked by two subject specialists in environmental management and tourism respectively, and two professors proficient in qualitative analysis, and their feedback was incorporated. To test the clarity of questions, a pre-pilot was undertaken in the form of individual interviews with four participants living on farms within Dinokeng Game Reserve, in the province of Gauteng. This was invaluable in terms of what additional questions were required, and how questions could be asked in a more optimal way.

The initial plan was for Kekana Gardens community, bordering Dinokeng Game Reserve, to form the formal pilot, undertaken on 4–5 December 2015. Logistics proceeded well in terms of participants self-dividing into two groups and one group having the focus group interview while the other drew their map (see 'Focus Group Interviews'). In NGT, participants generated many ideas, ordered them and enjoyed it. Clarification of notes was done straightaway with the translator's assistance. Participants managed the questions well, and the variety of methods aided triangulation. It was successful and produced such rich data, that it was incorporated as an official case study. The only change was removing the question: 'Draw your interpretation of your relationship with this protected area'. This proved to be too abstract and confusing, yielding little different from the other mapping exercise.

4 Sampling

4.1 Case Study Sampling

There is no fixed rule regarding the number of sites and participants required in a case study, and no ideal number of cases (Creswell 2018; Kumar 2019). For qualitative studies Creswell (2018) recommends four to five, while Palmberger and Gingrich (2014) suggest two to four cases, especially if the aim is to do cross-case analysis. Due to the in-depth analysis process for each case study, three contrasting cases were chosen for this work. This contrast enabled the researcher to determine how very different contexts influence attitudes and behaviour related to conservation, and to culminate in comprehensive outputs. The location of the three case studies within South Africa is indicated in Figure 2 and their contexts are illustrated via photographs in Figure 3. They are:

- Kekana Gardens community, bordering Dinokeng Game Reserve (Gauteng province);
- Khanyayo community, the closest village to Mkhambathi Nature Reserve (Eastern Cape province); and
- Mnqobokasi community, adjacent to Phinda Private Game Reserve (KwaZulu Natal province).

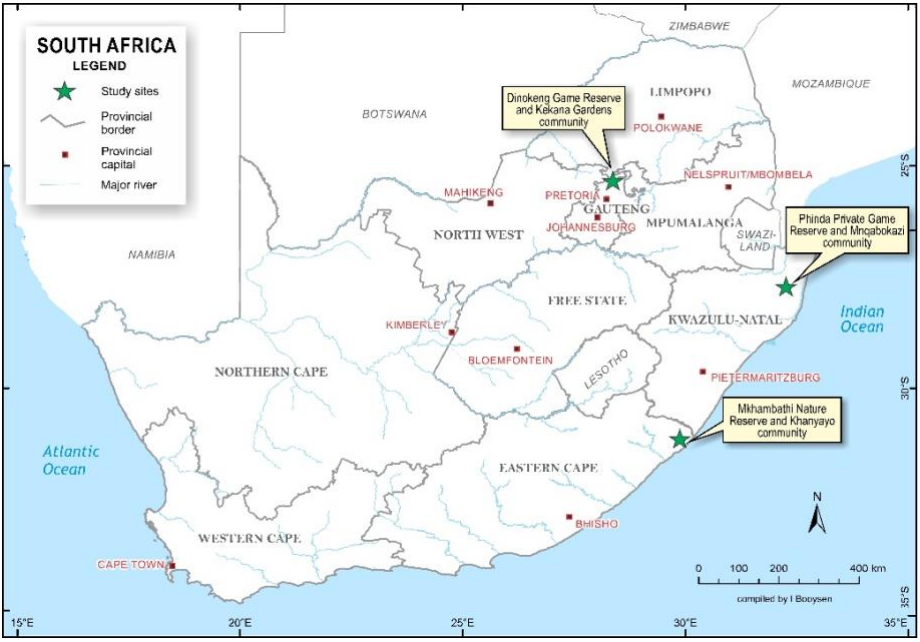

Figure 2: Location of Case Study Sites Within South Africa (Author's own figure)

4.2 Within-Case Sampling

The choice of participants within each case study was not driven by representativeness (Miles *et al.* 2014). It was more important to explore the phenomena in varying ways with different people who had knowledge of the phenomena, than to have a large number of participants (Miles *et al.* 2014; Rapley 2014). Non-probability purposive sampling was utilised. The focus group interviews and mapping were undertaken with two focus groups, aiming at ten participants per focus group. NGT was carried out with all participants together in a larger group (i.e. aiming for 20), aligning with Creswell (2018) and Northcutt and McCoy (2004).

