CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter presents the design, methodology and methods used in this study. The methodology relates to the approach that was adopted in the study; while the methods refer to the research tools used in the study. Therefore, the methodology and methods are explained separately in this chapter. In order to achieve the study aims of identifying and confirming criteria for the workplace-effective mobility of employees with disabilities, a sequential mixed method design was adopted. The qualitative and quantitative methods were thus used sequentially to identity and confirm criteria for workplace-effective mobility, respectively.

In order to contextualize the choice of design and methodology, the chapter begins with the knowledge claim made for the study. This knowledge claim emanates from the goal of emancipating employees with disabilities, as explained in Section 1.10, which covers the theoretical framework underpinning the study. The knowledge claim also supports the meta-theoretical assumptions discussed in Section 1.7.

The chapter culminates in a detailed but separate presentation of the two methods followed sequentially in the study as Phase 1 (the qualitative phase) and Phase 2 (the quantitative phase). The strategies used for sampling, data collection and analysis are explained in this chapter, phase by phase. The importance of a literature control for the study is also explained in this chapter.

4.2 THE KNOWLEDGE CLAIM

This study advocates for the emancipation (Creswell, 2009) of employees with disabilities from the injustices of workplace prejudice and discrimination that confront them. Therefore, these injustices are highlighted (Mickhail & Graaf, n.d.) in order to identify aspects of human resources practices and policies that require change to enhance workplace equity. An emancipatory research paradigm is thus adopted in the study. Such a paradigm it is not only applicable to qualitative research methodology, but is also appropriate in mixed method studies (Barnes, 2001) such as this one.

Accordingly, the study rejects the traditional claims of researcher objectivity and neutrality. On the basis of the views of Barnes and Mercer (1997), I claim that the knowledge pertaining to the workplace-effective mobility of employees with disabilities is socially constructed and culturally relevant. Because of this claim, I locate the study within the social model of disability, in order to investigate how employees with disabilities from various disability cultures understand the phenomenon of workplace-effective mobility. In the process of investigating this phenomenon, I observed the principles relating to emancipatory research, namely reciprocity, gain and reflexivity, as explained in Section 2.4.6 (Barnes & Mercer, 1997).

To achieve reciprocity in the study, I involved several disability organisations, as recommended by Zarb (1997), in the design of the study. The involvement of disability organisations allowed me to focus on the perspectives of employees with disabilities, as suggested by Ross (2004), in order to identify key issues pertaining to the phenomenon, as Schur, Kruse and Blanck (2005) recommend. According to Duckett and Pratt (2001), the involvement of disability organisations in the design of the study requires an adaptation of the ontology, epistemology and methodology in order to investigate critical issues. Therefore, bringing

the expertise of the disability organisations into the study enhanced its relevance, which Eide and Loeb (2005) explain to be necessary in a study that attempts to address identified issues.

Furthermore, I placed my knowledge at the disposal of participants by responding to their questions and addressing their concerns during the focus group interviews. According to Northway (2000), to change the social and material relations within the research, researchers should answer direct questions and disclose their personal values and beliefs to participants. In addition to answering direct questions, I therefore shared the beliefs I formed from the literature regarding workplace-effective mobility as a multi-dimensional concept with participants.

Oliver and Barton (2000) argue that the conventional relationship between researchers and participants resulted in gains accruing only to the researchers, thus exploiting people with disabilities. Although I acknowledge that the academic gain of this study accrues to me as the researcher, I believe that the intended publication of the results will also benefit the participants by identifying and placing critical issues on the workplace agenda for consideration by employers. According to Oliver (1996), social research must also focus on transforming the consciousness of people, in this case, disabled people, by advocating change aimed at improving their quality of life. The process and the results of this study will also bring the pertinent issues relating to workplace prejudice to the consciousness of employees with disabilities and their employers so that transformative actions can be taken.

I offer critical reflections on the contributions made by the study and the possible shortcomings of my study approach and process in the final chapter to guide future research, thereby ensuring reflexivity. Reflexivity is necessary because of the inherent political bias associated with investigating and bringing oppressive social relations to the level of consciousness of the oppressed (Oliver, 1997). Conscientizing

participants to the oppressive social relations affecting the workplace-effective mobility of employees with disabilities required rapport-building, especially when participants were cynical about the study.

Rapport-building depends on collaboration and the negotiation of the research process between the research partners, that is, the researcher and the participants. According to Fawcett and Hearn (2001), the research process should be a collaborative activity, negotiated between the researcher and the participants. Therefore, the researcher must be close to the participants, since the inquiry is completely value-determined and requires researcher/participant collaboration to create knowledge (Plack, 2005). Fieldwork was thus conducted to ensure interaction between participants and me, even though it took time, following high levels of trust-building and negotiation, as suggested by Lynch (1999), for entry into the field. The details on how fieldwork was negotiated and conducted for this study are set out in Section 4.7.1.1.

A particular research design and a methodology that suit this knowledge claim was thus required to achieve the aims of the study presented in Section 1.3. In the next section, my specific choice of such a design and methodology is explained.

4.3 THE RESEARCH DESIGN

As I have already explained in Section 1.8, in this study, I adopted a two-phase, sequential, confirmatory, dialectical mixed method design. The sequence followed in this study was first to use qualitative methods to identify criteria, and subsequently to compile a theoretical model of workplace-effective mobility for employees with disabilities. The use of qualitative methods is dialectical, because it involved dialogue, as described by Zarb (1997), between the participants and me on the nature of workplace-effective mobility. Dialogue between participants and the

researcher requires an interpretivist design, as explained in Section 4.3.1.

Thereafter, a quantitative Likert-scale Delphi method was used to confirm the criteria identified in the qualitative phase. This choice is in line with Thurmond's (2001) argument that sequential mixed method designs use participant interviews and Likert-scale surveys. Because this study does not use the methods in combination, but in a sequence, the qualitative and quantitative methods are thus used independently of each other to identify and confirm criteria. According to Sale, Lohfeld and Brazil (2002), a sequential mixed method design used in this manner (independently) enables complementary results to be achieved.

The features of the research design for the qualitative phase are explained in detail in the subsequent sections, followed by a description of the methods used in the quantitative phase of the study to confirm the criteria for workplace-effective mobility identified in the first phase.

4.3.1 Interpretivist design

As indicated in Section 4.3, the qualitative phase involved a dialogue with the participants. Dialogue tends to produce many responses with multiple meanings, and then patterns of meanings need to be identified (Daengbuppha, Hemmington & Wilkes, 2006) and interpreted (Snape & Spencer, 2005) in relation to the phenomenon under review, in this case, of workplace-effective mobility. Therefore, an interpretivist design was adopted to explain the multiple views presented by participants, as recommended by Andrade (2009) and Williams (1998), and to attain a deeper understanding of the phenomenon, in line with Merriam's (1998) argument.

In order to identify patterns of responses and interpret the multiplicity of participants' views, an inductive strategy can be used when, as in the

case of workplace-effective mobility, no previous literature exists to provide a framework for understanding a phenomenon (Merriam, 1998). The use of an inductive strategy is therefore explained in more detail in Section 4.7.1.4(i)(a). In the absence of prior literature on the topic of study, an interpretivist design relies on fieldwork as a means to identify participants' responses and elicit multiple views on the phenomenon. The use of fieldwork is later explained in Section 4.7.1.3(i)(a). Therefore, it suffices to mention at this stage that fieldwork connects a researcher to the social status (Ferguson, Ferguson & Taylor, 1992) of participants to enable a researcher to provide detailed descriptions of participants in their natural settings (Merriam, 1998).

Connecting to the social status of employees with disabilities is thus necessary to understand the labels (Oliver, 2002) of being unproductive (Shakespeare, 1996) that society applies to them (Ferguson *et al*., 1992). Thus, connecting to the natural settings of employees with disabilities provided an opportunity for me to become an advocate of change (Shar & Corley, 2006) in order to empower the participants, as recommended by Oliver (2002) by responding to their context (Kitthananan, n.d.).

Because of the emphasis on identifying and interpreting patterns of responses for meaning, data were iteratively collected and analysed to compile a theoretical model, in line with Bowen's (2008) suggestion, in this case, of workplace-effective mobility. The iterative collection and analysis of the data necessitated that I use rough tentative designs, rather than plan the entire research design in advance. According to Rubin and Rubin (1995), rough tentative designs guide researchers in the iterative process of learning from the field and of refocusing research.

4.3.2 Grounded Theory design

Grounded Theory is an interpretive qualitative research design that allows researchers to make discoveries (Jones, Kriflik & Zanko, 2005) in

the absence of any existing theory on the phenomenon (Levy, 2003). It is thus used either when theories about the phenomenon do not exist (Ferguson *et al*., 1992) or when theories currently documented in the literature fail to explain adequately the phenomenon observed (Leedy *&* Ormrod, 2005). In this study, therefore, Grounded Theory is used because of the absence of *a priori* knowledge (Jones *et al*., 2005) and the dearth of prior literature on the phenomenon of workplace-effective mobility of employees with disabilities.

This kind of design requires interaction between the researcher and the participants to create meaning regarding the phenomenon under investigation (Goulding, 1999). In order to understand a phenomenon, the researcher should describe the context in which its meaning is created (Andrade, 2009). Therefore, I immersed myself in the field and in the data to gain insight into the subjective and multiple realities of participants pertaining to workplace-effective mobility, as recommended by Daengbuppha *et al*. (2006). By doing so, I was engaging in a process of discovery, and in an inductive search (Elliott & Lazenbatt, 2005) of relationships among data (Charmaz, 2005) gathered during field work (Bitsch, 2005). The immersion of a researcher in the field and in the data to make inductive discoveries about their relationships is thus a distinguishing characteristic of Grounded Theory design.

Proponents of Grounded Theory argue that inductive discoveries of data relationships should proceed systematically from data collection (Bitsch, 2005) to theoretical analysis (Daengbuppha *et al*., 2006), so that data categories are developed (Pandit, 1996). I therefore iteratively collected and analysed data, as Bitsch (2005) suggests, to examine the causal factors and patterns of participants' experience (Daengbuppha *et al*., 2006) of workplace-effective mobility. In this process, I collected data and simultaneously analysed it (in line with Charmaz, 2005) to make theoretical generalisations (see Andrade 2009) towards compiling a theoretical model of workplace-effective mobility.

The compilation of theoretical models is regarded as a complex activity (Strauss & Corbin, 1998) that requires a researcher to think about the data in theoretical terms and integrate knowledge created into the research context (Bitsch, 2005). As the data analysis progresses in a theoretical manner, a theoretical conceptualisation (Brown *et al*., 2002) on data emerges from the researcher-participant interactions (Durant-Law, 2005). Hence, theoretical conceptualisation cannot be predetermined, but is a product of concurrent, iterative, systematic and interdependent data collection and analysis (McGhee, Marland & Atkinson, 2007). Theoretical models are thus compiled by identifying key constructs pertaining to the phenomenon and describing their relationships in a particular context (Shar & Corley, 2006). In this study, key constructs pertaining to the workplace-effective mobility of employees with disabilities were identified and their relationship was described, culminating in a theoretical model.

Grounded Theory is useful for the practice, because it relates to daily situations and explains the creation of meaning in theoretical terms (Merriam, 1998). In disability research, a Grounded Theory design allows the researcher to study participants' attitudes and beliefs on a phenomenon, thereby improving the validity of the research findings (Hartley & Muhit, 2003).

4.4 THE FOCUS OF THE RESEARCH DESIGN

The focus of this research design was identifying and confirming criteria for the workplace-effective mobility of employees with disabilities. Therefore, in order to understand the central concept (Creswell, 2007) of workplace-effective mobility in the study, the conditions, orientations and actions affecting it needed to be explored and described, as Bless, Higson-Smith and Kagee (2006) suggest.

