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EXPERIENCING PSYCHOLOGICAL OWNERSHIP: A QUALITATIVE STUDY

by

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ABSTRACT

In recent years, attention has increasingly been given to the concept of *psychological ownership* in the work context. *Psychological ownership* can be seen as the development of feelings of possessiveness towards various targets in the organisation, therefore constituting an attitude towards, for example, emotional and cognitive rudiments. Psychological ownership can be identified in terms of the three routes or categories, namely control, knowledge and investment of self. These perceptions of ownership of something, leading to feelings of psychological ownership, formed the basis of this study.

The main purpose of this study was to provide an in-depth description of the experience of ownership within the workplace, especially the routes to psychological ownership, namely control; knowledge and investment of self. In-depth qualitative interviews were conducted around three themes, also called the three components of psychological ownership: control; knowledge; and investment of self. The methodology applied was a phenomenological approach.

The experiences and perceptions of the middle managers of control and influence over targets or objects as well as the use of targets and objects were described as they pertain to the construct of psychological ownership. In addition knowledge of targets and objects as well as the investment of ideas, energies and time into targets and objects was described in order to arrive at a rich description of the construct for the specific sample.

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

When people physically own things, they experience certain feelings and thoughts as a result of the experience of owning those objects. In fact, even people's self-concepts become inextricably linked to the objects that they own (Belk, 1988). For example, if an individual loses an object that he or she owns, he or she experiences feelings of loss. Not only do people experience feelings of ownership of physical objects, but also of intangible objects (Pierce, Kostova & Dirks, 2003). Van Dyne and Pierce (2004) argue that this ownership experience can be transferred to the workplace as well, where individuals develop feelings of ownership towards their organisation or even towards the role that they fulfil. It is this ownership experience within the work context that formed the basis of the present study. More specifically, individuals' perception of the routes through which psychological ownership emerges is described.

The introductory chapter will be structured in the following way. In the next section, the background to the research will be provided, followed by a statement of the research problem as well as the purpose and objectives of the research. In addition, the significance of the study will be discussed and the methodology used in the research will be explained. The chapter will then conclude with an outline of what can be expected in each chapter.

1.2 BACKGROUND AND SIGNIFICANCE

In recent years, attention has increasingly been given to the concept of *psychological ownership* in the work context. Van Dyne and Pierce (2004) state that *psychological ownership* can also be seen as the development of feelings of possessiveness towards various targets in the organisation. It can therefore be seen as an attitude towards something, which includes emotional and cognitive rudiments (Pierce *et al.*, 2003).

Various studies define *psychological ownership* in terms of its roots, effects and links to the organisation (Belton, 2008; Pierce *et al.* 2003; Pierce, Jussila, & Cummings, 2009; Pierce, Kostova & Dirks, 2001; Van Dyne & Pierce, 2004). In most of the studies noted above, the authors agree that there are three ways (routes) in which psychological ownership can be identified, namely

- the control and influence over as well as the use of targets or objects due to these objects being seen as part of the self (Belton, 2008);
- thorough knowledge of the targets or objects that are owned by an individual (Pierce *et al.* 2001); and
- investment of ideas, energies and time into targets or objects as a means of developing a sense of identity through the objects or targets (Pierce *et al.,* 2001).

Every human being has a need to have control over himself or herself, resources, events and even over other people. In addition, Skinner (1996) maintains that people's perceptions of being in control can be correlated with numerous positive consequences. The best way to control something would be to own it and for this reason, it is important to note that individuals' self-identities are inextricably linked to the things that they accumulate (i.e. own) over a lifetime. This ownership, it is argued, leads to "... feeling[s] of possessiveness and of being psychologically tied to an object" (Pierce *et al*., 2001), which can also be seen as the development of psychological ownership.

It is the concept of *psychological ownership*, as constituted of control, knowledge and investment of self, which forms the main theme of this research. What is evident from the review of literature on the topic of psychological ownership is that the routes to psychological ownership have not been elaborated upon by way of further research. Most of the foregoing literature only provides an apparent definition of these components. No conclusive evidence exists to describe these routes and as a result, ultimately, devise a way in which to purposefully engage it. An in-depth understanding of the components or routes to psychological ownership is therefore required.

The perception of ownership of something that can, in most cases, lead to feelings of psychological ownership will form the basis of this study. This could be deemed valuable, since the experience of ownership has so many positive psychological consequences for the individual (Skinner, 1996) and for the organisation (Pierce, O'Driscoll & Coghlan, 2004; Van Dyne & Pierce, 2004) alike. These positive consequences can be verified in the work context, as shown in a study by Pierce, *et al*. (2004). This study demonstrates that the amount of control experienced by employees forms a link between psychological ownership and the way in which work is structured. Similarly, there is a relationship has also been shown between psychological ownership and organisational commitment, job satisfaction and performance (Van Dyne & Pierce, 2004).

The relationship between psychological ownership and specific work outcomes such as employee commitment, job satisfaction and employees' intentions to stay with the organisation has been demonstrated throughout literature. For this reason, it can be argued that psychological ownership would be a positive psychological resource to develop in organisations (Avey, Avolio, Crossley, & Luthans, 2009).

Pierce, Rubenfeld and Morgan (1991) maintain that employee ownership programmes, such as employee stock ownership plans, can lead to the experience of psychological ownership since the feelings of formal ownership get transferred to the employees' work. This could be due to employees feeling that they are making a physical contribution to organisational decision-making, giving them a measure of control over what happens in the work context. A study into the components of the concept of *psychological ownership* may provide employers with a way to keep valued human capital where it is needed most.

1.3 RESEARCH PROBLEM AND QUESTIONS

In various academic and professional fields, the concept of ownership as well as its psychological consequences and implications has been explored (Pierce, *et at*., 2003). Most of these studies established that having or acquiring possessions, in addition to the corresponding feelings (which accompany ownership) is a common human experience (Pierce, *et at*., 2003; Tian & Belk, 2005). Therefore, the feeling of possession can in many

instances be equated to feelings of ownership for many people (Van Dyne & Pierce, 2004).

Psychological ownership can be seen as a natural extension of formal ownership. Pierce *et al.* (2001) define it as the psychological dimension of ownership as well as "...feeling[s] of possessiveness and of being psychologically tied to an object". Tian and Belk (2005) argue that the home can be seen as the core of the individual's extended self, but due to people spending an increasing amount of time at work, the boundaries between work and home become increasingly blurred. Therefore, the workplace can also be seen as a part of the extended self. Throughout literature a connection can be seen between possessions and the individual's identity when attempts are made to define *psychological ownership* (Belton, 2008; Pierce *et.al*., 1991; Pierce *et al.* 2001; Pierce *et al.,* 2003).

When regarding the literature on psychological ownership, much is written on its development and application. In this regard, the consequences for the individual and the organisation have been documented to a certain degree. What has, however, come to light through a review of the literature is that no material is available which describes the components of psychological ownership as experienced in the field of work.

The main purpose of this study was to provide an in-depth description of the experience of ownership in the workplace, especially the routes to psychological ownership, which consist of control, knowledge and investment of self. More specifically, the purpose was to describe middle managers' perceptions of ownership of their work, as it ties to the concept of and components of *psychological ownership* in organisations.

In an effort to describe the routes to (or components of) psychological ownership by means of the experiences and perceptions that middle managers have of the components of psychological ownership, the following questions needed to be answered:

i. What are individuals' experiences and perceptions of control over their work?
ii. What are individuals' experiences and perceptions regarding knowledge about and as a result of their work?

iii. What are individuals' experiences and perceptions regarding investment of self in the context of their work?

1.4 RESEARCH METHODOLOGY

A qualitative approach to research was followed to deal with the aims of this study. The aim of employing qualitative research in this instance was to arrive at a description or in-depth understanding of the phenomenon under study, in contrast to devising an explanation for it. The qualitative approach is situated within the broader philosophical framework of interpretivism, which approaches reality as knowable only through a study of individual experiences, which are then interpreted and understood. In terms of the framework of a qualitative research approach, a phenomenological research design was employed, as it lends itself to "descriptions of meanings" (Giorgi, 1986), as experienced by individuals.

The sample consisted of 23 respondents. They all were middle managers in the petrochemical industry, between the ages of 30 and 50. The sampling method was non-probability sampling and, as a result, was theoretical and purposive in nature. This was done due to the research aims, which necessitated depth rather than quantity. The units of analysis were the perceptions of the middle managers in the petrochemical industry.

The data was collected by means of face-to-face, semi-structured interviews, also called the qualitative interview (Rubin & Rubin, 2005). The data collection instrument consisted of an interview schedule with open-ended questions. The schedule was applied loosely since the researcher explored certain areas in more depth due to the design and aims of the study. The data thus gathered was transcribed and coded with the aid of a computerised method called GABEK. The results generated from the GABEK analysis were then further analysed and described in order to arrive at an in-depth description of the components of psychological ownership.