In research in rural areas in South Africa, it is protocol (and considered ethical) to work through community leaders. This is one of those pragmatic considerations relating to access to sites or hard-to-reach people, which Rapley (2014) contends do have their place. In order to gain a deep understanding of

a community, trust is important (Alvial-Palavicino *et al*. 2011; Denyse, Martin & Stanton 2022; Hamilton 2020), and working through traditional community structures or tribal authorities provides some legitimacy to the presence of the researcher (Chauhan & Sehgal 2022, Sherry *et al.* 2020).

Figure 3: Rural and Peri-urban Contexts of the Case Study Sites

Working with the protected area management, community leaders were approached. These were the leader of the block group system in Kekana Gardens; the chief of the Khanyayo community; and the chairperson of the community trust in the Mnqobokazi community. They were each provided with the criteria for selecting participants. Through the open invitation of the community leader to those fitting the criteria, various sectors of the community

were present. Bias that could emerge from the community leader being involved, was mitigated due to the open invitation. Furthermore, at two case study sites the complexities of rural research prevailed, and the group initially invited were not able to attend in full. Snowball invitations by several participants to others then further reduced the chances of bias. In all three cases, the final group comprised a balanced representation of ages, gender and positions in society. Several participants had limited grasp of English and others spoke only in their mother tongue (Setswana, isiMpondo and isiZulu at the three case studies respectively). Data was gathered at a venue convenient to participants and within walking distance, as most participants did not have transport. Fieldwork at the first two case study sites took place in December 2015 and at the third site in August 2017. The sample sizes in the three cases were 13, 19 and 24 respectively. In all three cases, the sessions with community members took approximately four hours, which included a tea break. At the end of the session, lunch was provided.

5 Data Collection via Multiple Methods and the Value of These Methods

Leaning towards the constructivist and Straussian variants of grounded theory, it was acknowledged that the researcher influences the research process (Charmaz 2017; Thornberg & Charmaz 2014), although measures were taken to reduce this. While the use of multiple methods within qualitative studies has received less attention than in the quantitative realm, there are still several options available. Grounded theory, too, is not prescriptive in terms of data collection methods (Thornberg & Charmaz 2014). The researcher chose multiple methods to reduce vulnerability and bias that arise with a single method; decrease the researcher's influence (MacQueen & Namey 2012); view the topic from different perspectives and gain richer understanding (Cohen *et al.* 2011); create new knowledge (Campbell 2020); and aid triangulation (Nyamba *et al*. 2018; Saunders, Lewis & Thornhill 2016).

In line with constructivism, the multiple methods chosen encouraged participant involvement and joint construction of shared knowledge. Ideas were gleaned from IQA (Northcutt & McCoy 2004), NGT (Chapple & Murphy 1996), Future Search (Weisbord & Janoff 2000) and World Café (Brown & Isaacs 2005) techniques. Figure 4 contains photos of the different methods used, after which a description and the value of each is provided, which addresses Objective 1.

Figure 4: Multiple Research Methods with Rural and Peri-urban Participants[1]

[1] Ethical clearance was granted by the Research Ethics Review Committee of the College of Agriculture and Environmental Sciences at the University of South Africa. Participants are assured anonymity, hence their faces are not shown in the photographs.

5.1 Focus Group Interviews (FGIs)

FGIs were chosen because they are useful for small group in-depth discussion, during which a wider and deeper range of responses could be obtained relatively conveniently (Cohen *et al.* 2011; Nduna 2020) from a variety of participants. Via this discussion, feelings, opinions, beliefs and attitudes could be assessed (Walden 2012); the way participants made sense of the topics as a group could be established (Chauhan & Sehgal 2022); consensus or non-consensus could be ascertained (Barbour 2014a; Coles, Duval & Shaw 2013); and the researcher could probe further where required (Walden 2012) to encourage participants to elaborate and to demonstrate that their opinion was valued (Hamilton 2020).

The researcher first explained what the research was about, assured them that individuals would remain anonymous, and informed consent was signed. Participants then self-divided into two focus groups, with each group being given a different coloured sticker. While one group had the FGI, the other withdrew to another venue for mapping (see 'Mapping' below), and later swapped. The mapping group could not hear the responses of the interview group.

During the FGI, the researcher played the role of facilitator. The local translator played a key role, and his/her presence also minimised the effect that the researcher could have on moulding the data, an aspect about which Barbour (2014a) cautions researchers. The interviews were about quality as opposed to quantity (Hamilton 2020). Easy questions were asked first, to create a relaxed environment of rapport and support. As well as probing further where required, the researcher made sure to not only focus on the more articulate or verbal in the group, but deliberately drew out the quieter members (Mitchell *et al*. 2018). Key principles in conducting these interviews were to affirm, respect and value the participants and their inputs (Denyse *et al.* 2022); to listen carefully; pay attention to non-verbal cues, both from participants and from themselves; be flexible regarding the flow of conversation; and focus on building connection (Nyamba *et al*. 2018). Due to the difficulty of returning to the same focus group to validate any unclear components of the interview, where required, the researcher followed the approach of Hamilton (2020) who sought clarity and validated emerging findings during the interview. The use of two focus groups in each case provided more opportunity for patterns to emerge.