For a better understanding of reflexive interactions (Goulding, 1999) between the researcher and participants, the conditions, orientations and actions of participants regarding the phenomenon are explained below.

4.4.1 Conditions

The personal, physical, economic and social conditions facing employees with disabilities can either enable or inhibit their ability to attain workplace-effective mobility. These conditions were explored and described in this study as the various dimensions of workplace-effective mobility set out in Section 3.3.

4.4.2 Orientations

Orientations of employees with disabilities toward workplace-effective mobility and the role of employers in enabling or inhibiting their workplace-effective mobility were explored. The exploration of these employer and employee orientations assisted in identifying criteria and compiling a theoretical model for workplace-effective mobility in this study. The views of industrial and organisational psychologists on the identified criteria were also explored in this study in order to confirm such criteria, based on consensus reached while assessing the phenomenon.

4.4.3 Actions

The actions that employees with disabilities take to attain workplace-effective mobility were explored directly, as Bless *et al*. (2006) suggest, through focus group interviews; and the findings were confirmed through the Delphi process.

Three foci in a study are not necessarily mutually exclusive (Bless *et al*., 2006), because, in this case, the conditions in which employees with

disabilities pursue workplace-effective mobility may influence their orientations and actions.

4.4.4 The units of analysis

My units of analysis in this study were

- people with disabilities who are either employed or self-employed – these units of analysis were involved in Phase 1 of the study to identify criteria for workplace-effective mobility; and
- industrial and organisational psychologists who participates as individuals in Phase 2 of the study, which is concerned with confirmation of the identified criteria through consensus building.

4.5 POTENTIAL SOURCES OF BIAS

Potential bias in this study related to the use of purposive sampling to selectively identify participants and selectively document the data. Roberts, Priest and Traynor (2006) caution that the selective identification of participants constitutes exclusion bias because some are included, while others are excluded from participating in the study. In order to avoid or reduce exclusion bias in the current study, all the disability organisations identified through the Internet searches were invited to participate in the study via electronic mail without prejudice to their right to voluntary participation (Roberts, Geppert & Brody, 2001).

There is also a potential for bias from the personal perspectives I bring to the study and my familiarity with the field resulting from site visits that I undertook, as Roberts *et al*. (2006) warn. The personal perspectives I hold result from the training and experience I acquired as a registered industrial psychologist, as a PhD candidate and as a Senior Manager responsible for human resources management matters in the university where I work. I therefore acknowledge that these roles may have influenced my interactions, as Finch and Lewis (2005) argue, with

participants, and may ultimately have had some effects on the findings. The ethical measure of self-disclosure is therefore used to address these potential sources of bias.

Potential bias relating to the selective documentation of data was managed through measures intended to ensure the trustworthiness of the study, as explained in Section 4.7.1.5, including an audit trail of the research process, as advocated by Malterud (2001) and reflexivity, as proposed by Roberts *et al*. (2006). Seale and Silverman (1997) indicate that researchers may minimize research bias by suspending their experiences and beliefs or openly reflecting (showing reflexivity) on their abilities or through data triangulation. In this study, I reflect explicitly on my lack of understanding of the various types of disability during data collection and clarify the study limitations in the concluding chapter.

4.6 RESEARCH METHODOLOGY

In the study, I adopted a qualitative research methodology to identify criteria for workplace-effective mobility and thereafter a quantitative research methodology to confirm the identified criteria. Qualitative research methodology is an umbrella concept covering several forms of inquiry, including ethnography, phenomenology, Grounded Theory and case studies (Creswell, 2009).

Such varied forms of qualitative research methodology are necessary to explain the meaning of social phenomena in their natural settings (Merriam, 1998). Patton (2002) holds a similar view, pointing out that qualitative research methodology is naturalistic and seeks to understand phenomena in their context-specific settings. In order to understand meanings that participants construct regarding their natural settings, I therefore draw inferences from the data, using an inductive strategy of data analysis, as explained in Section 4.7.1.4(i)(a).

The qualitative research methodology used in this study assisted me in gaining an understanding of and describing workplace-effective mobility in the context-specific setting of the workplace. To achieve this goal, the insider-perspective described by Oliver (2002) was adopted to meet the requirements of emancipatory research, that is, the collective production of knowledge.

4.7 RESEARCH METHODS

The separate use of concepts 'methodology and methods' is necessary to differentiate between the research approach and strategies or methods used to collect, analyse and interpret data in the study. As I mentioned in Section 4.1, the term 'methodology' relates to the approach, while 'methods' relates to strategies adopted in the study. In this context, therefore, the sampling, data collection and analysis methods used in each phase (the qualitative and quantitative phases) of this study are explained separately. Phase 1, pertaining to the qualitative activity of identifying criteria for and compiling a theoretical model of workplace-effective mobility, is presented first, followed by the quantitative part of confirming criteria in Phase 2.

4.7.1 Phase 1: Identifying criteria and compiling a theoretical model of the workplace-effective mobility of employees with disabilities

Because Phase 1 of the study was concerned with what Seymour (2001) refers to as the subjective, value-laden responses of participants to identify criteria for and compile a theoretical model of workplace-effective mobility, qualitative methods were used. Drawing on Shar and Corley (2006), qualitative methods were chosen to discover new variables pertaining to the concept of workplace-effective mobility. The relationship among these variables was determined and the influence of the social context was illustrated with a view to revealing and understanding the complex processes of workplace prejudice and discrimination.

Therefore, the methods for this phase are explained in detail. According to Shar and Corley (2006), researchers are required to describe their data collection and analysis in detail, thereby openly exposing them for peer review and demonstrating that they meet rigorous standards. Not only are the data collection and analysis methods used in this study explained, but so are the sampling techniques, the roles of moderators and the researcher, measures for ethical compliance, the literature control and the measures employed to ensure the trustworthiness of the findings. According to Taylor (1993), the description of these methods constitutes the empirical approach to the study. As indicated in Section 4.3.1, I also undertook fieldwork to identity criteria for workplace-effective mobility and it is also explained in this section.

4.7.1.1 Sampling

In order to make a decision regarding whom to include in the study in line with the suggestions by Ritchie, Lewis and Elam (2005), I used Statistics South Africa's (2005) typology of disability by age, race and gender. The blind, the Deaf, the speech-impaired and participants with physical disabilities in the age group from 25 and 55 were thus included, because they represent the employable population of people with disabilities. With regard to younger people, although citizens at the age of 18 may start working, in line with the arguments of Bowen (2008) and Endacott and Botti (2005), I considered participants in the age category of 18 to 24 less useful in terms of their knowledge and experience on the issue under review. At the upper end of the spectrum, I excluded people above the age of 55, because it is generally accepted that the retirement age for South Africans begins at 55 (Cape Gateway, 2004).

Because people with mental and emotional disabilities are the least employable (Benedict *et al*., 2005), they were also not included in the sample. The concerns raised regarding growing inappropriate access and unauthorised disclosure of information on patients (Simon, Unützer,

Young & Pincus, 2000) were another major consideration for excluding this group of participants from the study.

These samples were selected for the study based on a need to understand the various manifestations of the phenomenon of workplace-effective mobility in different settings, as recommended by Ritchie *et al*. (2005). In order to understand the various manifestations of workplace-effective mobility, I recruited employed and self-employed participants with a disability from four of the nine provinces of South Africa, namely the Free State, Gauteng, KwaZulu-Natal and the Western Cape. The spread of participants across provinces assists in highlighting the reasons for differences between settings, in line with Kitthananan's (n.d.) suggestion.

Based on Ritchie *et al*.'s (2005) argument, the characteristics of the population and those of the individuals within the sample frame were considered in order to determine the sample design for the study. Because of the need for relevant information, it was envisaged that these categories of employees with disabilities would provide the relevant information pertaining to workplace-effective mobility in South Africa. These participants were thus purposively selected for participation in the study. According to Ritchie *et al*. (2005), purposive sampling is a non-probabilistic sampling procedure adopted to select a sample using a criterion based on unique characteristics. The criterion-based selection of samples enables the saturation of data (Bowen, 2008) required for theoretical representativeness of the settings, individuals or activities (Kitthananan, n.d.).

In this regard, the purposive sample design used in this study focused on the conceptual rather than on numerical representation of participants (see Potter, 1996; Ritchie & Lewis, 2005). Therefore, this sampling strategy focuses less on sample size and more on sampling adequacy, in other words, as indicated earlier the sample should be composed of

participants who have knowledge (Bowen, 2008) or experience on the issue under review (Endacott & Botti, 2005). In order to attain sampling adequacy, I used referrals from participants as a strategy. Furthermore, I negotiated access to knowledgeable participants, as Potter (1996) describes, in order to develop, maintain and beneficially close the research relationships (Devers & Frankel, 2000) with them.

The sampling occurred in a context where I, as an industrial psychologist, had no previous knowledge of the participants except for their willingness to participate (see Smit & Cilliers, 2006) generated through negotiation for access. The participating disability organisations were thus only known to me because of preliminary correspondence and/or site visits.

(i) Negotiating access

In preparing for access negotiations, I conducted Internet searches to identify disability organisations for participation in the study. Disability organisations identified in this way included the Blind Society of South Africa, the Disability Sports of South Africa (DISSA), the National Council for People with Physical Disabilities in South Africa (NCPPDSA), the National Institute for the Deaf (NID), the Quad Para Association of South Africa (QASA) and the Speakeasy (an association for stutterers in South Africa). Through referrals from these disability organisations, the Association for People with Disabilities (APD) and the Deaf Federation of South Africa (DEAFSA) were added to the list.

Comprehensive electronic mails (e-mails) were then sent to these disability organisations, requesting assistance regarding the recruitment of participants. Requests for assistance were communicated as follows:
'*To enable the interviews, I am asking that your organisation assists with the following: identification of relevant participants; identification of an accessible venue for the interview sessions; arrangement of the*

interviews; and provision of a sign language interpreter for the deaf participants (at fees to be agreed upon)' (P5: FW Request to conduct interviews for a Doctoral Study Scanned 8.txt – 5:1, 129:136).

As part of this correspondence, consent forms and memoranda of understanding were e-mailed to selected disability organisations for them to approve access to participants. In the correspondence, I explained the purpose of the study. I received the following feedback from one disability organisation: '*Thank you for this. Can I circulate this to other disability agencies and then they can also respond directly to you, also to my member base. Let me know'* (P18: RE Request to conduct interviews for a Doctoral Study Scanned.txt – 18:1, 19:20). The APD and the DEAFSA were identified through disability organisations asking whether the data could be shared with other disability organisations.

When responses were not forthcoming, I sent out reminder e-mails. Despite these reminders, however, no responses were received from DISSA and NCPPDSA. Notwithstanding this experience, the reminder e-mails alerted me to a number of factors which were delaying the responses from some disability organisations (the relevant comments are cited *verbatim*, using italics to highlight the participants' voices, and the file details of the material are cited in brackets):

- **Computer crashes**: '*I am so glad you emailed me, had a hard drive crash last week pls resend the 1st email and I will get onto it sorry*'(P14: Re Just a friendly follow-up – Doctoral Studies Scanned.txt – 14:1, 6:7);
- **Vacation leave of contact people**: '*I am so sorry that Sylvia did not come back to you. Yes I am very busy as we are working with skeleton staff at the moment and we are also busy with feedback reports that we must submit at the end of the month. Sylvia is on leave at this stage. Due to cash flow problems we do not have accessible transport available during after hours and weekends at this stage*'(P20: RE Request to conduct interviews for Doctoral Studies Scanned 9.txt – 20:1, 56:59); and

- **Resignation of a project coordinator**: '*Hi there Sarah is not with us anymore. Can we re-schedule for Oct? Thanks*' (P25: RE Follow-up sessionsSpam score 8%M1ScannedM1.txt – 25:1, 18:21).