1.5 DELIMITATIONS AND ASSUMPTIONS

1.5.1 Delimitations

The study has the following delimitations with regard to the context, constructs, theoretical perspectives and sampling units. In terms of the context, it should be noted that the study was limited to one organisation in the petrochemical industry. In addition, the sampling units were middle managers in this context, therefore, the role of lower-level employees as well as the role of individuals in levels higher than middle managers was not considered for the purposes of this study.

The construct that will be studied is *psychological ownership*, limiting it to the perceptions of the population, and not physical ownership such as employee ownership. Employee ownership will be discussed in full in the literature review in order to clearly distinguish between physical and psychological ownership.

Finally, due to the nature of the study, it should be noted that the exploration of the topic rests on qualitative analysis and not on the use of some form of validated measure. The aim was rather to provide a detailed description of the components of psychological ownership as they are perceived by middle managers in the specified context.

1.5.2 Assumptions

The study is based on the following assumptions:

- The data gathered through the study is qualitative in nature and will be collected from individuals in a semi-structured interview setting. It is important to note that this data is therefore subjective in nature as it relates to individual, personal experiences.
- The gathered data will need to be organised, coded and processed in order to reveal relevant themes.
- The participants will be able to communicate in English or Afrikaans, since the interview will be available in both languages.

- The respondents will be able to express themselves sufficiently for the purposes of this investigation due to the fact that they are at management level.
- The interviewer will not ask guiding questions in order to allow the participants to provide their unique experiences.

1.6 OVERVIEW OF THE REPORT

In the following chapter, an overview of the extant literature on the topic of psychological ownership will be given, together with the core concepts as they were reviewed from various literature sources. After presentation of the theories and viewpoints, relevant arguments will be made in the case of psychological ownership

In Chapter 3, the methodology employed in the study will be discussed systematically, with specific reference to the philosophical background, research approach and the phenomenological design as they were applied to the research. The sampling employed for the purpose of the study will also be discussed along with the data collection techniques and data analysis procedures. Finally, an exposition of the research rigour and ethical standards that were maintained will be discussed.

Chapter 4 reports the analysis of the specific data obtained as well as the findings generated from the analysis.

After presentation of the results obtained from the applying the methodology, the relevance of these results together with the limitations of the study will be discussed in the final chapter. Chapter 5 will also present relevant conclusions and recommendations for future research.

CHAPTER 2: LITERATURE REVIEW

1

2

2.1 INTRODUCTION

In recent years, attention has increasingly been paid to the concept of *psychological ownership* in the work context. Various studies define *psychological ownership* terms of its roots, effects and links to the organisation (Avey *et al*., 2009; Belton, 2008; Pierce *et al*., 1991; Pierce *et al*., 2001; Pierce *et al*., 2003; Pierce *et al*., 2004; Pierce, *et al*., 2009; Van Dyne & Pierce, 2004). In most of the studies noted above, the authors agree that there are three ways (routes) in which psychological ownership can be identified, namely:

- the control and influence over, as well as the use of, targets or objects due to these objects being seen as part of the self (Belton, 2008);
- thorough knowledge of the targets or objects that are owned by an individual (Pierce *et al.,* 2001); and
- investment of ideas, energies and time into targets or objects as a means of developing a sense of identity regarding the objects or targets (Pierce *et al.,* 2001).

It is this perception of ownership of something that can in most cases lead to feelings of psychological ownership which formed the basis of this study. Van Dyne and Pierce (2004) maintain that *psychological ownership* can also be seen as the development of feelings of possessiveness towards various targets in the organisation. It can therefore be seen as an attitude towards something, which includes emotional and cognitive rudiments (Pierce *et al.*, 2003).

The literature review will be structured in the following way. The review will begin with an exploration of the concept of *ownership.* The discussion will then be directed towards ownership in the context of work as this is where the current study is situated. The effects

of ownership will be discussed, after which *psychological ownership* will be discussed with specific reference to its definitions, categories and bases.

2.2 THE CONCEPT OF OWNERSHIP

Formally, *ownership* can be defined as a condition in which someone possesses something or where something can be said to be an individual's property (Hornby, 1998). In addition, ownership brings with it various rights, privileges, responsibilities and benefits. The privileges can be transferred to others as well as divided among many people (Rousseau & Shperling, 2003).

In various academic and professional fields the concept of *ownership* as well as its psychological consequences and implications has been explored (Pierce *et al*., 2003). Most of these studies indicate that having or acquiring possessions, in addition to the corresponding feelings (which accompany ownership), is a common human experience (Pierce *et al*., 2003; Tian & Belk, 2005). Therefore, for many people, the feeling of possession can, in many instances be equated to feelings of ownership (Van Dyne & Pierce, 2004).

The concept can intuitively be said to have developed since the very moment that the first person claimed something to be his or her possession or territory (Pierce *et al*., 2003). *Ownership* is a multidimensional construct that consists of objective and subjective experiences (Pierce *et al*., 1991). Ownership or possession can be linked to attitudes, responsibility and self-concept. According to Van Dyne and Pierce (2004), an individual can feel positively (attitude) about the things that he or she owns in addition to viewing it as part of himself or herself (self-concept). Possessions can also be said to trigger a sense of responsibility for the object or target of ownership.

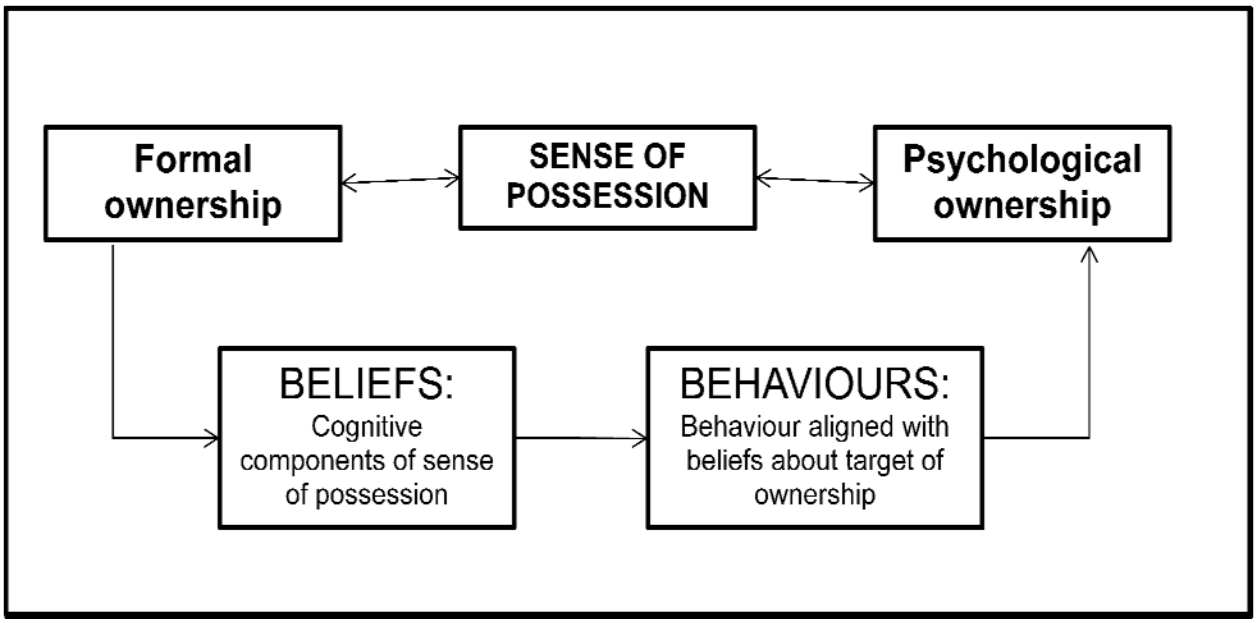
2.3 OWNERSHIP IN THE EMPLOYMENT CONTEXT

Employee ownership has become synonymous with the concept of *employee stock ownership programmes*. These programmes first became popular as part of organisational

incentive schemes and entails an arrangement where the employees receive shares in the organisation for which they work. They can either borrow against corporate assets or make concessions in terms of their wages to acquire these shares (Grobler, Warnick, Carrell, Elbert & Hatfield, 2006). The implementation of these programmes has become increasingly popular over the last twenty years (Pierce *et al*., 1991).

As noted above, the concept of *ownership* is multidimensional in nature. This is also true for employee ownership since it includes objective and subjective experiences in addition to being linked to behavioural and attitudinal outcomes (Pierce *et al.*, 1991). In order to gain a better understanding of employee ownership, one must look at the form of ownership, the attributes of the ownership construct as well as the distinction between formal and psychological ownership, according to Pierce *et al.* (1991). Figure 2.1 shows the relationship between formal and psychological ownership.