In each case study, both FGIs were audio-recorded and the researcher also made notes of answers, as well as particular emotions observed, that would not emerge from transcripts.

5.2 Mapping

In this research, mapping refers to joint construction of a map drawing by participants. Apart from Miles *et al.* (2014), none of the methodology texts consulted mention the use of pictures/maps drawn by participants as a data collection method. Coles *et al.* (2013), however, mention the emergence of innovative visual data such as drawings; and Darbyshire, MacDougall and Schiller (2005), Miles *et al.* (2014) and Young and Barrett (2001), refer to studies where children drew maps or pictures. The researcher only found one source that mentioned mapping and drawings with adults, and this was in the Peruvian Amazon (Wali *et al.* 2017). Judging by the paucity of references to drawings/mapping as a method of data collection (in both methodological texts and research articles), the researcher wanted to test the efficacy of this innovative technique with adults in rural and peri-urban settings of South Africa.

Prior to commencing the FGI with the other group, the researcher and translator asked the mapping group to draw a map of the protected area and their community. Participants were given a flipchart page, coloured pens and crayons. No further guidelines were given. They were free to use words, pictures or both to generate how they saw their community in relation to the protected area, thus allowing free expression. Neither researcher nor translator were present during this exercise, which further decreased the imprint of the researcher.

Darbyshire *et al.* (2005) (who used mapping with children in a multiple method study), argue that it provided another avenue whereby their voices could be heard. The researcher concurs – in this study, different individuals responded differently to each of the multiple methods used. This provided opportunities for various participants to contribute and added to the richness of the findings. Mapping provided insight into how participants collectively viewed the protected area and their community; how much they knew of the protected area in contrast to their community; and what they knew about the protected area (for example, vegetation, animals and boundaries). Furthermore, while the maps certainly provided new data, they also confirmed data from the other methods.

5.3 Adapted Nominal Grouping Technique (NGT)

After the FGIs and mapping, NGT was undertaken with both focus groups combined. NGT is a consensus method helpful in synthesising individual opinions, without the limitations of group interaction where certain individuals

may dominate (Van Teijlingen *et al.* 2006). NGT was chosen for questions where the researcher wanted to generate multiple answers and have these categorised and ranked via voting. The researcher therefore used this method to determine the benefits and losses that participants had experienced due to living near a protected area. The literature review, conducted prior to the primary research, had revealed that little research had focused on which benefits are more important to encourage conservation (Mbaiwa and Stronza 2010). In addition, only a few studies gave focused attention to losses, yet an exploration of both benefits and costs is vital to understand the attitudes of local people to a nearby protected area (Allendorf *et al.* 2017; Sachedina & Nelson 2010). NGT could therefore assist in addressing these gaps.

The local translator played a key role in managing this process, thus reducing researcher influence. Based on lessons from the pilot phase where IQA was tested (these were outlined earlier), this research adopted a simplified version. Participants were provided with several sticky notes and asked to generate as many answers as desired. These were single words or a sentence, and in their own dialect if preferred. If participants felt the need, they could confer with a fellow participant or have someone write for them. As individuals, they then pasted the notes on a large flipchart page. The two volunteers then stepped in, and meaningful discussion ensued as participants grappled to place notes into categories and jointly seek consensus. Participants then named each category, tallied its notes and discussed whether they agreed with the order of priority (according to the tally). If not, a vote was taken.

During note generation and ordering into categories, the researcher stood out of the way and allowed participants to work independently (Weisbord & Janoff 2000). At no time did she move any of the notes (Weisbord & Janoff 2000). If any assistance was required during the ordering of categories, the researcher let the translator, as a fellow community member, facilitate in mother tongue. This was to reduce the influence of the researcher as far as possible. The translator also translated notes into English on the spot.

The researcher has not found evidence of NGT being used in community and conservation-related research solely with rural or peri-urban participants. However, a simplified version was found to be highly effective. It promoted confidence and enabled participants to feel safe in expressing their realities. Some participants, who had been less active or silent in the focus groups, found their voice in this more alternative research method. For example, being able to seek help from a fellow participant sometimes increased the input of women and the less-literate. The method also allowed movement of

participants which 'change[s] the shape, flow, energy and possibilities in the room' (Weisbord & Janoff 2000:57). NGT made it possible to rank benefits/ losses in their order of importance to participants. This was valuable, as the literature review had identified a dearth in this type of study in the context of communities and protected areas (Stronza & Gordillo 2008), apart from a quantitative classification of benefits and threats by De los Angeles Somarriba-Chang and Gunnarsdotter (2012).