Furthermore, I arranged and undertook site visits to the NID and QASA, and attended a Speakeasy meeting. According to Caine, Davidson and Stewart (2009), a visit to research sites as preliminary fieldwork is important to generate interest from potential study participants. During these meetings, I entered into negotiations with coordinators / directors of disability organisations concerning the nature of the field-work to be done. The purpose of the site visits was also to discuss the details of the study and plan the research process. I expressed my appreciation of the value of the site visits in the following words to organisers: '*It was my pleasure to have met you. Our discussions were quite fruitful and provided a clear way forward regarding my research*' (P7: Re Interview scheduleScanned.txt – :3, 22:23).

As a result of these access negotiation processes, mutually beneficial relationships with the participating disability organisations were built. The APD Free State responded as follows: '*[W]e are excited about your research, and we are of opinion that the said research will add value to the lives of people with disabilities*' (P12: Scanned.txt – 12:1, 10:11). The NID burnt a Digital Versatile Disc (DVD) on the focus group interviews with its members: '*[W]e burned 2 new DVDs. I hope that they will work this time*' (P12: RE DVD's Scanned.txt – 12:1, 35:35). Thus, I did not simply gather as much information as I could and then cut ties, but instead maintained sound relations with disability organisations throughout the research process, as proposed by Devers and Frankel (2000).

4.7.1.2 Sample size

I had envisaged larger samples of about 400 for the development of a psychometric tool (P4: Re Doctoral Research in DisabilityScanned.txt – 4:7, 215:222), '*to determine validity and reliability for my study*' (P4: Re Doctoral

Research in DisabilityScanned.txt – 4:5, 120:124), but, because I was using a rough tentative design for the study (see Section 4.3.1), I was able to refocus the research, in line with Rubin and Rubin's (1995) suggestion, from developing psychometric assessment tools to identifying criteria for workplace-effective mobility.

The refocused purpose of identifying criteria for workplace-effective mobility necessitated the discovery of variables pertaining to the concept (see Section 4.7.1). In order to attain such an objective, participants who are knowledgeable regarding the phenomenon (Bowen, 2008; Potter, 1996) were needed for the study. I therefore used a purposive sampling strategy to recruit a purposive sample of 40 employees and self-employed participants, as defined in Section 4.7.1.1. The samples varied by type of disability and biographical information (gender and race). A variation of samples enables the complexity of social settings to be captured and a comparison of participants' responses across a variety of settings in order to compile a theoretical model (Kitthananan, n.d.), in this case, of workplace-effective mobility.

As purposive sampling is criterion-based (Ritchie *et al.*, 2005), the sampling criteria were specified as follows in this study: '*I am looking at ten (10) people [male and female, different age groups, different positions (junior and senior) in the company, different years of experience, language diverse, etc.], who are living with disabilities and are employed. I noticed that you have a Board of Directors; perhaps I can interview the Board? The interviews will be group interviews of at least one hour or two hours maximum*' (P4: Re Doctoral Research in DisabilityScanned.txt – 4:1, 66:71).

Using these criteria, a sample of 66, as indicated in Table 4.1, was achieved. This is attributable to the level of interest generated by the study as a result of the entry negotiations held with disability organisations.

Table 4.1: Profile of participants by province

Province	Race and Gender								
	African		Coloured		Indian		White		Disability
	M	F	M	F	M	F	M	F	
Free State	8	-	-	-	-	-	2	1	Blind
	2	4	-	-	-	-	-	1	Physical
Gauteng	9	-	-	-	-	-	-	-	Speech
KwaZulu-Natal	-	-	-	-	6	4	4	2	Physical
Western Cape	1	-	-	2	-	-	11	9	Deaf
Total	**20**	**4**	**0**	**2**	**6**	**4**	**17**	**13**	**66**

The number of Deaf participants and participants with physical disabilities was thus 13 higher each than the envisaged ten per category. This negated the scepticism expressed by project coordinators at the start of the study. One coordinator said: '*[B]e forewarned to find candidates that are employed will be a challenge in all categories*' (P6: FW Request to conduct interviews for a Doctoral Study Scanned.txt – 6:1, 16:17). Another said that '*organising the deaf is tougher for us but I will forward the number of the organisation where you are able to book for sign language interpretation services. I suggest you try the Free State group*' (P6: FW Request to conduct interviews for a Doctoral Study Scanned4.txt – 6:1, 16:17).

The under-representation of the speech-impaired participants (only nine participated) must be ascribed to the problems of a loss of contact with participants referred by the Speakeasy (an association of people with speech-impairments in Gauteng). The apparent overrepresentation of White participants (30 participated) and the under-representation of Coloured participants (only two participated) in the study are attributable to their respective over- and under-subscription in the databases of the various disability organisations. The same applies to the majority of participants' being male (43 participants or 65%), which meant that the desired 50:50 gender balance of participants in the study could not be attained. In the Free State, however, the majority of participants with

physical disabilities were female (4). The speech-impaired participants were all African males drawn from Gauteng.

4.7.1.3 Data collection

Data was collected in participants' natural settings – either their place of work or place of residence (for the sake of convenience and accessibility). Collecting data in natural settings enables the compilation of theoretical models reflecting the social contexts of the participants (Kitthananan, n.d.). Also the costs for participation were minimized by aligning the data collection processes with the usual operations and priorities of the participants (Stiffman *et al*., 2005). For instance, data collection was conducted during the evenings or weekends.

Because the quality of data depends on the sampling decisions made during the data collection process (Endacott & Botti, 2005), the decision of whom to include in a subsequent focus group interview was based on the information gaps identified in the previous sessions. Therefore, the identification and filling of information gaps as a strategy for data collection was intended to achieve the theoretical saturation of data, as explained by Endacott and Botti (2005).

My sign language limitations necessitated the services of sign language interpreters during data collection from the deaf and speech-impaired participants. These services were generously sponsored for the study by participating organisations, namely the National Institute for the Deaf (NID) and a retail store.

In this context, the methods used for data collection are described below.

(i) Data collection methods

Data were collected predominantly using field work, focus group interviews, and the cognitive interviewing strategy. Because of the need for an interview schedule, the use of recording devices, and the presence of the researcher and moderators during the process, these elements of the data collection process are also explained in this section.

(a) Field work

Fieldwork consists of three basic stages: initiation of entry, physical entry and closure (Caine *et al*., 2009). Therefore, I prepared for entry as explained in Section 4.7.1.1(i). In the second stage of actual physical entry into the field setting, data collection began. Because I was aware of the danger of researcher bias (Creswell, 2007), as explained in Section 4.5, due to my identity and background, I made an effort to suspend any judgement about the data incidents during the data collection stage (McGhee *et al*., 2007).

The final stage was to close the research project or post-field stage. In this regard, I mentioned to participants that the next steps would be to transcribe the audiotapes of the interviews or focus group discussions and write up the report. Drawing on Marshall and Rossman (2006), I then closed the data collection process in a mutually beneficial manner by promising the participants copies of the study results.

(b) Focus group interviews

Like other qualitative research strategies, the Grounded Theory approach uses one or more techniques to collect empirical data (Bitsch, 2005). The literature suggests that focus group interviews are a commonly used technique in qualitative studies (Levy, 2003). Focus group interviews serve either an exploratory function, to identify

constructs prior to quantitative study, or a phenomenological function, to access people's common sense conceptions and everyday explanations (McLafferty, 2004) of phenomena.

In this study, focus group interviews were used to explore the constructs associated with the workplace-effective mobility of employees with disabilities. Focus group interviews are open-ended interviewing techniques intended to explore, understand and explain the nature of a phenomenon (Bing, 2007). The focus group interview technique offers the following advantages: be careful

- Because it is a face-to-face interview technique, a focus group interview enables the researcher to share the place and time with participants to ensure the production of humane, sensitive data that reflect the interest of both parties (Seymour, 2001).
- A focus group interview stimulates people to make their views, perceptions, motives and reasons thereof explicitly known through group interactions (Kitthananan, n.d.). The dialogic nature of focus group interviews, which involves constant communication between self and others, enables the exploration of multiple meanings created by participants as they share their social experiences (Goss, 1996).
- Focus group interviews give participants an opportunity to convey their own meanings and interpretations by reprocessing their behaviours relating to a phenomenon under investigation (Kitthananan, n.d.).
- Focus group interviews generate critical-emancipatory forms of knowledge, developed within the research process by and for its participants (Goss, 1996), thereby empowering the participants (Rabiee, 2004).
- Focus group interviews are flexible and cost-effective methods used for collecting responses of non-random samples of people who fit the selection criteria, such as disabled people (Sofaer, 2002) in a naturalistic setting (Grudens-Schuck, Allen & Larson, 2004).

Focus group interviews complement the interpretivist research design by enabling the production of field texts and co-constructing the meaning of phenomena in a relatively naturalistic environment. However, caution has to be exercised in the handling of the data because purposive sampling and researcher assumptions tend to influence the quality of data analysis in focus group interviews (Smit & Cilliers, 2006). These issues were therefore regarded as contextual issues, as described by Shar and Corley (2006), in this study and were addressed through measures to ensure rigour (trustworthiness), as specified in Section 4.7.1.5.

Theoretical sampling (Kritzinger, 1995) is used in focus group interviewing as a guide to determine when to stop the data collection process upon reaching the data saturation point. Corbin and Strauss (2008) indicate that, as a process of generating Grounded Theoretical models, theoretical sampling aims at attaining theoretical saturation by exploring concepts and cumulatively building on previous data collection and analysis to determine the subsequent collection of data. Observing the principles of the interpretivist paradigm indicated in Section 4.3.1, researchers compile theoretical models grounded in data by iteratively collecting data and comparing data sets (Douglas, 2003) using theoretical sampling and constant comparison methods (Bowen, 2008).

Therefore, the sampling of events is continually related to their explanations (Mays & Pope, 1995; Nair *et al*., 2005). In this study, data were thus collected, analysed and then compared with the emerging concepts so as to make decisions on the subsequent collection of data to attain theoretical saturation. Because it is an iterative process, the sampling procedures for grounded theory are thus not pre-planned (Bitsch, 2005). Consequently, I used theoretical sampling to identity concepts that have some proven theoretical relevance to the emerging theoretical model (see Bowen, 2008) of workplace-effective mobility.

Theoretical sampling first focuses on achieving minimal differences among cases pertaining to the phenomenon being investigated and thereafter focuses on establishing maximum differences (Jones *et al*., 2005) among them. In order to achieve minimal differences, homogeneous groupings of participants based on the type of disability were interviewed in one session, for example, the blind participants were interviewed as a group, as were the deaf participants. According to Ritchie *et al*. (2005), this approach provides variations of a detailed picture of the phenomenon for comparative purposes. Also, interviewing participants as a homogeneous group assists in a collaborative production of field texts and co-construction of meanings (Smit & Cilliers, 2006), in this case of workplace-effective mobility between the researcher and the participants.

In order to establish maximum differences among them, participants were chosen for variation, based on their biographical data (gender and race) and geography. Such variation created heterogeneity, which maximizes the exploration of different perspectives within a group setting (Kritzinger, 1995). A maximum variation of data sources is also the preferred strategy for interpretivist inquiry (Rambaree, 2008) aimed at ensuring diversity of perspectives (Brown *et al*., 2002). The variation of data sources fulfils the principle of a multiple case study approach to capture the complexity of the social setting and facilitate comparison of activities across a variety of settings and situations (Alam, 2005). The variation of the data sources also enables the identification of negative cases to test the emerging theoretical model through the data that are collected (Bitsch, 2005).

A maximum of two hours was allocated to each focus group session in order to optimize the use of theoretical sampling principles. According to McLafferty (2004) and Kritzinger (1995), a maximum of two hours is a sufficient duration for focus group interviews, provided that the participants are informed of this beforehand (Rabiee, 2004). In line with

Rabiee's (2004) warning, the electronic correspondence with disability organisations, therefore, the estimated duration for the focus group interviews was mentioned to ensure that the participants would commit such time to the process.