Figure 2.1: The relationship between formal and psychological ownership



Source: Developed for the purpose of this study.

Wagner, Parker and Christiansen (2003) state that formal employee ownership can be clearly divided into ownership beliefs and behaviours, as can be seen in Figure 2.1. In terms of beliefs, Wagner *et al*. (2003) suggest that these beliefs can be seen as the cognitive components of a sense of possession in the organisation, therefore, constituting

the corresponding thoughts linked to ownership in organisations. On the other hand, these sets of beliefs regarding ownership may lead to a variety of related behaviours from employees participating in ownership programmes. Such behaviour might include being protective towards the target of ownership, behaving more responsibly and an increased investment of the individual's effort, energy and time (Van Dyne & Pierce, 2004). These beliefs and behaviours can be intimately linked to the effects of employee ownership which will be discussed in more detail in the next section.

2.4 EFFECTS OF OWNERSHIP

Owning an object (real or perceived) can have important implications for individuals. A study carried out by Huang, Wang and Shi (2009), demonstrated that individuals will show a definite preference for and attraction towards objects or targets that they own. This preference or attraction is also shown towards objects that are merely perceived as being owned by the individual (Beggan, 1992). Similarly, Tom (2004) states that ownership leads to the "endowment effect". This means that individuals operating under the endowment effect will assign more value to targets that are owned by them. He argues that the endowment effect can also be transferred to institutions such as organisations.

Although Tom (2004) indicates that individuals will value owned targets more, a definite link has not been established between the length of time an individual has formed part of an institution or organisation and the value an individual assigns to such an organisation. Hochner and Granrose (1985), maintain that employees will move towards ownership (more specifically ownership of equity in the organisation) if their job security is in jeopardy, but even more so due to the fact that they perceive such a movement as providing them with more decision-making discretion in tough times.

Employee ownership can lead to a variety of positive outcomes for the organisation. Since there is more participative decision-making (Pierce *et al.*, 1991), it leads to increased employee commitment. Employee ownership also has an influence on performance, according to Pierce *et al.* (1991). These positive influences on performance can be ascribed to the fact that ownership heightens the individual's sense of responsibility (Van

Dyne & Pierce, 2004). In turn, responsibility ensures that work has more significance for the individual, resulting in protective behaviours in addition to more proactive initiatives on the part of the individual who experiences a measure of responsibility as a result of feelings of ownership (Pierce *et al.,* 2001). The influence on performance may also be due to the investment of energy and control that ownership affords the individual. For a more detailed discussion, reference can be made to the section on the components of psychological ownership.

Bedo and Acs (2007) state that the corporate performance indicators of return on investment and operating efficiency can be increased by the addition of more shareholders in an organisation. This may be due to the fact that when employees (and even shareholders) acquire more shares in an organisation they are more concerned about the efficiency and profitability of that organisation (Grobler *et al.*, 2006), implying that there is an enhanced sense of ownership. In addition to increased efficiency, employee ownership also changes the value that employees derive from their employment as well as their commitment to the organisation as a whole (Rousseau & Shperling, 2003). This could be ascribed to the control rights that accompany ownership.

In the context of the present study, it is important to distinguish clearly between formal and psychological ownership in the workplace. It is with the preceding discussion in mind that attention will now be diverted to the concept of *psychological ownership* since a definite distinction can be made between formal and psychological ownership as well as the respective effects of these concepts (Pierce *et al.*, 1991).

2.5 PSYCHOLOGICAL OWNERSHIP

2.5.1 Defining psychological ownership

Psychological ownership can be seen as a natural extension of formal ownership. Pierce *et al.* (2001), define psychological ownership as the psychological dimension of ownership as well as "...feeling[s] of possessiveness and of being psychologically tied to an object". Psychological ownership can be intimately linked to individual identity where the things

that are accumulated become a part of the person in the sense that they can be seen as an extension of the 'self' (Belk, 1988).

Tian and Belk (2005) argue that the home can be seen as the core of the individual's extended self, but due to people spending an increasing amount of time at work, the boundaries between work and home become increasingly blurred. Therefore, the workplace can also be seen as a part of the extended self. Throughout literature a connection is seen between possessions and the individuals' identity when attempts are made to define psychological ownership (Belton, 2008; Pierce *et al*., 1991; Pierce *et al.* 2001; Pierce *et al.,* 2003).

Van Dyne and Pierce (2004) state that *psychological ownership* can be identified by means of its core, which consists of a sense of possession. These feelings can be developed for concrete as well as intangible objects and can be seen in the absence of any formal ownership. The authors also suggest that psychological ownership can be seen as a work-related attitude, but it differs substantially from other attitudes, which include commitment and job satisfaction due to the fact that its base, possession, is rather distinct (Van Dyne & Pierce, 2004).

Furthermore, borrowing from economic and social psychology, Pierce *et al*. (2003) define *psychological ownership* as a "cognitive-affective" state in which the individual experiences psychological ownership due to socialisation and biological tendencies. This cognitive-affective state is the psychological experience of a connection between the self and possessions. In terms of being a "cognitive-affective" state (Pierce *et al.,* 2003), it can be said to be cognitive in the sense that the individual can become aware of it in a rational and subjective way. Psychological ownership is also affective in the sense that it produces positive feelings in connection to owned objects or targets.

A further component of psychological ownership is the targets for which people develop psychological ownership. Although there is no formal theory regarding the targets of ownership or possessions, Pierce *et al*. (2003) suggest that culture seems to shape what

can and cannot be owned by an individual and that the nature and character of targets change throughout an individuals' life.

Final aspects to consider when an attempt is made to define the concept of *psychological ownership* are, firstly, that individuals will develop feelings of psychological ownership for those objects that have generated an interest due to their visibility and attractiveness. Furthermore, the objects of ownership must be socially esteemed and self-revealing. Finally, Pierce *et al*. (2003) suggest that the targets of ownership must be accessible to the individual in order for psychological ownership to develop.

2.5.2 Motivational bases of psychological ownership

Psychological ownership is a multidimensional construct. It is made up of a variety of components, which exert various amounts of influence on each other. To understand this construct, it is important to look at why it emerges as well as how it emerges.

In response to the question of why the concept of *psychological ownership* exists, Pierce *et al.* (2001) assert that people have an innate need to own things. It may also be learnt in early childhood development through the process of socialisation. The child in actual fact learns to view the things that he or she can control as a part of himself or herself. In reality, it can be said that both poles of the nature versus nurture debate are applicable to psychological ownership. It emerges because it satisfies some or the other motive, which can be said to be either genetic or social in nature. These motives may include the dimensions of control of something or 'personalisation of space'. It also provides people with a concept of what they can call 'home' (Pierce *et al.,* 2001).

Psychological ownership serves a function for the individual based on three basic human motives. Firstly, people can achieve efficacy and effectance through the control of objects or targets. Control (as is the case with efficacy) of objects can best be achieved by ownership of them, which, in turn, leads to satisfaction. Secondly, as mentioned earlier, ownership can create a sense of identity or individuality. People can therefore define themselves through the possessions that they acquire and control (Pierce *et al.,* 2001).

Finally, ownership brings with it a motive to occupy a specific space, which is often referred to as 'home'. To have a place in the world is important and people will invest much resources and energy into the satisfaction of this motive (Pierce *et al.* 2001). The workplace can provide the individual with such a space that he or she can occupy and come to call his or her own. Belton (2008) distinguishes another feature of psychological ownership, that of caring. Although a less concrete dimension of psychological ownership, caring constitutes a dimension of psychological ownership in as far as it provides the individual with additional values that he or she adds to his or her possessions. These values include concern for the objects and targets of ownership as well as pride in them.

2.5.3 Emergence of psychological ownership

In addition to understanding why people experience psychological ownership, one must also look at how they come to feel it. Pierce *et al.* (2001) suggest that there are three main routes to the development of psychological ownership, all of which are intricately linked in terms of the way in which they interact to produce the feeling of psychological ownership. The three routes are:

- control of targets or objects;
- knowledge of targets or objects;
- investment of energy into targets or objects.

Controlling targets and objects is a central theme in most literature pertaining to psychological ownership (Pierce *et al.,* 2001; Rousseau & Shperling, 2003; Van Dyne & Pierce, 2004). Control forms the first of the ways in which psychological ownership can be developed. It has been defined in numerous ways by different authors. A summary of some of the definitions of control is provided in Table 2.1.