A limitation of NGT, however, is that the researcher could not probe further into a note, as one did not want to single out certain individuals, and there were time constraints (the research took a full morning of participants' time). However, as explained earlier, note clarification was done unobtrusively with individuals where required, as a form of member checking.

6 Data Analysis Process

The researcher found that qualitative methodology texts seldom venture beyond describing the methods and different approaches to coding. There is a lack of guidance on how to analyse multiple methods and reduce the data (Dierckx de Casterlé *et al*. 2012; Pratt 2017). In this sense, it was a case of forging one's own way, as per the most pragmatic approach and being guided by what the data were saying.

To manage data, the researcher used the software program, Atlas.ti. Due to the complexity of a multi-case, multiple method study, the software was invaluable in coding and organising/retrieving and presenting different configurations of data. With hundreds of documents and over 1000 quotes, Atlas.ti facilitated comparison across questions and case studies.

This current section will address Objective 2 of this paper, explaining how the data was reduced to encapsulate the views of the participants. It consists of three steps, namely organising and preparing the data; coding, refining and cleaning the data; and initial write-up.

6.1 Organising and Preparing the Data for Analysis

Recordings of FGIs were fully transcribed by a professional company, and recordings and their transcriptions then imported into Atlas.ti for checking. Using the programme's Association Editor, anchors were inserted within the audio-recording, enabling the comparison of a textual excerpt with its

corresponding audio. Specific quotes could thereby be played back during coding, increasing accuracy.

All notes produced during NGT, with their translations, were double-checked after the event with a different translator, and resulted in the coding for some notes being changed. Each note was typed up as its own primary document, and imported into Atlas.ti. Finally, each map was scanned and also imported into Atlas.ti.

6.2 Coding, Refining and Data Cleaning

6.2.1 Data Coding

Coding is a key part of analysis (Miles *et al.* 2014) to reduce and reorganise data into themes (Kumar, 2019). MacQueen and Namey (2012:279) refer to 'a code [as] a formal rendering of a theme', while Saunders *et al.* (2009) speak of developing categories which are attached to meaningful chunks of data. This constitutes thematic analysis, which in contrast to content analysis, is more complex. 'Thematic analysis moves beyond counting explicit words or phrases and focuses on identifying and describing both implicit and explicit ideas …' (Namey *et al.* 2008). Aligning with grounded theory and constructivism, data analysis was open and inductive, with codes emerging from the data itself (Thornberg & Charmaz 2014). Descriptive coding was used, where the code label describes the basic topic of the quote (Miles *et al.* 2014). This type of coding is suitable for social environments and where a wide variety of data collection methods is used (Miles *et al.* 2014). In this research, the themes were the headings to a group of codes or sometimes a stand-alone code. The screen-shot from the code book in Figure 5 shows the following as an example: 'Lack of access to natural resources' is a theme under the NGT question on losses (L), which has several codes within it, while 'Lack of information/ contact' is a theme as well as a code (without sub-codes). The same applies to the themes/codes emerging under the FGI question on what would make people more positive (MP) towards the protected area, for example, the meeting of 'Basic needs'. At other times, in the discussion or results, a theme might emerge by combining various codes, which were not structured hierarchically within the coding system. Hence, the term 'theme' is used flexibly.

No literature was referred to during the coding process and analysis was supported by actual data, in the form of verbatim quotes. Direct quotes, as aptly stated by Saunders *et al.* (2009:535) are a 'powerful way in which you

can convey the richness of your data. It is the qualitative equivalent of tables and graphs'.

The transcripts for the FGIs as well as the maps, also lent themselves to coding. For coding NGT, there was no previous research against which to benchmark. This is because, if NGT is done fully, as opposed to the simplified version followed in this research, participants do the analysis themselves (but not via coding). Due to the lessons learnt when testing NGT, it was decided that participants would not analyse their own data beyond categorising it and naming each category. Each note, however, could be coded, and it was therefore decided to use coding to chunk data segments (quotes) for all three methods: in FGI transcripts it was a sentence/few sentences that represented a certain concept; within maps, coding involved chunking sections of the drawing; and in NGT notes, the whole sentence/word would be coded. Through this process, a hierarchical universal coding frame was created. Within this coding frame, each question asked of participants had its own codes. Finally, as coding progressed, Atlas.ti's comment tool was used to write-up working definitions of codes, which provided consistency.