The focus group interviews should ideally be administered in safe, private and accessible venues (Greacen Associates, 2007; Rabiee, 2004). This was especially important for participants with disabilities to optimize their safety and accessibility. The disability organisations were thus asked to assist in identifying accessible venues for the focus group interviews, in order to overcome barriers to accessibility (Harris & Roberts, 2003). At the end of each session, the participants were debriefed by reflecting on their impressions of the sessions, thereby reducing researcher bias.

(c) Cognitive interviewing strategy

Focus group interviews are commonly used in conjunction with cognitive interviews in the health care field (Sofaer, 2002) to enable access to groups such as disabled people, who may not be reached using quantitative techniques (Shah, 2006). Cognitive interviewing focuses on the thoughts, feelings, interpretations and ideas that come to the participant's mind while examining the survey questions. Participants are also asked to suggest alternative wording to increase comprehension, thereby ensuring the appropriateness and comprehensibility of questions (Rosal, Carbone & Goins, 2003). Cognitive interviewing was therefore used in this study as a 'think aloud' technique to gather data pertaining to the interpretations of concepts used by participants, as suggested by Chung and Martin (2005). According to Rosal *et al*. (2003), the 'think aloud' technique enables participants to verbalize all the thoughts they have in response to questions pertaining to the phenomenon, in this case, workplace-effective mobility.

Cognitive interviews are also employed by interviewers using probing techniques to clarify participants' answers as they respond to each item. In addition to clarifying questions and to providing answers to questions by focus group participants, probes are used to optimize responses. Probes are also used to deepen an understanding of and offer an opportunity to gather accurate data (Rosal *et al*., 2003) from participants. This technique was therefore used to gather deeper and more accurate data on workplace-effective mobility.

According to Sofaer (2002), the cognitive interviewing strategy is used to achieve the following data collection goals:

- to overcome the negative effects of limited participant education on the data collection processes – the fact that 30% of employees with disabilities have limited or no education in South Africa (Statistics South Africa, 2005) necessitated the use of cognitive interviewing strategy in this study;
- to enable participants to verbalize their thoughts, feelings, interpretations and ideas as they respond to questions, thereby exploring their personal meanings of mobility phenomenon; and
- to determine whether or not items and response options are understandable and consistently interpreted by focus group participants in the pilot phase. According to Drennan (2003) and Brandt (2004), cognitive interviewing is thus used to pretest questions, thereby identifying problematic questions that may elicit response error among participants with lower literacy levels.

(d) The interview schedule

Preliminary reading of the literature assisted me to identify a tentative list of key issues, which were then used to compile an interview schedule. An interview schedule contains a tentative non-exhaustive list of open-ended questions to be asked (Glaser, 1992) during an interview. It is used to direct the focus group interviews, stimulate dialogue on the

research topic, and to ensure that all the desired information is solicited (McLafferty, 2004).

Therefore, the interview schedule for this study contained open-ended questions (see Annexure C), focusing on the nature of workplace-effective mobility of employees with disabilities, enablers of workplace-effective mobility, inhibitors of workplace-effective mobility, the views of participants regarding the differential treatment of the different disabilities by employers in the workplace; and general opinions and experiences regarding the study.

Comments on the interview schedule were requested from QASA project coordinators before the schedule was administered for data collection. A response received indicated that the concept of workplace mobility as originally used in the schedule should be reformulated to '*successful gainful employment and career advancement*' (P1: ANNEXURE A Doctorate research instrument.txt – 1:1, 52:53). After obtaining comments from the disability project coordinators, the interview schedule was piloted on a purposive sample of 15 participants with physical disabilities in two provinces, namely Gauteng and KwaZulu-Natal. Table 4.2 indicates the number of pilot participants involved by race, gender, type of disability and province.

The purpose of piloting the interview schedule was three-fold – to determine the understanding of the terminology by participants, to ascertain the length of time required to obtain rich and meaningful data, and to refine the questions used in interview guide.

Table 4.2: Number of participants in the pilot phase by race and gender

Province	**Race and Gender**								
	African		**Coloured**		**Indian**		**White**		**Disability**
	M	F	M	F	M	F	M	F	
Gauteng	4	3	-	-	-	-	-	-	Physical

Province	Race and Gender								
	African		Coloured		Indian		White		Disability
	M	F	M	F	M	F	M	F	
KwaZulu-Natal	4	2	-	-	-	-	2	-	Physical
Total	**8**	**5**	**-**	**-**	**-**	**-**	**2**	**-**	**15**

(e) The researcher

I envisaged using research assistants for data collection. Research assistants should have '*excellent communications skills, possibly a graduate with psychology and … [have] conducted interviews before*' (P9: Re PhD studiesScanned.txt – 9:1, 60:65). I also contacted Deloitte (a human capital consulting firm) requesting permission to use the system of targeted selection (P7: RE Permission to use Targeted Selection Training for Research PurposesScanned.txt – 7:2, 30:33) to train the identified research assistants on sound principles of interviewing.

Such permission was granted, but I abandoned the plan in the best interests of what Goulding (1999) refers to as symbolic interactionism, which is explained in Section 4.3.2 as the interactions between the researcher and participants intended to create meaning about the phenomenon. Therefore, I was actively involved in the data collection process, as suggested by Finch & Lewis (2005), by playing the following roles:

- I was an integral part of the research process, as recommended by Brown *et al*. (2002). Thus, in line with Daengbuppha *et al*.'s (2006) strategy, I personally conducted the focus group interviews and generated the field notes. The personal involvement of a researcher enables rigorous data-gathering on the multiple interpretations of participants who experience the phenomenon first-hand in order to construct systematic and informed meaning of the phenomenon (Shar & Corley, 2006).

- I created space for participants with disabilities to make a contribution. Where necessary, I encouraged participants to provide input in the discussions. According to Kitthananan (n.d.), the researcher should create a supportive environment by encouraging discussion and expression of differing opinions.
- I addressed the potential problem of dominant participants by requesting them to be patient and receptive to others' opinions.
- I could draw out silent and reticent participants by maintaining eye contact and encouraging them to speak up. In order to optimize the discussions, I made procedural suggestions, such as 'let us give each other a chance'.
- During the data collection and analysis, I critiqued the data, analysed the multiple meanings and assumptions of participants, as well as compared the responses from different sessions to establish a pattern.
- Because of the emancipatory nature of the study, I also produced knowledge in the form of criteria of workplace-effective mobility in order to influence changes in workplace practices. Furthermore, I provided pertinent information and answered any urgent questions raised by participants.

(f) Role of the moderator

In this study, the moderators were people who were personally known to the participants. They gave neutral responses during the discussions (McLafferty, 2004) based on their experiences of working with employees and people with disabilities. In the focus group interviews with the participants, moderators were therefore involved because of their sensitivity to the issues and to ensure methodological rigour (McLafferty, 2004).

(g) Data-recording instruments

Based on the principles of theoretical sampling, I used multiple methods of audio, video recording and field notes to generate rich data and to pursue data saturation. Therefore, in order to produce credible data, I personally recorded the focus group interview sessions using these multiple instruments with the informed consent of participants. Audiotaping of each interview session generates a considerable amount of data, thereby enabling a specific focus on the particular words used by the respondents or the hermeneutics (Douglas, 2003). For these purposes, a Marantz PMD 670 recorder was used to audiotape the focus group interviews.

The Marantz PMD670 is a solid state recorder designed to record meetings and interviews. It has numerous sophisticated good quality recording features, is built for reliability and allows for rapid digital transfer of recordings to computer via USB or removable CF card (Stockdale, 2003). To enable the rich context analysis of data, non-verbal cues from participants were recorded using a Sony video-recorder and I also took field notes as a back-up, as recommended by McLafferty (2004) and Rabiee (2004).

The transcripts from the audio and video tapes were used to achieve the following data collection goals set out by Arthur and Nazroo (2005) and Glaser (1992):

- identify gaps in the interview process and make further data collection decisions towards reaching a theoretical saturation of the data;
- interpret participants' emotions in the study through an analysis of their voice tones and the emphasis they provided; and
- iteratively identify and address data gaps, thereby ensuring the comprehensiveness of the data collected and the quality required for compiling the theoretical model.

4.7.1.4 Data analysis

The qualitative data analysis process depends on three issues (Baptiste, 2001). Firstly, the philosophical assumptions made in the study pertaining to dialogue necessitate that a narrative or discourse analysis of data be performed to attain a deeper or broader understanding by developing theoretical models (Baptiste, 2001) of the phenomenon.

Secondly, qualitative data analysis depends on the resources available to the researcher to manage the data (Baptiste, 2001). In view of this, because of the vast quantity of the data I collected, I used qualitative data analysis software (QDAS) to manage the data and to create an audit trail of the analysis, as recommended by Maclaran and Catterall (2002). According to Brown *et al*. (2002), when there is a lot of qualitative data, the large body of data necessitates the use of computer software for data analysis by coding data and presenting a visual model of data based on emerging categories. I therefore coded and categorized data to develop themes that feature the words and experiences of the participants themselves (see Krauss, 2005), so as to develop a theoretical model of workplace-effective mobility.

Because they vary in nature and applicability, I compared the available qualitative data analysis software on the basis of their data analysis utility and ability to build theoretical models. According to Miles and Weitzman (1994), theory-building software offers the following advantages:

- their code-retrieval functionalities allow a researcher to make connections between codes;
- they enable the development of higher-order classifications and categories, thereby enabling the formulation of propositions or assertions that fit the data; and
- they can be used for data coding, memo writing, data linking, data search and retrieval.

I compared the Atlas.ti with Nvivo. On the basis of my comparison, I chose Atlas.ti for its theory-building capacity, flexibility of use and user-friendliness. According to Lewis (2004), Atlas.ti offers the advantage of being more versatile than Nvivo. Lewis (2004) also indicates that, compared to Nvivo, Atlas.ti is a good choice to analyse the interview and other text-based research data by importing, displaying, coding and analysing a wide range of qualitative data types.

Atlas.ti was also chosen as a computer-aided data analysis method for its efficient data management, ability to index and retrieve data through codes, build a picture of the relations between data, identify themes by asking questions of the data, and identify linkages in the data (Maclaran & Catterall, 2002). It is thus a strong tool for network displays and very user-friendly (Miles & Huberman, 1994).

However, I faced a challenge, in that I was not competent to use the software. Because data analysis depends on a researcher's knowledge and skill (Baptiste, 2001), unless such a lack of knowledge and skill is addressed, it can have a negative influence on the trustworthiness of the study findings. Therefore, to ensure the required competence in its application, I attended a course on Atlas.ti, focusing on how to gainfully use the software. This course was arranged through and attended at the Research Unit of the University of Pretoria. In my feedback to the trainer, I indicated that '*attending the course offered me an opportunity to revise my methodology chapter for comprehensiveness*' (P16: RE Re Atlas Ti training Scanned ScannedM2.txt – 16:2, 157:158).

Lastly, qualitative data analysis depends on data analysis strategies and tactics (Baptiste, 2001). The strategies I used to analyse the data collected in this qualitative phase of the study included the interplay of inductive-deductive strategies, the constant comparison method, synthesis and creativity. The interplay of inductive-deductive strategies was used to analyse data (Merriam, 1998) in order to compile a

theoretical model of workplace-effective mobility. According to McGhee *et al*. (2007), Grounded Theory design uses inductive-deductive strategies to derive ideas inductively and test them deductively against the data. However, these strategies are explained separately to illustrate their value in the qualitative data analysis process.

(i) Data analysis strategies

Various techniques were applied, as discussed below.