Table 2.1: A comparison of different definitions of control

Author (date)	Meaning

Abeles (1991)	People's interrelated beliefs and expectancies about their abilities to perform behaviours aimed at obtaining desired outcomes and about the responsiveness of the environment, both physical and social, to their behaviours.
Brickman (1982)	When people are held responsible for influencing or changing events. The responsibility for the solution of a problem.
Chanowitz & Langer (1980)	The fluctuating relation between self and material that defines each other – more finely etching each other with each involvement.
Glass & Carver (1980)	The concept of *control* may be defined in terms of perceptions of contingencies. If a person perceives a contingency between his or her behaviours and an outcome....the outcome is considered controllable.
Skinner (1995)	...naive causal models of how the world works: about the likely causes of desired and undesired events, about their own role in successes and failures, about the responsiveness of other people, institutions, and social systems.
Thompson (1981)	The belief that one has at one's disposal a response that can influence the aversiveness of an event.
Weisz (1986)	Causing an intended event.

Source: Skinner (1996)

From the definitions above, it becomes clear that control can be linked to events, people as well as physical objects. In addition, control is closely linked to the 'desired outcomes' that individuals prefer. For the purpose of this study, *control* will encompass control over events, people and objects, as envisioned by the authors above.

In terms of its relation to psychological ownership, first and foremost, control affords people the right to control the manner in which any owned object can be utilised. Pierce *et al.* (2001) use the analogy of body parts and explain that in the same manner that body parts that can be controlled come to be viewed as part of the self, so too do other objects that can be controlled. Pierce *et al*. (2003) describe the control function that psychological ownership serves as the instrumental function.

In terms of the organisation, the element of control is relevant as well. Each object and process for which the individual is given control, provides the individual with the potential to develop the experience of psychological ownership. It is therefore logical that jobs that provide the individual with more autonomy, for example, raise the level of control and consequently also the experience of psychological ownership.

The second way in which psychological ownership can be developed is through what Pierce *et al.* (2001) call "...intimately know[ing] the target". Associations that are formed with objects or knowledge of specified objects can lead the individual to develop feelings of ownership. This sense of familiarity can be provided to employees as well by providing them with the opportunity to form associations with (in other words, know) specific targets for which ownership must be developed (Pierce *et al.,* 2001). Such targets may include the actual work, projects and even other employees and groups of employees. In addition, the organisation can provide the individual with information regarding its vision and strategic goals, which creates a sense of familiarity and eventually also feelings of psychological ownership.

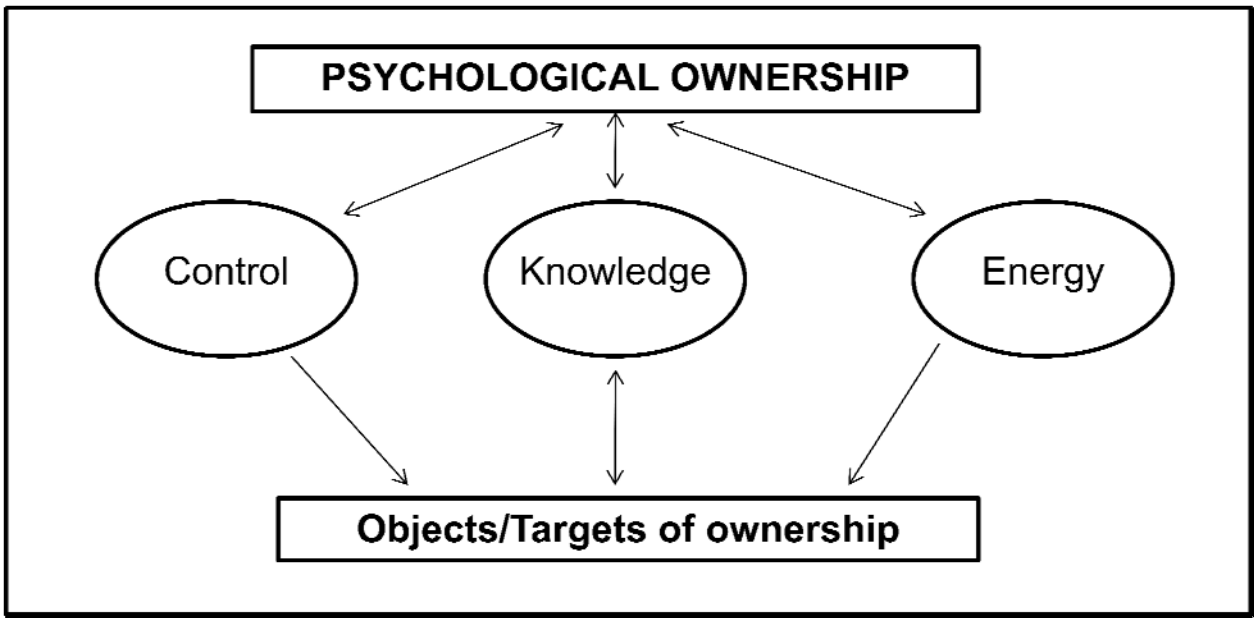
Not only does knowledge of the target of ownership lead to psychological ownership, but the relationship is reciprocal, where feelings of ownership also lead to more knowledge of the target. Pierce *et al*. (2003:10) suggest that ownership also leads to self-understanding through interaction with possessions, which is coupled with reflection on what they mean to the individual.

The final way in which psychological ownership can be developed is by the investment of energy in objects. It is argued that this investment of energy leads to psychological ownership since the individual identifies with these targets due to the investment of himself or herself into it (Pierce *et al.* 2001:302). This investment of 'self' includes the time, ideas, skills and energy of the individual.

In the organisational context, individuals invest parts of themselves in their work and can therefore come to experience psychological ownership for machines, their work as well as the things that they produce. The nature of work that individuals do also has an effect on

how much of themselves they invest in it (Pierce *et al.,* 2001:302). For example, if work is highly routine, the individual will most likely not develop elaborate feelings of psychological ownership. The interaction between the three routes to psychological ownership is illustrated in Figure 2.2.

Figure 2.2: The interaction between the three routes to psychological ownership



Source: Developed for the purpose of this study.

Figure 2.2 indicates how the routes to psychological ownership interact to produce the state of psychological ownership. Each of the three routes affects psychological ownership, but in the same sense is also affected by psychological ownership. In addition, control has a one-way relationship with the targets of ownership as is the case with the amount of energy invested in them. Knowledge, on the other hand, has a reciprocal relationship to the target of ownership. As mentioned earlier, knowledge of targets can lead to more psychological ownership in addition to psychological ownership also leading to the individual gaining more knowledge of the target of ownership.

2.5.4 Investigating psychological ownership

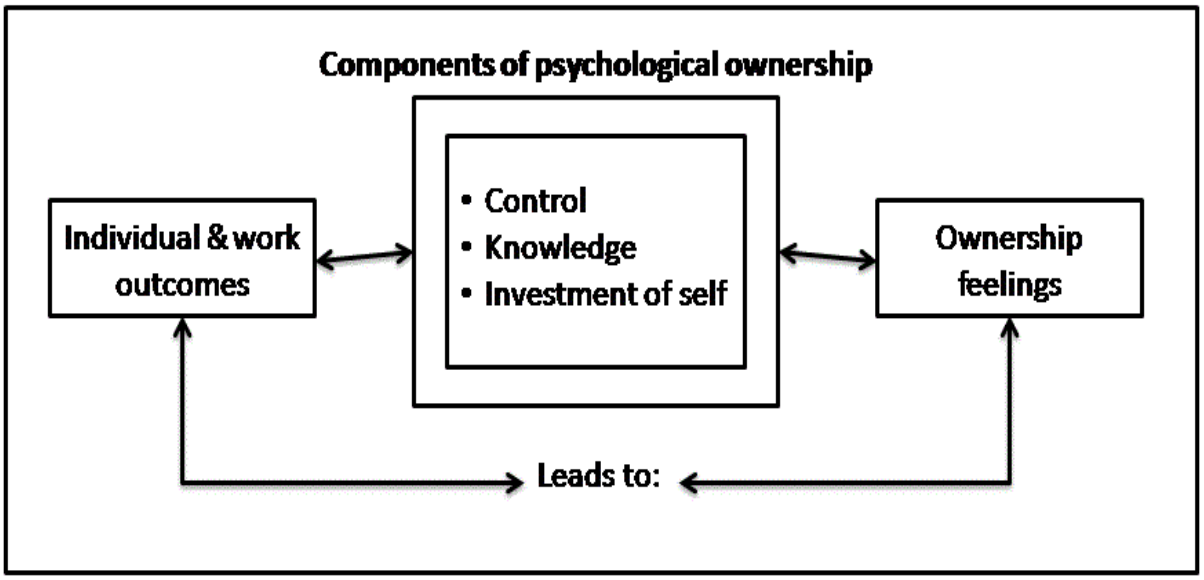
An investigation into the nature of psychological ownership should add value in terms of providing an approximation of how employees can be provided with a sense of possession

towards their companies as well as towards their work. In effect, therefore targeting the above-mentioned routes, that gives rise to the emergence of psychological ownership. Due to the abstract nature of the concept, however, it should be noted that no validated measure exists with which to accomplish such an investigation. For this reason, the researcher will rely on linguistic information that will be obtained by means of in-depth interviews. This immediately implies that the information gathered will only be as good as the responses provided by respondents.