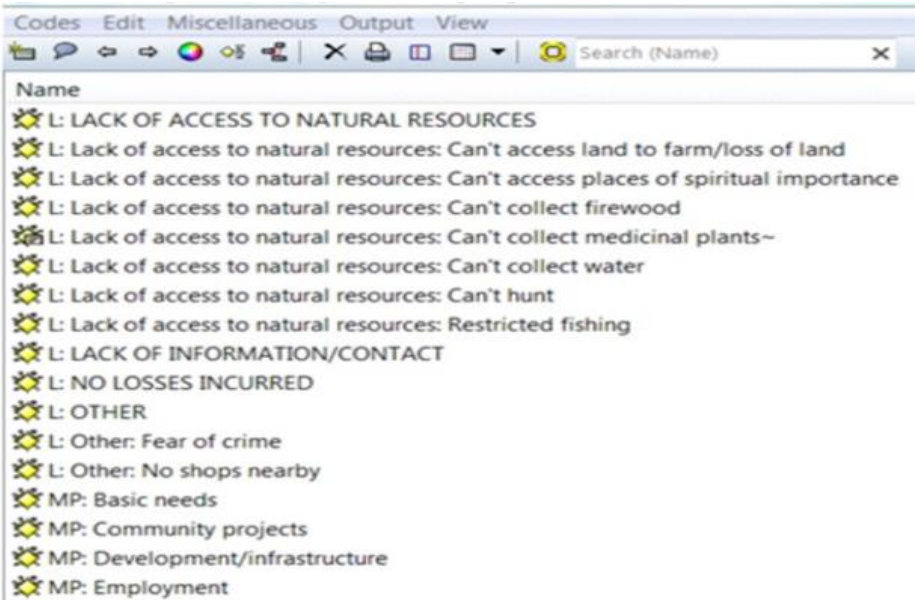

Figure 5: Examples of Codes/ Themes

6.2.2 Coding Rules and Refinement

To further aid consistency and transparency, a table was drawn up with the data cleaning process and coding rules. Schreier (2014) in her work on qualitative content analysis, calls these 'decision rules', while MacQueen and Namey (2012) refer to an 'audit trail'. As coding occurred, it was checked against this table, as well as against the code definitions.

The researcher also compared data with data, codes with other codes, and data with the assigned codes (Thornberg & Charmaz 2014) to interrogate and refine coding further. In so doing, some codes merged within others or expanded if a particular category/theme needed further sub-division (Nyamba *et al.* 2018). In most cases, refinement resulted in fewer codes with more quotations under each one, as opposed to more codes containing fewer quotations.

6.2.3 Data Cleaning

After coding and refinement, the coding within each FGI transcript and NGT note was checked to see if data cleaning was required. Data cleaning involved two main steps:

Re-checking Coding within Transcripts and NGT Notes

For cleaning FGI data, the researcher listened again to all FGI recordings to recognise the voices of different respondents to ensure they were not coded again later regarding the same point. For each case study, the researcher re-read all the transcripts to ensure that text had been consistently coded. For NGT notes, quotes were re-read to determine if the correct code had been used. This was very useful and several changes were made to coding during this phase to ensure consistency across case studies.

Drawing up Quotation Lists per Code

For each question, a list of all quotes relating to all the codes for that question (regardless of the data being collected via FGI or NGT) was drawn from Atlas.ti. These documents were saved as 'Code query output documents'. In Atlas.ti (version 7) the quotes are ordered according to the document, for example, the quote used in Primary Document 1 appears first in the list. However, for this analysis, quotes needed to be ordered per code, and the researcher therefore cut and pasted quotes to achieve this. From these documents, quotes could be analysed per code, and those quotes best encapsulating the findings were copied from there. Where appropriate, to accentuate patterns, the quotes

per theme were counted and presented via tables. From these documents and tables, the findings were analysed.

This laborious cleaning process was highly necessary for data integrity, consistency across case studies and the level of confidence with which the researcher could proceed to the next analysis stage. This process aligned with Schreier (2014) who supports an iterative systematic process – checking coding, repeating steps and modifying the coding frame as one progresses. By so doing, rigour was enhanced (Hamilton 2020).

6.3 Initial Write-up

Within each case study, the results were written up question-by-question, highlighting pertinent themes, grouping several codes together if a prevalent theme was noted and, each time, supporting the findings with quotations. The researcher also undertook some cross-question analyses within each of the case studies, whereby the data for certain questions were compared to see if patterns emerged.