(a) Inductive analysis

Inductive analysis is a theory-building process (Hyde, 2000) that starts with observations of specific instances and seeks to establish a theoretical generalisation (Andrade, 2009) about the phenomenon under investigation. An inductive analysis strategy was thus used in this study to draw inferences about the units of analysis in order to categorize the data and identify their relationships (McMillan & Schumacher, 2001) as they emerge.

Drawing inferences from the data requires that one is immersed in the data (Rabiee, 2004; Walter & Emery, 2005). Therefore, I chose to transcribe the tapes personally so as to immerse myself into and become familiar with the data, so that accurate inferences could be drawn from them. Because the researcher immerses him- or herself in the data, there is some potential for losing valuable information due to preconceptions. In order to safeguard against the loss of valuable information due to personal biases (McMillan & Schumacher, 2000), I constantly read and re-read the collected data to establish codes or themes.

Because the research context or setting is important, an inductive strategy was used (Gibbs, 2007) to generate and interpret the meanings

that the participants attach to the phenomenon of workplace-effective mobility, as expressed in their responses, in the context of their workplace or residence.

(b) Deductive analysis

Because the study focuses both on the discovery of data patterns pertaining to workplace-effective mobility and on the confirmation of criteria that emerged, both inductive and deductive strategies were adopted, in line with Hyde (2000). In this instance, the deductive reasoning strategy was used to explain and compare the findings of the qualitative phase with the existing literature (Gibbs, 2007) in order to achieve the external validity (Andrade, 2009) of the study findings. The theoretical model developed on workplace-effective mobility and the relationships identified between categories of data were also tested for validity against empirical data, as defined by Olsen (2004), because the use of deductive strategies in qualitative research enhances the acceptability of the research findings (Hyde, 2000).

(c) Constant comparison

The data are analysed using the constant comparison method, which enables the determination of relationships between data categories by subsuming emerging categories into a core category of data, explaining the differences in data and developing hypotheses about them (Bitsch, 2005). As the emerging themes need to be grounded in the data, the constant comparison method requires reflexivity from the researcher (McGhee *et al*., 2007) to promote the rigour of the findings (Northway, 2000). Reflexivity implies that the researcher should systematically analyse the study assumptions against other researchers' definitions and understandings (Lynch, 1999) of a phenomenon.

The use of constant comparison is an important feature of Grounded Theory research. In this study, the constant comparison method was used to compare data and concepts derived across focus group sessions with one another in order to ground the findings in the data (Glaser & Strauss, 1967). Based on the process suggested by Glaser and Strauss (1967), the constant comparison method was used in four stages: open coding, axial coding, selective coding and literature comparisons.

Stage One of the qualitative data analysis involved open coding of the data. Prior to coding the data, I familiarized myself with each conversation by searching for individual perspectives and nuances in the language, as described by Daengbuppha *et al*. (2006). Following the advice of Archer (2008), Walter and Emery (2005) and Rabiee (2004), I then transcribed the focus group interview tapes into Microsoft Word documents and reviewed the field notes. I also edited the data for grammar and spelling, and converted participants' names into pseudonyms where applicable. The participants' biographical information was also included to provide contextual data in the study. Furthermore, I converted the edited Word documents into plain text to be compatible with Atlas.ti before I transferred it.

Thereafter, I developed open codes (Bitsch, 2005) or data labels (Brown, *et al*., 2002) by breaking the data down into segments or incidents found in the participants' responses. The data segments from one focus group interview session were then compared with those from other sessions (Shannak & Aldhmour, 2009) in order to conceptualize and categorize data (Brown *et al*., 2002) to achieve data saturation. From the results of the first set of focus group interviews, core categories began to emerge (Jones *et al*., 2005) highlighting affirmative action measures, workplace accessibility, competence, self-motivation, social support and positive self-concept as enablers of workplace-effective mobility.

In Stage Two, the open codes were analysed for relationships and concepts, as recommended by Shannak and Aldhmour (2009), using axial coding and the paradigm model to explore linkages in the data, in line with Pandit (1996). The paradigm model is a technique of axial coding which proposes linkages and looks to data for validation of the core category, context, action/interaction and consequences (Rabiee, 2004). Once it became obvious that the emerging core categories reflected workplace equity (including social support), self-motivation and workplace accessibility, subsequent focus group interviews were increasingly focused on these core categories.

These subsequent focus group interviews therefore focused on testing these core categories for completeness and on the integration of data categories with their properties to form a unified whole, as proposed by Glaser and Strauss (1967). Theoretical coding was done once the core categories were saturated (see Jones *et al*., 2005). In accordance with Grounded Theory methodology, using the participants' own language at all levels of coding can further ground the emerging theoretical model in the data, thereby adding to the credibility of the findings (Chiovitti & Piran, 2003). The concepts, theories or models are thus developed from the socially constructed knowledge of the participants (Daengbuppha *et al*., 2006).

Stage Three of the selective coding involves delimiting the findings by reducing the number of categories and their properties into smaller sets of concepts (Glaser & Strauss, 1967). Therefore, categories and subcategories are integrated with a central concept in order to provide sufficient detail and density (Bitsch, 2005), in this case, in the emerging theoretical model on workplace-effective mobility. Selective codes are then classified into context, conditions, actions, interactions and outcomes (Douglas, 2003). When the data were gathered by more focused collection, categories began to become saturated, at which point, the data collection could stop. Thereafter, the data were

reassembled into a basic social process describing the situation (see Jones *et al*., 2005) that employees with disabilities experience when they engage in workplace-effective mobility behaviours.

Some constant features of data coding are memoing, data charting and mapping. Therefore, three types of memos were written in this study. I wrote code (commentary) memos to provide conceptual labels for the data; theoretical memos to explain the paradigm features and the research process, thereby providing greater depth of understanding of the properties of the focal core concept, as recommended by Douglas (2003); and operational (method-related) memos to explain the directions of the evolving research design (see Pandit, 1996). The data were charted and mapped on the Atlas.ti software program as networks representing emergent concepts and relationships between quotes, thereby enabling the compilation (Rabiee, 2004) of a Grounded Theoretical model of workplace-effective mobility. I then produced a Compact Disc (CD) on the data analysis process. The CD was submitted with the thesis for examination and was destroyed thereafter to protect the confidentiality of participants,

Finally, the themes I had identified were compared with the existing literature for differences and similarities (see Pandit, 1996) in preparation for the development of a theoretical model of workplace-effective mobility, in line with Durant-Law (2005). As indicated above, the comparison of the themes with the existing literature is made after theoretical data saturation has been achieved (Daengbuppha *et al*., 2006). Although the place of a literature review in Grounded Theory is controversial, evidence suggests that, in Grounded Theory, the literature may be used to identify gaps in knowledge and to improve the openness of the study to data collection, coding and writing (Giske & Artinian, 2007). Drawing on McGhee *et al*. (2007), an initial review of the literature was therefore conducted prior to the data collection in order to stimulate theoretical sensitivity, determine questions for the interview schedule,

guide theoretical sampling and provide supplementary validity to the findings. A review of the existing literature thus assisted me in developing my knowledge and identifying the boundaries of previous research, thereby focusing the research and justifying the formulation of the research problem, as described by Williams (1998).

The second review of literature was conducted after the data analysis to compare my results with the literature. According to Verma (2003), the comparison of emergent concepts with the existing literature is mandatory for building theory from data. The use of a Grounded Theory design should not be used as an excuse to ignore the literature (Shar & Corley, 2006).

(d) Interpretive and reflexive analysis

In this qualitative phase of the study, the interpretive and reflexive strategies of data analysis were also used. The interpretive strategy was used to interpret the participant's responses and the subjective meanings they attached to workplace-effective mobility. The reflexive strategy (Welsh, 2002) on Atlas.ti was used to analyse the data.

(e) Synthesis

According to Hofnie-//Hoëbes (2005), synthesis refers to putting together elements or parts of the data to construct a new meaning or pattern which was not previously recognised, in an effort to generate theory. Synthesis, interpretive and reflexive analysis were used interchangeably in this study to identify dimensions and indicators of workplace-effective mobility and construct these into a new meaning towards the compilation of a theoretical model. I also synthesised the results of the focus group interviews with those of the Delphi process in this study to compile a theoretical model of workplace-effective mobility.

(f) Creativity

Creativity was used in the qualitative phase to name categories and identify relationships among these categories and their properties. The use of creativity in this manner yields insights into the data that has been collected (Douglas, 2003) and thus enables the development of a theoretical model of workplace-effective mobility. Analysis of data using the constant comparison method is thus a creative process (Bing, 2007) which progresses until theoretical saturation is reached, that is, when no new insights are obtained, no new themes are identified and no issues arise on a category of data (Bowen, 2008).

4.7.1.5. Measures to ensure trustworthiness

As indicated in Section 1.8.5, there are some criteria available to judge the trustworthiness or conceptual soundness of a study (Bitsch, 2005; Brown *et al*., 2002). These criteria are credibility, dependability, transferability and confirmability. The sections below explain how these criteria were observed in the study.

(i) Credibility

Credibility relates to the internal validity of a study (Merriam, 1998). It is achieved by establishing patterns in the data and their possible relationships in order to develop plausible explanations (Andrade, 2009) of the phenomenon, in this case, of workplace-effective mobility. Before these patterns in the data were established, tapes were transcribed and sent to participants for verification, thereby ensuring the accuracy of data prior to their analysis. This process of sending transcripts to participants for verification is called a member check (Bitsch, 2005).

Furthermore, credibility was achieved by collecting and analysing the data, and comparing them to emerging categories until no new

categories emerged. According to Andrade (2009), the process of collecting data until no new categories emerge is called theoretical saturation or sufficiency. Drawing on Verma (2003), credibility was also achieved by using multiple sources of evidence, for example, four disability groups in four provinces.

The process of exploring data from multiple and different sources or research sites is called data triangulation (Brown *et al*., 2002). Data triangulation is necessary to enhance the validity of the data (Holliday, 2002). The sequential mixed method design of the study and the use of multiple sites (different provinces) for data collection are examples of triangulation aimed at ensuring credibility. According to Sheldon (2003), site triangulation is necessary to reduce the effect of particular local factors. Sequential mixed methods provide cross-data checks (Schur *et al*., 2005), thereby ensuring credibility and a diverse construction of realities (Gofalshani, 2003).

Because computers are less concerned with emotional experiences and more with structure (Goulding, 1999), the use of Atlas.ti as a tool for data analysis can further assist in ensuring the credibility of research findings (Welsh, 2002).

(ii) Transferability

Transferability relates to external validity (Rolfe, 2006) or generalizability of the findings to other settings (Bitsch, 2005). It was enhanced in this study through purposive sampling and thick descriptions of the research process, participants, methodology, findings and emerging theory (Brown *et al.*, 2002). Thick description gives the context of an experience, states the intentions and meanings that organised the experience and reveals the experiences as a process of knowledge construction (Holliday, 2002).

According to Hartley and Muhit (2003), because the social aspects of disability have been ignored and under-investigated in a quantitative research regime, the collection of context specific knowledge enhances the transferability of qualitative research. The findings of this study phase were also compared with the existing literature in order to achieve theoretical generalisations, as suggested by Andrade (2009), or the transferability of the findings.

(iii) Dependability

Dependability is similar to reliability and focuses on the stability of findings over time (Bitsch, 2005; Roberts *et al*., 2006). However, this kind of study does not aim to produce consistent results but to present a chain of evidence, which contributes to the trustworthiness of findings, thereby producing the kind of trusted findings that are meaningful to the reader (Andrade, 2009). The presentation of a chain of evidence ensures that the data collection process is consistent (Endacott, 2004) and the findings are trustworthy (Stiles, 1993).

In order to ensure the dependability of the research process (Bowen, 2008), I provided clear descriptions of the data and theoretical saturation in the findings section of the study. Based on Roberts *et al.*'s (2006) logic, the dependability of the findings was also enhanced by recording the non-verbal cues using a video recorder and engaging with the data intensively (for approximately eleven months) to find links between the interpretations and the data.