In addition, any description given by an individual is subjective in nature. The person giving the account does so from his or her own unique perspective, which has been shaped by experience and socialisation. This account can be seen as a 'constructed' reality, which in essence can only be confirmed by the observer and observed.

A graphic model was developed for the purposes of the present study in order to guide and aid analysis. Figure 2.3 shows a schematic representation of the different components of psychological ownership in relation to its outcomes. The model will be applied and discussed, especially where the components of psychological ownership is concerned, since a detailed discussion of these components forms the overarching research aim of the present study.

Figure 2.3: The interrelationship between the components and outcomes of ownership



Source: Developed for the purpose of this study.

As can be seen from Figure 2.3, control, knowledge and investment of self can lead to individual and work outcomes in addition to ownership feelings. Work outcomes and ownership feelings also have the ability to impact on the components of psychological ownership, while outcomes and ownership feelings influence each other too. The pathways through which these influences occur are clearly indicated by the arrows.

Since psychological ownership is such a complex and multifaceted phenomenon, careful consideration will be given to the way in which the information that is gathered will be synthesised. A discussion of the data analysis procedures will fully deal with this in the methodology section of this paper.

2.5.5 Implications for the organisation

Psychological ownership has numerous positive implications for the organisation. Van Dyne and Pierce (2004) assert that a clear link can be made between psychological ownership and work-related attitudes and behaviours. Since people become more attached to targets of ownership, psychological ownership implies that organisational commitment can be increased, because the individual feels more attached to the organisation. In addition, psychological ownership produces positive feelings in individuals which can be linked to their feelings of job satisfaction. It has also been shown that the psychological ownership increases the organisation-based self-esteem of individuals (Pierce *et al.,* 2009).

In terms of work-related behaviours, psychological ownership may cause increased performance since increased feelings of responsibility are coupled with the investment of energy, skills and ideas (Pierce *et al.*, 2001). Due to the above-mentioned increases in commitment and performance, psychological ownership can also lead to organisational citizenship behaviours such as additional work behaviours that benefit the organisation (Van Dyne & Pierce, 2004).

2.6 ENGAGING PSYCHOLOGICAL OWNERSHIP

Psychological ownership manifests itself as attitudes, feelings and behaviours. It would therefore be possible to purposefully engage psychological ownership if one can clearly delineate in which circumstances and through which attitudes, feelings and behaviours it manifests. Pierce *et al*. (2003) suggest that psychological ownership can be engaged by looking at how it is developed and what it consists of.

This could be deemed valuable, since the experience of ownership has so many positive psychological consequences for the individual (Skinner, 1996). These positive consequences can be verified in the work context, as was shown in a study by Pierce *et al.* (2004). This study demonstrated that the amount of control experienced by employees forms a link between psychological ownership and the way in which work is structured. Similarly, a relationship has also been shown between psychological ownership and organisational commitment, job satisfaction and performance (Van Dyne & Pierce, 2004).

The three routes through which psychological ownership emerges should be applied in order to develop a way to engage it. Although the discussion of the way in which psychological ownership emerges focused on three distinct processes, they can be seen as complementing and reinforcing each other. In addition, the components of psychological ownership should be seen as complementary and additive in nature. This means that ownership may develop due to any of the components mentioned in the preceding sections. These components may be experienced individually and as distinct from each other although a stronger sense of psychological ownership can be engaged if it was the result of an interaction of more than one of the components (Pierce *et al*., 2003).

2.7 CONCLUSION

Through the literature perused, a clear distinction could be made between formal, employee ownership and psychological ownership. All the forms of ownership have implication for the individual as well as for the organisation. As indicated in the literature, psychological ownership has numerous positive implications and consequences for

modern organisations. What has become evident is that there are three routes through which psychological ownership emerges, namely control, knowledge and investment of self.

What is evident from the review of literature on the topic of psychological ownership is that the routes to psychological ownership have not been elaborated upon by way of further research. Most of the foregoing literature provides the same, superficial discussion of these components. No conclusive evidence exists to describe these routes and as a result, ultimately devise a way in which to purposefully engage it.

CHAPTER 3: RESEARCH DESIGN AND STRATEGY

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3.1 INTRODUCTION

As gathered from the literature review, psychological ownership is a multidimensional phenomenon. For this reason, the researcher would argue that exploration is required in terms of the meaning and content of the routes or components. In order to do justice to the phenomenon, a method is required that is comprehensive and provides a coherent sense of the phenomenon as a whole (Woodrow, 2007). The question raised by the literature review is therefore; what does *control*, *knowledge* and *investment of self* look like in industry as it forms the components or routes of psychological ownership? *How* would one describe these routes for individuals?

In the contents of this chapter, the researcher will present the overarching research philosophy as it relates to the topic and aims of investigation. The research design that was employed will then be discussed. In addition, the sample, data collection methods as well as the data analysis technique will be explained. The chapter will then conclude with a discussion of the research rigour and ethical considerations that were adhered to throughout the research.

3.2 RESEARCH PHILOSOPHY

According to Nieuwenhuis (2007), all research is based on underlying assumptions about what constitutes sound research. The term *research approach* refers to the development of knowledge as well as the nature thereof. It is this overarching philosophical considerations or the research approach of the researcher that underlies the entire research process (Saunders, Lewis & Thornhill, 2007). In qualitative research, it is fundamental for researchers to determine their own beliefs with regard to certain key issues to produce results that can be said to be of a high quality as well as legitimate. In order to establish what the researcher's beliefs are regarding research, he or she needs to explore and determine to which ontological and epistemological assumptions the researcher subscribes. In order to give the reader an overview of the research approach that was employed throughout this study, the notions of ontology and epistemology will be discussed as they relate to qualitative research and the philosophical approach. The philosophical foundations of the research approach should not only be congruent with those of the researcher, but also to the research design that will be employed and ultimately the approach should make it possible to actually reach the research aims. The research approach adopted in the present study will be discussed at length in the next sections.

3.2.1 Ontology

Researchers need concepts and ideas of how to categorise phenomena and processes if they are to present a comprehensive description and explanation of some reality. *Ontology* is about the deeper meaning of social actions, how they are interpreted and appreciated by individuals or groups and how they have been shaped by various factors over time to form something that is 'real' (Nieuwenhuis, 2007). The specific ontological perspective assumed by the researcher for this study is underpinned by interpretivism, which assumes that reality can only be studied through people's experiences in order to learn more about its richness. The reality under study is made up of human experience, which, in turn, is constructed by each individual separately and in relation to the specific context in which the individual finds himself or herself (Trochim, 2007). This reality is subjective and the researcher can only study the experiences and meanings of individuals as they present them.

3.2.2 Epistemology

Whereas ontological assumptions are concerned about the nature of reality, *epistemology* relates to how things can be known (Nieuwenhuis, 2007). More simply stated *epistemology* is concerned with how individuals or groups know or come to know reality. There is an assumption that a relationship exists between the knower and the known. According to Niewenhuis (2007), research is guided by a set of beliefs and feelings about the world as well as the nature of the research inquiry that leads one to decide how the research should be understood and investigated. In terms of the present study, the researcher realises that knowledge can only be generated through a process whereby information is gathered in the form of individual experiences and interpreted in order to form an understanding. The information thus generated is influenced by the context and background of the individual and the best that the researcher can hope to generate is a true reflection of the various 'experiences' gathered (Trochim, 2007). Based on the abovementioned ontological and epistemological beliefs, the focus of this research reflects an interpretivist philosophy, which will be discussed in the subsequent section.

3.2.3 Interpretive approach

The qualitative approach to research can be linked to three major philosophical paradigms, which are modernism, interpretivism as well as postmodernism (Schurink, 2003). The research paradigm in which this study is rooted is that of the interpretive paradigm. According to Nieuwenhuis (2007), the aim of interpretive research is to offer a viewpoint of a state of affairs and to analyse certain phenomena in order to provide a glimpse into the way in which a specific group of people understand or experience a given situation or phenomena. In addition, a major advantage of the interpretive approach is the depth with which this approach describes phenomena or situations under study. These descriptions can only be arrived at by means of individual meanings and perceptions as conveyed through language.

According to the interpretivist paradigm, the researcher can only gather subjective data due to the fact that the meanings and experiences of individuals are constructed through a dynamic interaction between individuals and their environment (Creswell, 2009). Similarly, Rubin and Rubin (2005) argue that accessible reality is constructed and can as a result not be objectively established. Understanding of the meaning attributed to any phenomenon can be developed through an exploration of the "richness, depth and complexity" that individuals exclusively create by living day to day in interaction with their social environment (Niewenhuis, 2007). There is therefore not an objective and external reality that exists separately from individuals and as a result can be studied by means of measurements.