7 Outputs of the Research

This section also forms part of analysis – reducing the coded data to generate meanings, patterns and relationships. In this regard, Namey *et al.* (2008) state that 'data reduction is … a form of analysis that sharpens, sorts, focuses, discards and organises data in such a way that 'final' conclusions can be drawn and verified' (p. 139). Similarly, Saunders *et al.* (2009) refer to recognising relationships, and ultimately drawing conclusions. This section addresses Objective 3 by focusing on the further analyses undertaken to produce various outputs. It does not aim to present actual findings but illustrates the potential of the methodology and the richness that can emerge from the use of multiple methods with rural and peri-urban participants.

Figure 1 illustrates the analysis steps diagrammatically, with the outputs indicated in grey italics. Each of these are briefly discussed in turn below.

7.1 Data-based Summaries for Each Question

Barbour (2008) cited in Barbour (2014b), mentions that the role of the researcher is to provide an overview and transcend the voices of individuals

and groups. To do this, at the end of the analysis for each question, the researcher stepped back from the detail to ask: 'Viewed in its totality, what is the essence of the participants' answers to this particular question?' A textual data-based summary was then created for each question. For the NGT questions on benefits and losses, tables were created which showed the order of the ranked benefits/losses. It is very helpful for protected area management to understand which benefits and losses local communities perceive to be the most important.

7.2 Diagrammatic Summary for Each Case Study

The question summaries were then used to build a diagrammatic summary at the end of each case study. This summary provided the overall context in terms of level of positivity towards the protected area (moderately positive, positive or very positive), followed by a listing of the reasons for positivity and the reasons for negativity towards the protected area. The aspects identified in the research that could increase positivity in future were also listed. Finally, the diagram incorporated a summary of the main constraints identified for each case study. The analyses were performed in exactly the same way for each of the three case studies.

7.3 Meta-themes and Colour-coded Table of Meta-themes

Cross-case analysis reduced the data further. Comparison between cases enables one to extend 'beyond the particularities of an individual case and to reach higher levels of identifying similarities, commonalities, and differences through careful abstraction' (Palmberger & Gingrich 2014:97), and to deepen understanding and explanation (Miles, Huberman & Saldaña 2014). Using the above-mentioned summaries, together with the data tables, the findings from the three cases were compared to extract the most pertinent influences on pro-conservation attitudes and behaviour. This resulted in the identification of meta-themes. Meta-themes transcend the codes, are at a higher level of abstraction (MacQueen and Namey 2012) and refer to the most important issues emerging (Yin 2018). At this point, the researcher compared her findings with those emanating from previous research conducted by others. The meta-themes were also illustrated in a colour-coded table (each meta-theme having its own colour) and hence, at a glance, one could see the prevalence of each meta-theme.

7.4 Theory Construction and Recommendations

This research involved case studies and a variant of grounded theory, both of which were equally important. Both a case study design and a grounded theory design aim to develop theory (Darke, Shanks & Broadbent 1998). Therefore, to consolidate the primary data, the meta-themes identified during cross-case analysis were then used as building blocks for constructing a theory grounded in the data gathered (Cohen *et al.* 2011; Strauss & Corbin 1990) – a middle-range substantive theory. This was presented as a diagram with its parts/ categories as well as the interconnections/relationships between them (Merriam & Grenier 2019). The parts and interconnections will differ depending on the context of the research. This research, in the context of communities and protected areas, had separate parts for benefits identified, losses identified, facilitators and detractors. These four were all found to influence the relationship between communities and protected areas. In addition, there was a section for the elements required to increase positive attitudes. All the above-mentioned parts were found to influence pro-conservation attitudes and behaviour. Reflecting on this stage of consolidating data, Coles *et al.* (2013:179) draw attention to the 'take-home messages' and Creswell (2014) mentions the lessons learnt. The researcher therefore used this theory to capture the take-home messages/ main lessons. The meta-themes were also used to develop recommendations for both protected area managers and local communities, to assist in the practical implementation of the theory.

As mentioned earlier, the literature review was updated after theory construction (Figure 1). The researcher then returned to the cross-case analysis findings and the theory – comparing them to existing research.

7.5 Framework

To broaden applicability, the final step of analysis was to combine the theory (based entirely on primary data) with existing literature to produce an integrated framework which encapsulated the positive influences on pro-conservation attitudes/ behaviour (Queiros 2022). Sabatier (2007) in Nilsen (2015) defines a framework as an overview of concepts and the relations between them that are presumed to account for a phenomenon. In the context of this research, the framework identified the different stakeholders involved in the relationship between communities and protected areas. It also summarised the different aspects that influence community beneficiation – providing a list of

tangible benefits, intangible benefits and other internal influences; as well as beneficiation principles (the literature review had identified that there is less focus on non-economic/intangible benefits). The importance of these emerged via this qualitative research and this was evident in both the framework and the theory. The framework also presents the conclusion that benefits can generate pro-conservation attitudes, but the next step, to pro-conservation behaviour, is harder to prove. The framework is a tool that can be used by relevant stakeholders to improve the relationship between protected areas and the adjacent local communities.