Dependability was further optimized in the study through the employment of the services of an inquiry auditor (see Brown *et al*., 2002). For this purpose, Professor Connie Moloi was involved as a research auditor because of her extensive postgraduate supervision experience and knowledge of qualitative research designs. According to Roberts *et al.*

(2006), dependability is aimed at achieving inter-rater reliability between the findings and the analyses.

(iv) Confirmability

Confirmability parallels objectivity in presenting the findings (Rolfe, 2006) and was achieved in this study by acknowledging the underlying meta-theoretical assumptions and my personal involvement with the participants, as Bitsch (2005) suggests. I also maintained an interactive engagement with the participants and the data, thereby achieving higher levels of accuracy and consensus by continually revisiting facts, feelings, experiences, values and beliefs collected and interpreted (Cho & Trent, 2006). Ultimately, an audit trail of the raw data, the research process and verbatim transcripts should be kept (Brown *et al*., 2002), and in this study, all this material was written to CD.

4.7.1.6. Ethical measures

It is essential for a study such as this to observe ethical considerations, because it involves vulnerable participants who are often subject to research exploitation (Lutabingwa & Nethonzhe, 2006). Therefore, the ethical measures taken to safeguard the rights of participants with disabilities are presented in this section.

(i) Acknowledgements

The efforts of consenting gatekeepers were acknowledged during the focus group interview sessions with participants as follows: '*I wish to express my heartfelt gratitude to the project coordinator who made the necessary arrangements for this interview. I wish to take this opportunity to also thank you very much for your participation in the study on a Saturday*' (P2: EXPERIENCES OF GAUTENG PARTICIPANTS – Physically Disabled 122008.txt – 2:5, 37:41). Acknowledging participants in this manner furthers

the ethical principle of respect for persons and community espoused by McQueen (2008).

(ii) Aligning processes

In order to ensure minimal disruption to the business commitments of participants, the focus group interviews were scheduled to minimize interference with the group members' daily activities. Section 4.7.1.1(b) indicates the need to align research processes and the daily life of participants. Such alignment ensures compatibility between research activities and normal operations, minimizing disruptions in the daily lives of participants (Stiffman *et al*., 2005).

(iii) Anonymity

Participants' identities were kept anonymous. Where names were disclosed, they were converted into pseudonyms. Therefore, I advised participants as follows: '*[B]ecause participation in the study is anonymous, should you mention your names, they will be changed to pseudonyms in order to protect your identity*' (P3: Free State – Focus Group with the Blind 122008.txt – 3:2, 12:14). Ethical conduct in the study thus included protecting the anonymity and privacy rights of the participants by not recording their names during the data collection or by changing these to pseudonyms when the names were in fact provided by participants, as suggested by Huysamen (1994) and Roberts *et al*. (2001).

(iv) Avoiding harm to participants

Although no harm was intended, one blind participant clearly experienced some intense emotion. In relating his story, there was a pause, followed by a rushed emotional statement: '*...that is the story for me* [in a rush]. [Interviewer is silent for a while]*'* (P1: Free State – Focus Group

with the Blind 12 2008.txt – 1:22, 62:64). I empathized by remaining silent for a while and listening with concern and compassion. This strategy is aligned with the need for empathy (Watts, 2008), and listening with concern and compassion (Ritchie & Lewis, 2005) when participants become emotional.

(v) Confidentiality

The nature of the study implies that a lot of private and confidential information would be collected from participants. Accordingly, they were assured of their right to confidentiality (see Kellett & Nind, 2001), pointing out, however, that my promoters might need to look at the data for verification purposes, but that all records would be destroyed in the end. According to Roberts *et al*. (2001), this conditional assurance of confidentiality is required in circumstances where the confidentiality of research data may not be fully protected. Such a conditional confidentiality assurance was provided as follows: '*[T]he documents that will be generated through the tape transcriptions will be kept confidential until the report has been accepted and passed. At that stage, such documents will be destroyed to protect your rights as participants. However, please note that my promotors may need to verify some facts regarding the study and they may need to access these documents*' (P7: Western Cape – Managerial Candidates – Deaf 122008.txt – 7:5, 22:27).

(vi) Empowerment

During the focus group interviews, I supplied information to participants which stimulated the discussions and provided them with knowledge of the subject matter, thereby empowering them (P7: Western Cape – Managerial Candidates – Deaf 122008.txt – 7:67, 295:301). As participants asked several questions or made certain remarks about matters which needed clarification, I responded to these questions and remarks so as to empower them (P8: Western Cape – Operational Employees – Deaf 12 2008.txt –

8:117, 511:516), for example, one participant asked: *'Why are deaf people of interest in the working environment?*' (P8: Western Cape – Operational Employees – Deaf 12 2008.txt – 8:114, 502:503). The empowerment ethic corroborates the argument by Barnes and Mercer (1997) that researchers should place their skills and knowledge at the disposal of those being researched. As a result of these empowering interventions, a participant expressed thanks for my '*patience and the interesting discussions. First time it happens that someone came to conduct research on the deaf culture or life or business. I have learnt a lot and I hope you will be successful with your research*' (P8: Western Cape – Operational Employees – Deaf 12 2008.txt – 8:156, 713:716).

(vii) Ethical clearance for the study

The ethical clearance for the study was granted in November 2006 after a pilot phase had already been conducted. Between the pilot and main study phases, I made enquiries regarding the ethical clearance for the study with the University of Pretoria's officials. I got feedback that '*the title registration was lost by the ethical committee, but they found it*' (P5: RE Fwd Re PhD – progressScannedM1.txt – 5:1, 24:25). When the clearance was granted, I shared this information with the disability organisations: '*Finally, my study's ethical clearance has been provided by the University of Pretoria, where I am registered'* (P13: Re Request to conduct interviews for a Doctoral Study Scanned4.txt – 13:3, 59:60).

The importance of ethical clearance for the study lies in ensuring respect for the participants (Rab *et al*., 2008) and enhancing the public trust of participants and respect for their communities in the research process (McQueen, 2008). Therefore, it was necessary to have ethical clearance for this study.

(viii) Inclusivity

In order to minimize the potential for exclusion bias, all the disability organisations identified on the Internet were invited to participate in the study in writing, and without coercion or prejudice, in line with Roberts *et al*.'s (2001) stance. These organisations were also requested to provide information on other organisations that could be invited to participate in the study. The following response was received from one of them: '*[W]e are situated in the Free State, and will be able to assist in this Province. If you want assistance in other provinces as well, we can help you with the contact details of the relevant people. I will even speak to them before you contact them if you so request*' (P11: Scanned.txt – 11:8, 15:18).

(ix) Reciprocity

In order to reciprocate their efforts and inputs into the research process, I promised the participants copies of the final research report, in line with Huysamen (1994) and Roberts *et al*. (2001), through their disability organisations, as follows: '*At the end, you will receive a copy of the report for your information, via the project coordinator's office*' (P2: Pilot Focus Group Session – Gauteng – Physically Disabled 09092006.txt – 2:59, 220:221).

(x) Reflexivity

As the discussions on the research topic proceeded, I realized that the delimitation of the research was slightly flawed. I therefore acknowledged these limitations and shared them with the participants as follows: '*I must admit my own limitations; when I chose the topic, of course, I did not know the different manifestations of physical disabilities until I interviewed participants with physical disabilities …*' (P7: Western Cape – Managerial Candidates – Deaf 122008.txt – 7:128, 670:680). By doing this, I was adhering to reflexivity as an ethical value of objectivity and ideology (Lutabingwa & Nethonzhe, 2006).

(xi) Refreshments

The NID, APD (Chatsworth), the retail store and QASA (Ashley) provided their own refreshments, but I offered refreshments (see Huysamen, 1994; Roberts *et al*., 2001) to the participants from QASA (Shangri-La), the Blind and APD (Bloemfontein, Free State). For instance, at the end of focus group interviews with the latter participants, I said: '*I invite all of you to a lunch in this coffee shop, on my account. It is not buying your information, but [this] is a token of appreciation for the time sacrifice you have made to be here with me today*' (P4: Free State – Physically Disabled.txt – 4:107,507:509).

(xii) Reimbursement of costs

I acknowledged that participants might have incurred travel costs to the focus group interview sessions and promised to reimburse such costs: '*I realise that you had to travel at your own costs, and I undertake to reimburse your travel costs at a rate that you and I may agree upon*' (P3: EXPERIENCES OF GAUTENG PARTICIPANTS – Physically Disabled 122008.txt – 3:8, 41:44). In fulfilling this promise, I asked participants how much would be reasonable to reimburse them. This statement provoked some controversy until a participant appealed for reason. He said: '*No, please do not try to make money out of our brother. Remember, he is the one paying for this and not the university. I propose that he rewards us according to what he can afford. We are not here to make money but to assist our course as well...*' (P3: EXPERIENCES OF GAUTENG PARTICIPANTS – Physically Disabled 122008.txt – 3:90, 322:331). The reimbursement of participants' costs was thus not used as a coercive measure (McQueen, 2008) but to compensate participants for their time, effort and inconvenience (Roberts *et al*., 2001).

(xiii) Respect for participants

Drawing on McQueen's (2008) principles of respect for persons and the community, I offered my apologies for coming late to the Ashley participants as follows: '*I have to profusely apologise for being two hours late. I lost my directions getting here and the 2010 road works have also seriously delayed the traffic. I tried calling the number I was given to inform you of my possible lateness, but there was no response. I hope you would still be willing to participate in the research I am conducting*' (P8: KZN – QuadParaAssociation – Physically Disabled.txt – 8:2, 12:17).

(xiv) Voluntarism and informed consent

Because the study involves employees with disabilities, informed consent and voluntary participation were upheld. In upholding these ethical values, I disclosed information pertaining to the research goals and the uses of collected data, as recommended by Roberts *et al*. (2001). Therefore, I mentioned to participants that '*the study is about identifying indicators that will be developed into criteria, which employers can use to select suitably qualified employees with disabilities*' (P8: Western Cape – Operational Employees – Deaf 12 2008.txt – 8:4, 34:36).

I also indicated to those that I saw during the pilot phase that it was '*my second visit here with a view to collect information on workplace-effective mobility of employees with disabilities. Some of you may recall that I was here in 2006 and the reason I came back is that my topic has been amended based on the inputs I received back then*' (P8: KZN – QuadParaAssociation – Physically Disabled.txt – 8:4, 23:26).

Furthermore, participants were assured of their right to withdraw from the study, thereby adhering to the value of voluntarism (Kitthananan, n.d.). In this regard, I said to participants that '*participation is also voluntary and should you feel uncomfortable in the process of discussing this topic, you*

are most welcome to withdraw your participation without negative consequences to you' (P4: Gauteng – Speech Impaired experiences.txt – 4:37, 156:158). Disclosure of information therefore enhanced voluntary participation in the study, as participants were able to provide informed consent thereto. In addition, to provide relevant information about the study, participants were also informed about the use of recording devices during data collection. I therefore mentioned this to participants and sought their views thereon as follows: *'I must just warn you that I am video-recording the meeting and I would like your permission to do that. There is also a tape recorder which I will use to listen to the discussions at a later stage. Is this all right with you?' Interpreter:* [After interpreting] *'It is OK.'* (P8: Western Cape – Operational Employees – Deaf 12 2008.txt – 8:3, 26:32).

It was not my intention to reduce informed consent to legal documentation (McQueen, 2008) but to safeguard the human rights of participants in the study. For this purpose, I compiled consent forms and memoranda of understanding and circulated these to disability organisations as part of the access negotiation process. When circulating these documents, I indicated that they were intended '*to protect your rights as participants* and … *to enable … authorization of the interviews*' (P8: Western Cape – Operational Employees – Deaf 12 2008.txt – 8:3, 26:32). During the focus group interviews with participants, I also requested their consent verbally (see Greacen Associates, 2007), especially on the use of recording instruments.