How individuals behave, as well as the assumptions based on such behaviour, is affected by their background as well as the amount of information available to them. The information available to individuals, in turn, depends on the context they have been exposed to, their own distinctive experiences as well as the significance they attach to it (Rubin & Rubin, 2005). Researchers can consequently improve their theoretical and conceptual understanding through a reciprocal relationship between the socially constructed reality available to them and the research decisions they make (Niewenhuis, 2007). This means that the scientific understanding of individual (or collective) experiences and phenomena can be greatly enriched by an understanding of the social theory which informs research and *vice versa*.

3.2.4 Inquiry strategy

The strategy of inquiry that was employed throughout this study was qualitative in nature. Qualitative research methods are designed to scientifically explain people and matters associated with them and do not depend on statistical forms of analysis (Schurink, 2003). The aim of employing qualitative research in this instance is therefore to arrive at a description or in-depth understanding of the phenomenon under study, in contrast to devising an explanation for it. The process is described by Leedy and Ormrod (2005) as being more holistic in nature and as evolving in the sense that the design of the study, the

measurements and interpretation of the data could change along the way. Table 3.1 provides a comparison between quantitative and qualitative inquiry.

Table 3.1: Comparison between quantitative and qualitative research

	Quantitative approach	Qualitative approach
Nature	Nomothetic	Idiographic
Researcher	Objective	Subjective
	Removed / Distanced	Involved
Attempts to	Predict	Understand
	Control	Explain
Methodological focus	Process	Experience
	Outcome	Conceptualisation

Source: Adapted from Mohamed-Patel (2002).

As can be seen from Table 3.1, qualitative research focuses on understanding and explaining social phenomena, which is the express purpose of the current study. In addition, the holistic nature of qualitative research provides a platform for a rich, detailed and contextualised description of data as opposed to being concerned with the mapping of patterns, trends or correlations (Schurink, 2003). The emphasis is on understanding the complexity of behaviour and focusing on meanings and interpretations, through the direct interaction with participants in their natural environment (Niewenhuis, 2007). The researcher is therefore involved and takes a subjective stance towards the research.

According to Mohamed-Patel (2002), the conventional methods for gaining an understanding in specific and strict scientific fields, may not acknowledge the profundity and distinctiveness of human experiences. Qualitative research therefore deals with these concerns by not employing overarching methods and viewpoints (Schurink, 2003), leaving room for a more interpretive and creative approach to research problems. It is typically used to answer questions about the complex nature of phenomena, often focusing on describing and understanding a phenomenon from the point of view of participants (Leedy & Ormrod, 2005). Simply stated, qualitative studies aim to describe and interpret the experience of participants in their particular setting (Ponterotto, 2005). In essence, the general theme of qualitative research implies that rich, detailed information is gathered

from an identified group of individuals, allowing the researcher to gain further insight into the observable facts and data and therefore develop new theoretical perspectives.

Although the present study was not aimed at developing theory, it was however aimed at providing a rich description of the components of psychological ownership. Additionally, the aim was to describe and form an understanding of psychological ownership as experienced by various managers and therefore required that an in-depth, flexible approach be used allowing the researcher to gather detailed information about the participants in their environment. As such, the present study can be classified as a qualitative study within the parameters of an interpretivist philosophical approach as it encompasses empirical observations and interpretations with the aim of providing detailed descriptions of perceptions and experiences.

3.3 RESEARCH DESIGN

Niewenhuis (2007) states that one of the interpretive approaches to qualitative research is that of phenomenology. This study can be classified as employing a phenomenological design. The development of the phenomenological approach will be discussed as well as some of its methodological assumptions as it relates to the present study. The strengths and weaknesses of the phenomenological approach will be referred to with special reference to the research of psychological ownership.

The phenomenological approach to research developed from post-positivism which, although the positivist focus was directed towards human behaviour, still attempted to quantify its results. Quantification and verification are strong features of positivist research, and social scientists attempted to find a more appropriate means of researching human behaviour and experience, which led them to post-positivist methods (Mohamed-Patel, 2002). Although post-positivist approaches provided means for producing results that were also open to debate, confirmation, replication and variation, it could still not be applied successfully to describe and understand human experiences, since these approaches predominantly focused on behaviour (Neuman, 2000). Svensson (1986) argues that when research is aimed at human experiences, alternative methods are

needed to those that quantify and establish causal explanations. One such alternative is phenomenology. Phenomenology developed in an attempt to counter the reduction of humans and their experiences to observable objects.

When one traces the development of the phenomenological approach, a better understanding can be formed of its application, especially as it pertains to the present study. As mentioned above, phenomenology developed from the post-positive tradition in an effort to denounce the natural scientific method as the authority for studying human phenomena. Phenomenologists believe that researchers need to look at experience and, for this reason, a clear shift was made towards human consciousness. Later developments ensured that the environment (i.e. context) in which the individual finds himself or herself had to be considered alongside the experience of the individual (Mohamed-Patel, 2002). The aim of the research was to describe a concept or phenomenon by means of gathering information on the experiences that a particular group has.

According to Mohamed-Patel (2002), the *phenomenological approach* can be described as one that attempts to provide a thorough portrayal of human experience without taking into consideration the psychological origin of these experiences neither its causal explanation. Giorgi (1986) sums it up as follows:

> *Phenomenology is the discipline that devotes itself to the study of how things appear to consciousness or are given in experience. Thus it is concerned with phenomena in the strict sense: that is, how thing and events are for the consciousness that beholds them and not how they are in themselves.*

Furthermore, this tradition, as developed from existential phenomenology, utilises descriptive measures to describe the quintessence of human experiences. Human experience is underpinned by consciousness as well as the individual's unique relationship to the world (Giorgi, 1986). It is argued that the world only exists as it is perceived by individuals, which is termed by Mohamed-Patel (2002) as "being-in-the-world" as borrowed from Heidegger's (1994) concept of "dasein". The present study serves to describe the respondents' experiences surrounding the components of psychological ownership. The

aim of the research was not to arrive at an explanation for the construct of psychological ownership, but rather to clarify the concept as it is experienced by middle managers.

The heart of the phenomenological method can be described as the building of a comprehensive, unambiguous and clear portrayal of a particular human experience (Braud & Anderson, 1998). Therefore, the present study attempts to provide a thorough description of the experiences of individuals as they relate to the components of psychological ownership. The researcher therefore had to reflect on how the respondents understood the components, what it meant to them in addition to what importance they attached to the concepts. Furthermore, the current research aimed to describe psychological ownership in terms of the experiences of the respondents and as mentioned previously, not to attempt to explain it by means of a rigid structure. The principal objective can therefore be described as observing, understanding and then describing psychological ownership in an unambiguous manner.

Employing a phenomenological design has various strengths. In the context of psychological ownership, phenomenology will provide the researcher with a means of describing the understanding and importance that individuals attach to the components of psychological ownership. In addition, Braud and Anderson (1998) assert that the findings that are produced from phenomenological research emerge and are not forced. The techniques applied for analysis also ensure that the data is handled in a reliable manner. The research findings are also produced with nominal influence of the researcher (Braud & Anderson, 1998). The influence of the researcher is reduced by means of the researcher setting his or her own preconceptions and prejudices aside after acknowledgment and careful scrutiny of them (Mohamed-Patel, 2002). This entailed that the researcher challenged preconceived notions regarding the components of psychological ownership in addition to any opinions held with regard to the specific sample in question.

Just as any approach has specific strengths, so too does it have weaknesses. With reference to the present research, one of the most important weaknesses that had to be resolved was the expressive proficiency of the participants (Braud & Anderson, 1998). To resolve this, the researcher used of a sample of middle managers who were assumed to

possess the ability to express themselves clearly in addition to ensuring that all the respondents were able to both speak and understand English fairly well. This dealt with a further weakness as described by Braud and Anderson (1998), namely that the language and terms used are more often than not imperceptive. Furthermore, the conclusions drawn from phenomenological research depend by and large on the specific contributions made by respondents who may have very little concern for explaining what their experiences are. To a great extent, the researcher resolved this by probing the respondents in order for them to provide a representation of their experiences and perceptions.

3.4 THE SAMPLE

The data for the present study was collected by means of a sample. This was done due to the impossibility of interviewing every middle manager in South Africa. The specific sampling method and procedure were chosen in order to generate in-depth information. This section contains a discussion of the units of analysis, sampling method as well as the sample size.

3.4.1 Units of analysis

The units of analysis for this study were the perceptions of middle managers with reference to psychological ownership. For the proposed study, the units of analysis and sampling units were the same. Consequently, the sampling units consist of individuals at middle management level. The *sampling unit* refers to the units from which data is gathered (Maree & Pietersen, 2007), while the *units of analysis* refer to the units from which conclusions are drawn. For the purpose of the current study, the perceptions of the relevant middle managers formed the basis from which data was gathered as well as conclusions drawn.