8 Key Findings

In drawing the paper to a close, this section highlights key findings regarding the efficacy and value of the methods employed to create favourable research environments in the rural and peri-urban South African context.

Objective 1 of this paper was to describe the multiple methods used and their value. Methods of gathering data should fit the purpose. To hear the voices of local communities in the rural or peri-urban environments of South Africa, research methods needed to be adapted and customised. Methods that involve interaction and joint consensus align with the African ethic of interdependence and connection (Keikelame & Swartz 2019) and are therefore valuable in the African context. Nyamba *et al*. (2018) and Hamilton (2020:198) outline another key consideration in rural research, namely the 'burden of the research to participants' and fatigue. While the present research took a whole morning of participants time, the variation of methods decreased the intensity, for example mapping under a tree away from the researcher's gaze or moving around during the process of NGT and contrasted with the type of concentration required during the focus group interviews. With the length of time required, sharing a tea break as well as lunch was important. In addition, Denyse *et al.* (2022) view these as opportunities to promote connection, which is important in qualitative research.

Pilot testing of IQA in a rural community was invaluable as the researcher then simplified and adapted the process to suit the participants, who were all new to this method. The value of NGT was the production of multiple answers, which could then be categorised and ranked. Once participants were accustomed to the method, they warmed to it and engaged enthusiastically. Researchers could consider using the first question as a 'practice round' – asking something easy. NGT was found to increase the confidence of certain

participants, as less-literate participants could seek assistance from a fellow participant in putting pen to paper, and there is a degree of anonymity once all the sticky notes are combined on the flipchart page. The main role played during the NGT by the local translator in each case study was valuable as it distanced the researcher from the process and enabled the clarification and translation of notes to happen on the spot. The two volunteers managing the classification and voting process meant that this step of data analysis was participant-derived. NGT certainly has potential to glean valuable data in rural and peri-urban communities, but no evidence could be found of its use in the context of community and conservation-related research.

Mapping was a novel concept in the rural and peri-urban context of community/conservation research and proved to be effective in revealing how much participants knew about the protected area in contrast to what they knew about their community, and how they viewed the protected area. It provided space for individuals who were more comfortable contributing in a small group away from the eyes of the researcher and facilitator. In some groups, all participated actively, while in other groups, they directed one or two people to draw in what they wanted. Most maps had a variety of styles, indicating that several participants worked together to produce their map.

The FGI questions elicited multiple perspectives from a variety of participants, with the space to draw out the more reserved participants, and probe further where required. The researcher also found that it encouraged interactive discussion which revealed complementary and contrasting opinions. In local communities in Africa, where relational links and in-depth discussions form a key part of local culture, data generated collectively through FGIs is valuable. Chauhan and Sehgal (2022) and Nyamba *et al.* (2018) caution that researchers should acknowledge the data as shaped by the relationships between participants and not as a summary of individual narratives. This includes the value of the group identifying an input that they perceive as an exaggeration or as not being representative of the larger group (Nduna 2020). FGIs, when conducted sensitively can be inclusive, affirming and honouring of participants (Denyse *et al.* 2022). While in this research, the focus groups were mixed, in other socio-cultural contexts, the researcher may deem it culturally sensitive to have men and women in separate focus groups (Nduna 2020). Having a local translator, who played a key role in the FGIs is invaluable, as they understand the local social and conversational norms in each community.

The different methods allowed the various participants the opportunity to be heard (enabling inclusivity as well as different forms of interaction). This

had the advantage of improving the confidence of participants as each one could contribute, with some clearly 'finding their feet' in one or more of the methods. The translator, who was well-versed in local norms and culture, and hence sensitive to these, was an important part of the research in the way he/she translated and in largely managing the NGT. Cumulatively, the methods resulted in rich data on the influences on pro-conservation attitudes and behaviour. The methods aided triangulation and confirmation of findings, but each one also added its own value, for example mapping revealed collective spatial perceptions, NGT enabled joint ranking, and FGIs produced depth and insight into attitudes and behaviour. Moreover, two of the methods (NGT and mapping) involved group participation and minimal researcher influence, which provided the space for participants to freely express themselves. These two, together with focus group interviews where meaning was constructed jointly between the researcher and participants, added balance. With the difficulty of returning to the communities and re-constructing the group of participants, member checking had to happen on the spot, another required deviation from the norm. Regarding the methods, a final cautionary note regards the importance of recruiting slightly more participants than required, as life inevitably intervenes and some participants may not be able to attend.