The positive effects of observing these ethical measures were evident in the willingness by participants to share their stories. Despite my late arrival, an Ashley participant jokingly responded: '*We were thinking that in Gauteng you do not stick to time; but you are welcome to our village. Anyhow, the number you have called belongs to our neighbour and everyone that tries to reach us defaults there. We got a message of your coming and we are happy to participate in your study if our inputs will*

add any value at all. We read most about your research from your correspondence with our National Director' (P8: KZN – QuadParaAssociation – Physically Disabled.txt – 8:8, 34:39).

4.7.2 Phase 2: Confirmation of the identified criteria using the Delphi technique

The Delphi technique was used in this study to confirm the criteria on workplace-effective mobility which were identified through the focus group interviews in the previous phase. The Delphi technique is defined as an iterative process of collecting and distilling expert judgements (Keeney, Hasson & McKenna, 2001) through a series of questionnaires interspersed with feedback (Skulmoski, Hartman & Krahn, 2007) to achieve consensus. It offers the following advantages in a research process (Skulmoski *et al*., 2007):

- anonymity, which encourages participants to express opinions freely, without pressure to conform to the views of the group;
- iteration, which allows participants to change their views as the data collection progresses from one round to the next;
- controlled feedback, which provides an opportunity for Delphi participants to clarify or change their views; and
- statistical aggregation, which allows for a quantitative analysis and the interpretation of data.

There is some controversy in the literature regarding the underlying philosophy of the Delphi technique. This disagreement is attributable to its cross-paradigm use. Delphi techniques tend to favour the positivist paradigm of a single reality for consensus-building, and an objective and uninvolved position for the researcher (Hanafin, 2004). These techniques are, however, also amenable to qualitative, interpretivist studies aimed at interpreting and understanding the phenomenon under investigation (Skulmoski *et al*., 2007) through consensus among experts (Cegielski, Reithel & Rebman, 2004).

In this study, the Delphi technique was used as a mixed method design to interpret the qualitative responses and quantitative Likert scale responses of experts. According to Hanafin (2004), the use of descriptive statistics, in other words, frequency distributions and experts' ranking of research issues, represents a quantitative paradigm. By contrast, making sense of expert qualitative inputs reflects a qualitative paradigm. It is thus a method that supports interpretivist studies by developing an agreed view or shared interpretation of an emerging topic from a group of experts (Day & Bobeva, 2005). Its interpretivist character is evident in the opportunity that it offers participants to process group opinions and change their positions towards consensus in relation to the feedback they receive through the iteration of rounds.

The classic confirmatory Delphi technique was thus used iteratively to distribute a predetermined list of criteria to a panel for their evaluation and consensus. It is classic because it provides a statistical group response (Hanafin, 2004) aimed at consensus-building on identified criteria of workplace-effective mobility. Because experts are required to confirm a pre-determined list of criteria (from focus group interviews), the Delphi process used was confirmatory (Day & Bobeva, 2005). Therefore, I did not use an exploratory Delphi process, which seeks views through open-ended questions (Day *et al*., 2005). The use of the Delphi technique in this manner is popular and has been effectively used in disability studies aimed at the development of criteria by involving experts (Elwyn *et al*., 2006).

The term 'expert' is subjective and requires an explanation of what it means in some measurable terms in a given study (Cegielski *et al*., 2004). According to Cegielski *et al*. (2004), experts in Delphi studies are typically defined by using criteria such as years of professional experience, a job or position title, level of education and professional certifications. Therefore, I defined an 'expert' for this study on the basis of professional certification, namely as industrial and organisational

psychologists, because the well-informed judges in the field of criterion development are work and organisational psychologists (Altink *et al*., 1997).

Operationally, the application of the Delphi method involves three steps:

- Step 1: the selection of expert panellists;
- Step 2: the collection of topic-relevant issues; and
- Step 3: the ranking of reported issues.

These three steps in the Delphi method are explained in the sections on population and sampling, data collection and analysis, respectively.

4.7.2.1. Sampling

The first step in conducting the Delphi study was to identify a group of informed individuals or experts (Keeney *et al*., 2001) in the area of selection and placement. Because it uses experts, the Delphi method does not require random samples, but uses a purposive sample. Sampling was thus mainly done through referrals, and was thus purposive. One participant informed me of another possible participant: '*If you are still looking for participants, G... F… indicated his availability to participate in the Delphi group as well*' (P10: FW Invitation to Participate in Delphi rounds Scanned2.txt – 10:5, 143:144). Another participant wrote: '*OK, I can certainly refer you to several very experienced psychologists, who are intimate with disability; some of them being PWD's* [people with disabilities] *themselves*' (P21: RE Disability ConsultantScanned.txt – 21:1, 8:10). Yet another thought that he should first participate and see who else to refer me to for participation. He said: '*Once I have started my participation, I will be in a better position to identify/suggest relevant industrial psychologists that could be approached*' (P35: RE Invitation to participate in a Doctoral Study Scanned1.txt – 35:2, 11:13).

To ensure effective purposive sampling, therefore, criteria were set pertaining to participants' backgrounds in and experiences of the target

issue, their capabilities to contribute and their willingness to revise their initial or previous judgements towards attaining consensus (Hsu & Sandford, 2007). The participants thus had to meet the following criteria: '*At least five years of experience/practice focusing on people living with disabilities; At least five or more years of registration with the HPCSA; No disciplinary records against them; Conducting research in the disability area; A mixture of gender, race and area (locality); At least have doctoral degree as a qualification; and Those with an e-mail connection as the contact will be made electronically'* (P46: RE Request for databaseScanned.txt – 46:3, 35:48). According to Day and Bobeva (2005) and Skulmoski *et al*. (2007), the selection of experts should be based on the following criteria:

- knowledge and experience with employee selection processes;
- capacity and motivation to engage with the inquiry process (Hatcher & Colton, 2002) – the Delphi panel of experts was thus selected for their expertise;
- sufficient time to participate in the envisaged rounds of e-mail data collection; and
- the ability to articulate judgments (Guion, 1961) – the panel of industrial and organisational psychologists made value judgements on whether the criteria identified were representative of workplace-effective mobility and which criteria are more important in the study, avoiding the potential errors of a single expert judgement (Pretorius, 1996).

Industrial and organisational psychologists were thus recruited to the study because of their experience in organisational and workplace issues, the assessment of employee behaviour and the valuable inputs they could make in the process of confirming criteria for the workplace-effective mobility of employees with disabilities. Therefore, they are deemed to share a common interpretivist paradigm of the study, namely studying employees with disabilities in their natural setting. Because clinical and counselling psychologists tend to use a clinical or medical perspective in managing disability, they were not used.

However, on the basis of these criteria, one participant indicated that he or she was disqualified because he or she did not have the experience sought for participation (P44: RE PhD StudiesScanned.txt – 44:1, 8:12). Another participant thought that the referral was misunderstood because she is an educational psychologist (P18: Participation in Doctoral study Scanned.txt – 18:1, 8:9). Despite feeling excluded from the study, yet another participant indicated: '*I would be happy to continue the dialogue if you think it would be useful, but regarding your need for psychologists, perhaps you need to communicate directly with L…*' (P21: RE Disability ConsultantScanned.txt – 21:2, 69:72).

(i) Negotiating access to participants

Negotiating access involved several strategies, such as requests for databases, telephonic discussions, website searches, discussions with consulting firms, personalized invitations, and reminder e-mails.

Request for databases:

Electronic contacts were made with the Health Professions Council of South Africa (HPCSA) requesting a database of registered industrial psychologists in the country: '*I understand that you may not be keeping a database of practitioner's practice. Would it be possible to assist with a database of practising Industrial Psychologists? Would it also be possible for HPCSA to assist with a placement of a call for interest, through which I could be able to solicit participants?*' (P47: RE Request for databaseScanned1.txt – 47:3, 38:43). Regrettably, the HPCSA could not assist for the following reasons: '*…regretfully the HPCSA is unable to assist with the requested information as we do not have access to information i.r.o the Practitioner's Practice/employment & Research participation Details*' (P47: RE Request for databaseScanned1.txt – 47:2, 58:61). Referrals were, however, made to other possible sources of information in this regard: '*…as mentioned before we do not record the Practice Details of*

the Practitioners. For information i.r.o practitioners in Private Practice – contact the Board of Healthcare Funders (BHF), Tel: (011) 537 0200 or email: stats@bhfglobal.com / bhf@bhfglobal.com For Information i.r.o Practitioners in Government institutions – contact The Dept of Health, Tel: (012) 312 0000 or website: www.doh.gov.za' (P47: RE Request for databaseScanned1.txt – 47:1, 8:18)

I further solicited information from the Society for Industrial and Organisational Psychologists of South Africa (SIOPSA), which yielded no results because the society did not respond.

Website searches:

Failing to obtain access to the databases of registered industrial psychologists, I conducted website searches for the same information. The searches yielded some results; and I corresponded electronically with identified potential candidates: **'***I have found your details on the website and have identified several names in your company of Industrial Psychologists who could levy vital inputs to the study*' (P36: RE Invitation to Participate in Delphi rounds Scanned 7.txt –36:1, 122:124).

Telephonic conversations:

In other cases, I telephonically extended invitations for participation to those industrial psychologists referred to me: '*we telephonically discussed (as referred by T… M…) a possibility of involving your company in a doctoral study which I am busy with at the University of Pretoria*' (P13: Invitation to participate in a Doctoral Study.txt – 13:3, 9:11).

Discussions:

Also, I entered into discussions with consulting companies who specialize in recruitment and selection for assistance with participants for the study: '*I am forwarding the questionnaire as discussed. Please check with your colleagues for their interest in participating*' (P40: RE k Delphi Technique – Revised Edition – Round One1 Scanned 2.txt – 40:2, 52:54).

Personalized invitations:

I sent out electronic invitations to identified organisations and/or individuals requesting them to indicate their willingness to participate in the study: '*Please indicate your willingness or consent to have your colleagues (only Industrial Psychologists) in your company to participate in this kind of a study. Should you so consent, I would like to have their e-mail addresses to facilitate the process, please*' (P8: FW Invitation to participate in a Doctoral Study3.txt – 8:3, 34:38).

Reminders:

Where responses were not forthcoming, I then wrote reminder e-mails to participants: '*I notice that you may be busy, but I needed to find out if you would be available for the request below*' (P7: FW Invitation to Participate in a Doctoral Study.txt – 7:1, 9:10). The reminders were also necessary because some of these electronic invitations bounced: '*I am just following up on a request below. I think there was a problem with the e-mail system because the request bounced back to me*' (P32: RE Invitation to participate in a Doctoral Study Scanned 5.txt – 32:2, 26:28).

Otherwise, participants confirmed their willingness to participate in the study and promised to ask their colleagues to also participate: '*I have sent out a request to some of my colleagues to invite them to participate*' (P9: FW Invitation to Participate in Delphi rounds Scanned.txt – 9:1, 11:12). Also, one participant indicated that the study '*sounds interesting*' (P21: RE Disability ConsultantScanned.txt – 21:6, 130:130) and particularly expressed an interest in seeing '*how accessibility has influenced your findings*' (P21: RE Disability ConsultantScanned.txt – 21:7, 141:142).

4.7.2.2 Sample size

Because the group was homogeneous, consisting of industrial and organisational psychologists, a purposive sample of 15 experts was recruited to the study, in line with Skulmoski *et al*. (2007), as a

homogeneous panel for the two rounds of Delphi (Beecham *et al*., 2005). Most studies using Delphi have involved panels of between 15 and 35 people to develop or test theories, gain feedback, evaluate and support the development of criteria (Gordon, 1994).