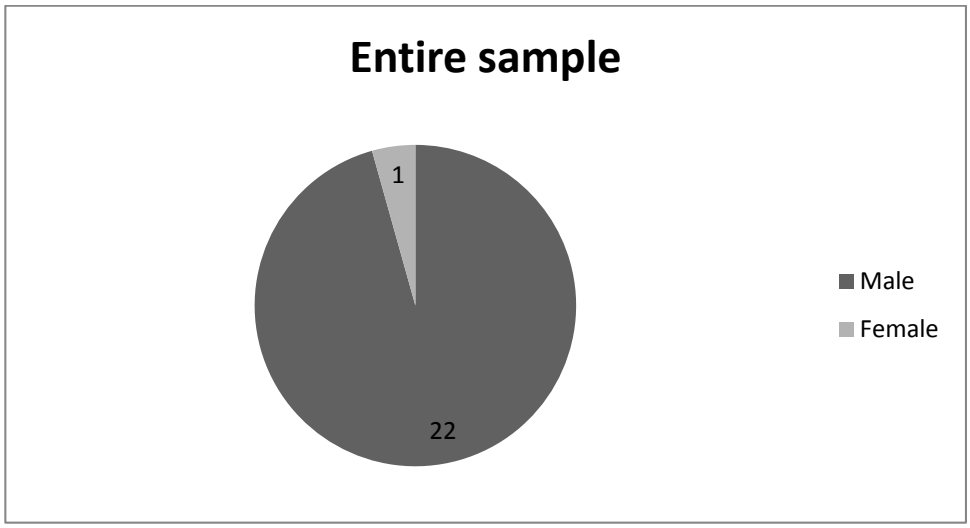
3.4.2 Sampling method

The sampling method that was used can be seen as constituting a non-probability sampling technique (Neuman, 2000). This was done due to the fact that the study is qualitative in nature and as such the depth and quality of the data gathered, in contrast to the number of respondents, were of importance. The sampling was therefore theoretical in nature as well as purposive. Middle managers were purposively sampled from the petrochemical industry. This was done due to the nature of the study in addition to gaining the richest information from the sampling units. In addition, the sampling was sequential, which means that cases were selected or sampled until no new information could be sourced from the addition of more sampling units (Neuman, 2000).

3.4.3 Sample size

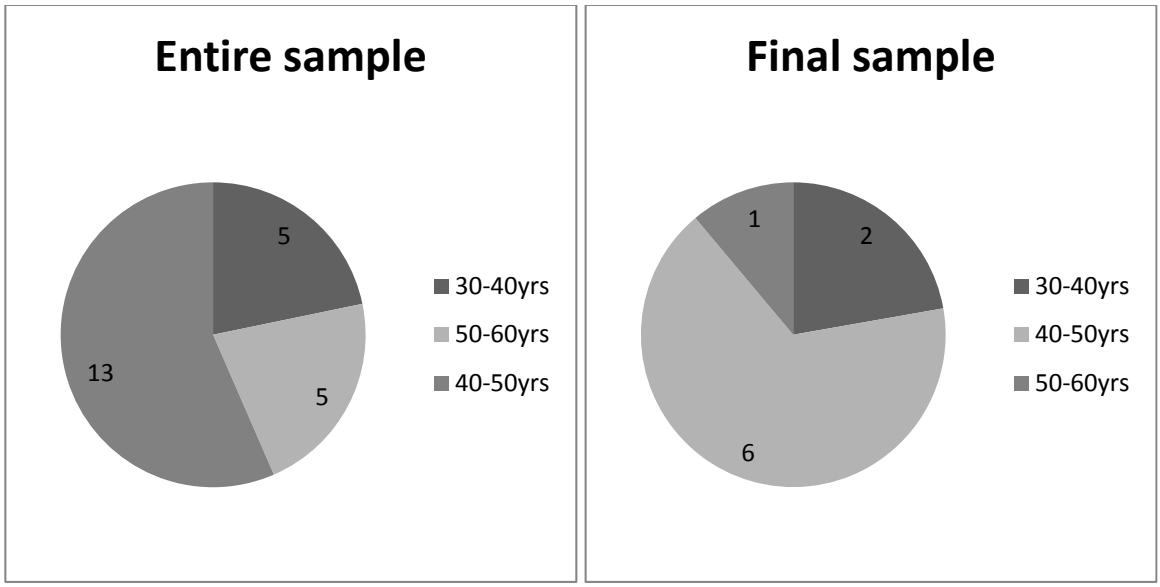
Since the present study is qualitative in nature, the focus was on gaining in-depth, rich information from the sampling units. In addition, the purpose of the study was to describe the perceptions of psychological ownership in a meaningful way. For this reason, a large sample size was not necessary. The researcher conducted twenty-three interviews. On the basis of the first few interviews, the interview guide was refined. The interviews for the eventual sample were selected based on the depth of information which they contained. The exact size therefore depended more on the quality of information gathered than on gaining a representative sample from which to draw inferences. Figures 3.1 to 3.3 summarise the demographical information of the entire as well as the final sample included in the study.

Figure 3.1: Gender distribution of the study sample



As can be seen from Figure 3.1, only one female participated in the study. Due to the final selection criteria the final sample constituted males only. The interviews initially screened for inclusion in the study consisted of the ones where the participants were able to understand and participate meaningfully in the interview process. The interviews with the richest description were included in the final sample.

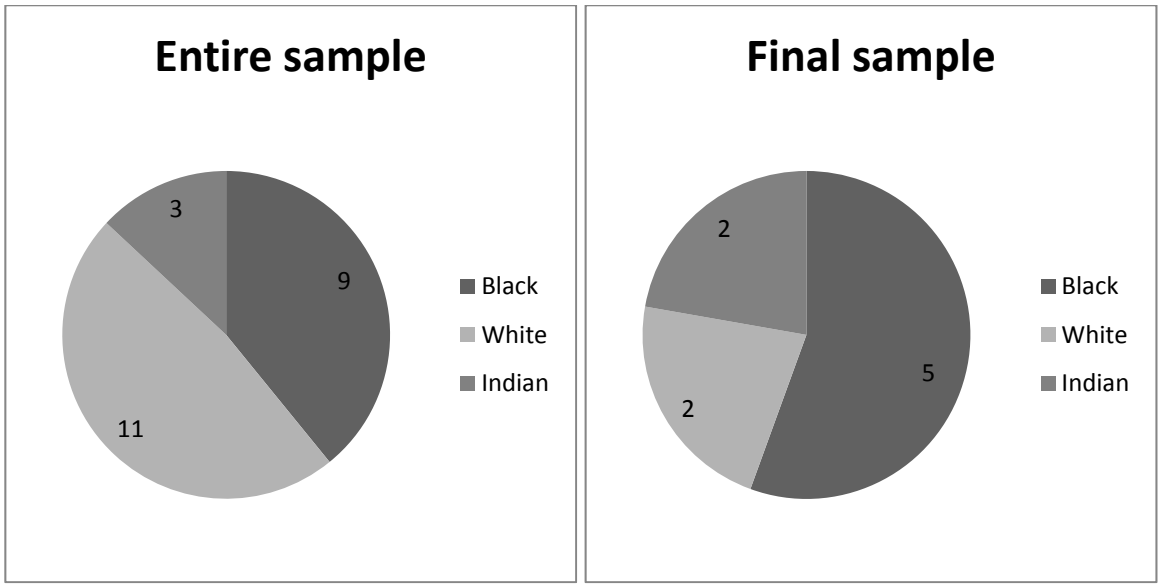
Figure 3.2: Age distribution of the study sample



The majority of the initial sample constituted individuals between the ages of 40 and 50 years as can be seen in Figure 3.2. The final sample reflected the same trend where six of the nine respondents were between the ages of 40 and 50 years. As stated previously, the

interviews containing the richest data were included in the final study and the researcher did not specifically sample for a predetermined age group.

Figure 3.3: Racial distribution of the study sample



The racial distribution of the sample changed rather drastically from the initial to the final sample. As mentioned above the interviews chosen for inclusion were based on quality and not on racial considerations.

3.5 DATA COLLECTION

3.5.1 Technique

The specific attributes of the population that was investigated were their perceptions of psychological ownership, more specifically their perceptions regarding the components of psychological ownership, which will be discussed in full in the literature review. According to Zelger (2000), conversations contain the integration of the experiences, knowledge and attitudes of people, which on their own only represent the individuals' point of reference. Taken together, these individual 'conversations' can bring about a more complex and holistic view of the phenomenon under study. For these reasons, interviews were used for the collection of data. The researcher collected the required data by means of face-to-face, semi-structured interviews, also called the qualitative interview (Rubin & Rubin, 2005).