The method of analysis should also be fit for purpose. Through the analysis of answers to a variety of questions posed via the three methods, a rich picture was built of the various influences on pro-conservation attitudes and behaviour of the selected rural and peri-urban communities. This involved a series of set steps. Objective 2 set out to explain this process of data analysis. How to do qualitative analysis is often a complex series of discoveries and decisions as the data unfolds and it becomes clearer how best to analyse and present it. This is an area where more support for novice qualitative researchers is required. Nyamba *et al*. (2018) highlight this gap, contending that researchers do not adequately report on the methodological process, from planning through to data analysis. While qualitative research may often be a 'do it yourself' process, having a structure or process as a guideline could be helpful. This was the purpose of the second objective.

Finally, Objective 3 of this paper briefly highlighted the outputs of the research to illustrate its potential to encapsulate and present the views of these communities. The multiple methods and the analyses resulted in a variety of outputs that have value in the field of environmental management. The outputs demonstrated some overlap with existing literature, but also some interesting new insights such as the importance of local people feeling a sense of responsi-

bility towards the protected area, the importance of simply being kept informed of what is going on within the protected area, and the necessity of creating opportunities for local people to visit the parks. The outputs are also a major component of reducing large amounts of data into formats that are useful, refined and understandable. The guidelines and framework in particular, constitute practical tools that can be used by protected area management. The various outputs could be of value to qualitative researchers who can then 'envisage' a concrete end point/output that illustrates their findings.

The methodology can also be transferred to other contexts where researchers are involved in rural and peri-urban research. For example, a researcher wishing to determine ranking/order of importance of products in a marketing study, could test and use adapted NGT, as this research has proved its viability. Business managers wishing to determine the perceptions of community members on a particular topic, can use mapping/pictures to determine what is and is not known, and so forth.

9 Conclusion

> When a method steps into new socio-cultural settings … it need not be guided by existing codified practices, nor aspire to achieve idealized paradigmatic versions that guidebooks often portray …. Research across varied socio-cultural contexts … will create authentic indigenous knowledge only when our methods remain flexible to assimilate the needs of the setting (Chauhan & Sehgal 2022: 15).

This work provides an example of the use of qualitative mixed methods in the South African rural and peri-urban context, where data gathering is complex and standard methods cannot merely be replicated in the target communities. While certain methodologies such as participatory action research and participatory rural appraisal work well in rural and peri-urban settings, it appears that the adaptation of standard methods for these settings has received less attention. Qualitative multi-method research is highly context sensitive and therefore needs to be uniquely constructed for each particular research project. This paper does not therefore claim definitive answers, but seeks to encourage exploration of methodological adaptations. This is an area for future research as more documentation of adaptations of existing methodologies in harder to reach research settings will aid qualitative investigations. This paper

aimed to describe the process followed to enhance this research to be fit for purpose in its unique context. The focus is on the qualitative methodology and not on the findings from primary data collection.

With few studies in the field of pro-conservation attitudes and behaviour being purely qualitative, practitioners and researchers are possibly seeing an incomplete picture of the multiple facets involved in conservation. Perhaps qualitative research is better suited to rural and peri-urban research in South Africa, and can contribute new insights.

In less-chartered territory, testing, piloting and adaptations to Western methodologies are vital. Language barriers, cultural barriers, various literacy/ illiteracy levels, issues of trust, power imbalances and researcher influence, all need to be considered. Making adaptations and customising so that participants are at ease and offering various channels through which to hear the voices of different personalities, creates trust and shows respect to participants.

The resultant innovative multiple methods aided data triangulation, with each method adding value in its own right. Moreover, the step-by-step explanation of the data analysis process could assist other qualitative researchers, who, like this researcher, would not have minded more 'concrete' guidance in terms of the analysis on the qualitative journey. This too is an area for future research. Finally, the various outputs that were briefly outlined show the potential of the methodology to reduce a large body of data, yet capture participants views into formats that are simple, refined and useful to stakeholders. These 'end points' of the qualitative journey could assist other researchers.

While acknowledging that each research project needs to be uniquely constructed for its context, the methodology outlined in this paper could be drawn from for other rural/peri-urban research in complex settings which needs to be adapted to be fit for purpose. Whatever the context, qualitative research allows the flexibility to ensure fitness for purpose. Who are the participants whose voices must be heard? How can the researcher best hear these voices? How best can one analyse the data generated to provide valuable outputs? Flexibility, adaptations and an understanding of participants and their contexts can help to enhance rural research and move the qualitative researcher forward.

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Dorothy Queiros
Department of Applied Management
University of South Africa
Queirdr@unisa.ac.za