4.7.2.3 Data collection

A website was constructed with an interactive database using the Modular Object-Oriented Dynamic Learning Environment (Moodle) for discussions relating to confirming the content validity of identified criteria for workplace-effective mobility. Moodle is a software package designed for online discussions (Moodle, 2010), which operates on a free open-source license and enables modification of responses and distribution thereof for interaction among participants (Knight *et al*., 2006). The Moodle discussion forum was thus designed using the expertise of the Vaal University of Technology's webmaster. An online questionnaire was compiled based on information from the focus group interviews and placed on Moodle (see Annexure D). A space for qualitative comments was also provided. Clear instructions on the use of the Moodle system, and rating on a five-point Likert scale, as well as process feedback, were provided to participants.

Use of the Moodle system:

The Moodle system was designed to log answers in batches, otherwise participants would be timed out. Therefore, to overcome this challenge, participants were instructed as follows: '*While there, you will see a number of questionnaires but you only need to access DEPLHI QUESTIONNAIRE ROUND 1. After completing the questionnaire you need to click on SUBMIT QUESTIONNAIRE at the end. Please note that you need to complete the questionnaire to be able to submit it, otherwise the system will prompt you to complete those questions you may have skipped*' (P2: First Round of Delphi.txt – 2:2, 36:42).

Because of the timeout feature on the system to enable coherent and simultaneous analysis of responses, I advised participants as follows: '*A closing date and time has been programmatically determined, i.e. 25 April 2009 at 13:00. Beyond this timeline, you will not be able to make any further inputs to the system*' (P1: Delphi Round Number One.txt – 1:13, 213:224).

Rating scale:

Instructions were also provided on the use of a five-point Likert scale as follows: '*Rate each indicator on a subjective 5-point ordinal scale (where 1 is low and 5 is high)*' (P1: Delphi Round Number One.txt – 1:11, 179:185). I also indicated to participants that the envisaged duration of completing the questionnaire was one hour (P1: Delphi Round Number One.txt – 1:6, 127:134).

Feedback:

Responses gathered in one session were provided to participants in subsequent rounds by way of a revised questionnaire. Here too, I advised participants, as follows: '*After receiving your information and suggestions, I will compile another questionnaire for round two, for verification purposes. Further instructions will be provided at that stage. Should you need to clarify anything please do not hesitate to contact the undersigned*' (P3: First Round of Delphi2.txt – 3:1, 47:51).

Process details were also shared with participants by way of feedback, for example, '*I have gathered data from four provinces and am finalising a database for the envisaged online Delphi rounds*' (P13: Invitation to participate in a Doctoral Study.txt – 13:1, 14:16). Furthermore, mishaps experienced during the data collection process were disclosed to participants, for example: '*It is with a deepest sense of regret to advise you that I have experienced some technical problems with the Delphi round one attempt. Due to a common username and password being provided, I discovered that if one participant completes the questionnaire, the other participants could not participate. My technical colleagues and I*

have since attended to the problem. You are thus humbly requested to try again using the following …' (P10: FW Invitation to Participate in Delphi rounds Scanned2.txt – 10:1, 8:13).

A rationale on how the questions were compiled was also provided as background in the questionnaire, as Day and Bobeva (2005) suggest, for example: '*The indicators used in the questionnaire have recently been identified from focus group discussions with participants recruited across four types of disabilities, i.e. blind, deaf, physical and speech-impaired. For purposes of this project, workplace-effective mobility is defined as the willingness and ability of EwDs* [employees with disabilities] *to gain access to job opportunities, perform effectively and develop the capacity to enjoy a good quality life. The study is in partial fulfilment of a PhD qualification at the University of Pretoria, aimed at identifying criteria for workplace-effectiveness of EwDs. The goal of this process is to clarify, refine and expand the identified indicators in order to ensure their representativeness to the concept of workplace-effective mobility of employees with disabilities (EwDs)*' (P20: RE Delphi Round Number One Scanned.txt – 20:3, 43:59).

In order to allow access to Moodle, the industrial and organisational psychologists were each assigned a username and password to enable their participation in the discussion forum. According to Hatcher and Colton (2002), the experts should be assigned pseudonyms to ensure anonymity. The following quote illustrates how this was done in the study: '*the link to the questionnaire and login requirements is as follows: http://196.21.64.1 15/mod/questionnaire/view.php?id=489 3 Username: Delph21 Password: Delph21*' (P1: Delphi Round Number One.txt – 1:10, 155:168).

Computer-based Delphi rounds overcome the problem of turnaround time experienced in paper-based methods (Miaskiewicz & Kozar, 2006); and data can be gathered where personal contact is not possible due to

time constraints (Day & Bobeva, 2005). The e-mail Delphi has the following advantages (Meho, 2006):

- It reduced costs associated with long-distance travel and document transcriptions by online receipt of responses. In this regard, a central data repository was developed on Moodle with the assistance of the webmaster.
- Industrial and organisational psychologists were recruited via email correspondence. In the event of non-responses, the researcher continued to invite new participants in accordance with the requirements of theoretical sampling.
- Informed consent could be obtained from the participants prior to participation in the study. The anonymity of e-mail interviews is ensured by the absence of face-to-face contact.
- Participants can respond in a familiar environment, such as their home or office, thereby making participants feel more relaxed and comfortable.
- Own experiences are constructed through dialogue and interaction between participants and the researcher.

The Delphi data are collected until consensus among participants has been reached, at which point the data collection process is stopped (Delbecq, Van de Ven &, Gustafson, 1975). Although two Delphi rounds with experts were involved, an initial piloting of the Delphi questionnaire was required. Therefore, a pilot phase preceded these two main Delphi rounds. The first of the two main Delphi rounds focused on confirming criteria for workplace-effective mobility and the second round on building consensus on the criteria. These rounds are explained below.

(i) The pilot round

The focus group interview data were used to develop a Delphi survey questionnaire which was subsequently piloted on a purposive sample of five industrial and organisational psychologists for the following reasons:

- to review its initial readability (Altink *et al*., 1977);
- to determine the level of participants' understanding of questions, response difficulties and relevance (Beecham *et al*., 2005);
- to ascertain the clarity, comprehensiveness and acceptability of concepts used (Tafforeau *et al*., n.d.); and
- to test the functionality of the Moodle platform as a discussion forum.

(ii) Round One: Confirmation of identified criteria for workplace-effective mobility

Traditionally, Round One is used to generate ideas by asking the panel members for their responses to or comments on an issue. In this study, Round One was used to solicit expert opinions on the definition, dimensions and categorisation of identified indicators of workplace-effective mobility on a predetermined questionnaire.

In this round, industrial and organisational psychologists were thus requested to confirm criteria for workplace-effective mobility by ranking them in the order of importance and relevance, using the five-point Likert Scale. According to Cascio (1995), the five-point Likert scale is most commonly used with the Delphi technique because of its reliability in judging the ratings. Industrial and organisational psychologists were therefore asked to rate the definition, dimensions and categories of workplace-effective mobility identified from the focus group interviews on the Likert scale from 1 to 5 to indicate the extent of importance (1 = less important and 5 = most important). They were also requested to provide comments pertaining to their respective ratings for analysis and incorporation into the subsequent round.

To enable a fruitful voicing of opinions, industrial and organisational psychologists were provided with a definition of workplace-effective mobility developed through the focus group interviews, thereby contextualising the Delphi rounds.

(iii) Round Two: Consensus-building

In this round, industrial and organisational psychologists were requested to indicate their agreement or otherwise on the categorised indicators of workplace-effective mobility, with a view to building consensus.

4.7.2.4 Data analysis

After the first round, I aggregated the ratings and summarized the participants' comments, as Elwyn *et al*. (2007) suggest. The responses from the industrial and organisational psychologists were both qualitatively and quantitatively analysed. The quantitative analysis of data involved the use the central tendency statistics of mean (Ali, 2005; Hsu & Sandford, 2007), while the qualitative analysis was performed through a content analysis of participants' responses on Atlas.ti. The analysed responses were then presented as feedback in the subsequent round for consensus to be reached on them, as Graham, Regehr and Wright (2003) recommend in line with the Delphi tradition (Keeney *et al*., 2001). According to Hanafin and Brooks (2005), the provision of feedback between rounds and the identification of consensus represents the basic purposes of data analysis using the Delphi technique. The 70% rule using the mean in the five-point Likert-type scale analysis (Hsu & Sandford, 2007) was used to decide whether or not consensus had been reached.

Other measures of consensus used include the stability of participants' votes between rounds and participation rate (Day & Bobeva, 2005). Regarding participant votes between rounds, the threshold is that less than 15% changes in the votes should occur. In respect of the participation rate, a drop of 40% (maximum) between rounds (Day & Bobeva, 2005) is acceptable.

4.7.2.5. Ethical measures

As in the qualitative phase of the study, the ethical measures of confidentiality, anonymity, voluntarism and respect for participants were observed in this phase.

4.7.2.6. Validity and reliability

The piloting of a Delphi questionnaire to verify the clarity, relevance and representativeness of the criteria for workplace-effective mobility through a panel of experts (Roberts *et al*., 2006) is sufficient to ensure the content validity of the study (Keeney *et al*., 2001). Iterations in the data collection, as well as the consensus reached by panel members, establish face validity and concurrent validity (Hennessy & Hicks, 2001).

Regarding the reliability or consistency of the data collection instrument (Endacott, 2004), however, the Delphi technique has been criticized for having no proven reliability (Keeney *et al*., 2001). Therefore, the controlled feedback between rounds in the Delphi is designed to reduce the effect of researcher bias (Hsu & Sandford, 2007) and to ensure reliability. The reliability of the research findings is commonly determined through a replication of the Delphi study (Hennessy & Hicks, 2001), which future research on criteria for workplace-effective mobility of employees with disabilities may satisfy.

4.7.2.7. Potential research bias

The Delphi process has been criticized for being subject to bias because the investigator limits the scope of the issues to be evaluated by the panellists. The absence of discussions in the Delphi method and any consensus that the group appears to have reached can only derive from the information provided to it by the investigator (Graham *et al*., 2003), thereby creating researcher bias. Bias in online research relates to self-

selection and dropout (Krautt *et al*., 2004). These risks were addressed in the study through purposive sampling and electronic follow-ups.

4.7.2.8. Measure to ensure trustworthiness of the findings

Because of the cross-paradigm functionality of the Delphi method as quantitative (Hanafin, 2004) and qualitative methodology (Skulmoski *et al*., 2007), it is also important to safeguard the trustworthiness of the qualitative findings in the Delphi phase. Therefore, in this study, the trustworthiness of the findings was controlled for by creating a database for responses, indicating the trail followed towards consensus.

The audit trail is available for audit purposes and is incorporated in the CD that I developed. According to Sadleowski (1986), the rigour of Delphi studies can be improved by an electronic audit trail. Such audit trails should indicate decisions on all methodological and analytical processes from the beginning to the end (Koch, 1994).

4.8 SUMMARY

Because an emancipatory paradigm was adopted in this study, this chapter explained a sequential mixed method design as the most appropriate design for the study. The qualitative phase of identifying criteria using focus group interviews and compiling a theoretical model of workplace-effective mobility was thus explained first, followed by a discussion on the quantitative phase of confirming the identified criteria using the Delphi technique and a Likert scale.

A distinction between methodology and methods was made, and the Grounded Theory methodology used in the study was explained. The sampling, data collection and data analysis methods and strategies used in the qualitative and quantitative phases of the study were sequentially

presented, together with the measures to control bias and uphold ethical standards in the study.

Having explained the design and methodology of the study, the research results achieved are presented sequentially in the following chapters. Chapter 5 presents the results from the qualitative phase, which used focus group interviews. Chapter 6 presents the results from the quantitative phase, involving the use of the Delphi technique and Likert scale.