The use of qualitative interviews allowed the researcher to adopt a conversational approach to the interviews, which also aided in establishing rapport with the interviewees. It was based on the premise that the interviewees actively construct meaning from their experiences and that a conversational approach allowed the researcher to diverge from the interview schedule in order to gain a more in-depth understanding of the interviewees' perceptions and experiences. This was vital since the researcher aimed at providing an extensive description of psychological ownership based on the information obtained from the participants.

3.5.2 Instrument and data

The researcher constructed an open-ended interview schedule. The schedule consisted of 19 open-ended questions to which the respondents had to reply. The schedule was designed in a specific way, which enabled the researcher to align the schedule with the research objectives (Saunders *et al.*, 2007). Due to the nature of the circumstances under which the information was gathered (i.e. wholly unique), the dependability of the interview schedule was not a prerequisite for the study (Saunders *et al.*, 2007).

The schedule was not strictly applied or adhered to since the researcher explored certain areas in more depth as the interviews progressed. This allowed the researcher to maintain as much flexibility as was possible. The researcher, however, ensured that the interviewees understood the concepts included in the schedule in order to reduce the likelihood of bias. In addition, the schedule was carefully planned in order to ensure that the way in which questions were asked would provide the needed answers aligned to the research objectives (Saunders *et al.*, 2007).

The data thus generated was in the form of audio recordings, which were later transcribed into electronic textual documents. The data was therefore of a verbal and textual nature. As mentioned previously, the researcher adopted a flexible approach to the interviews (Saunders *et al.*, 2007) to allow the respondents to 'paint a picture' as perceived by them instead of rigorously guiding them with the line of questioning.

3.6 DATA ANALYSIS TECHNIQUES AND PROCEDURES

Ryan and Bernard (2003) state that two distinct approaches to the analysis of qualitative data can be identified. The first is a “linguistic” approach, while the second can be said to be a “sociological” approach. This is also the view of Coffey and Atkinson (1996), who assert that a narrative approach to data analysis is concerned with linguistic structures and rules as extracted from the narratives or stories that the researcher obtains from the respondents. In such a case, the interview will typically also take the form of the interviewer eliciting narratives or examples of instances from the interviewees, which can overtly be said to be the “recounting of stories”.

As can be deduced from the data collection section above, the data for this study was collected not by means of narratives but by means of qualitative interviews, which were specifically structured around three themes in order to elicit the perceptions of the respondents. Although a linguistic analysis of texts is useful in terms of evaluating narratives (plot, characters, setting, roles), which can then be explored for deeper meaning, the analysis in such a tradition almost always rests on uncovering the meaning inherent in the *structure* of discourses (Coffey & Atkinson, 1996), as opposed to exploring the experiences and perceptions of respondents. For this reason, the present study used the phenomenological approach since the phenomenological approach, unlike a narrative analysis, treats the information obtained from interviewees as a window into their unique experience (Giorgi, 1986; Ryan & Bernard, 2003). With such an approach, the units of analysis (perceptions in the case of the present study) can be explored for meaning from the lived experiences of the respondents as conveyed in the course of the interviews (Giorgi, 1986). This study therefore was less concerned with the structure of speech and narratives, but more with its content and meaning.

Most of the wealth of knowledge contained in organisations resides in employees. Each employee has his or her own perception of the systems and processes in this context, and when these perceptions are grouped together one is able to integrate their perceptions into a meaningful framework in order to arrive at an in-depth description or understanding of such systems and processes (Zelger, 2000). This knowledge was gathered by means of

qualitative interviews as mentioned earlier in this chapter. After the interviews were transcribed, the information thus obtained was organised and processed by means of the GABEK.

GABEK is a computerised qualitative data analysis tool, used to code unstructured verbal data. Zelger (2002) states that individual experiences, attitudes and knowledge can be integrated successfully using the computerised method of GABEK. GABEK produces conceptual 'knowledge systems' in the form of generalisations, theoretical concepts, causal assumptions and value systems. In addition, GABEK allows the exploration of emotional attitudes, opinions as well as the knowledge that employees have of causes and their effects (Zelger, 2000). According to Zelger (2000), the following advantages of using GABEK for qualitative data can be listed:

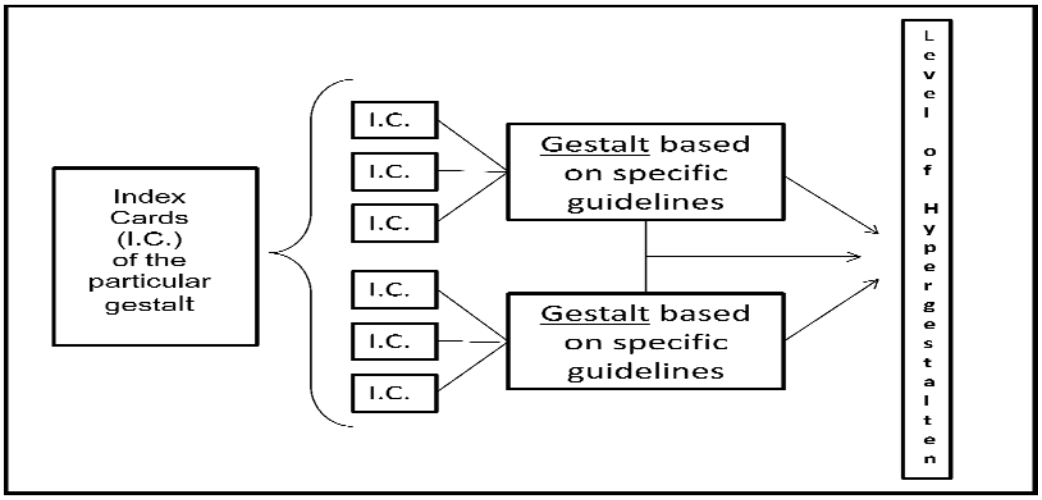
- an open line of questioning allows respondents to say what they really feel is of importance;
- such an analysis enables the researcher to clearly process and interrelate all the answers of the respondents;
- it allows for the holistic illustration of the various and diverse statements gathered from the different respondents;
- since the results are presented in the language of the respondents, they more readily accept the conclusions drawn from it;
- the results can be presented hierarchically with regard to their significance; and
- the results can interactively be obtained and verified using a computer.

GABEK offers a meaningful and effective way to organise and process the data in order to aid analysis. The program not only offers a means of coding the data but also a way of summarising and further analysing the data in order to reach a meaningful description of the phenomenon under study. The analysis was done by importing the text obtained in the interviews into the GABEK program and then coding it according to specific guidelines and thematic contents.

The text was also analysed in terms of clusters according to their conceptual content, these clusters constituted the concepts of control, knowledge and investment of self as

linked to the aims of the present study. In addition, GABEK enabled the researcher to construct association graphs, tree diagrams and causal networks in order to graphically represent the data obtained from respondents (Zelger, 2000). The association graphs can be found in the data analysis chapter, while causal networks fall outside the scope of the present study since they are used for quantitative purposes. The researcher conducted the analysis in such a way as to generate 'tree diagrams' (see illustration below) in a manual and unique way. Figure 3.4 below graphically illustrates the way in which the GABEK can be applied for data analysis.

Figure 3.4: Building a gestalten tree



Source: Adapted from Raich and Hinterhuber (2004).

The text obtained in interviews is imported into the GABEK. According to Müller and Raich (2005), the first step is to build a *gestalt* by means of an indexing system, which contains numerous index cards. Each index card contains a sentence with content relevant to the theme of the research. A *gestalt* is built from at least three and a maximum of nine such index cards, which are linked by means of the key words they have in common. A *gestalt* can be defined as a "relationship between statements" (Müller & Raich, 2005). Each *gestalt* can only be constructed if strict procedures are adhered to during the coding process (Raich & Hinterhuber, 2004).

For the purpose of the present study, GABEK was employed in order to group and order the vast amount of information gathered during interviews. The building of a '*gestalten*

tree' was done in a more informal manner and also manually. For further information, reference can be made to the chapter dealing with the findings of the present study.

3.7 RESEARCH RIGOUR

3.7.1 Credibility

Credibility deals with whether the research measures or explains what it intends to measure or explain and therefore deals with the appropriateness of the method to the research question. In this sense, the key lies in being able to trace the means by which the researcher has arrived at this particular interpretation. Within the interview arena, increasing the credibility could involve showing the participants excerpts of the interpretations of the interview. In this way, the credibility is increased when the participants are able to corroborate or disapprove the researcher's interpretations (Saunders *et al.,* 2007).

The researcher was able to increase the credibility of the process by keeping and reviewing personal notes and using extensive quotations from verbatim transcripts of interviews. In addition, the researcher did independent checks by using other sources of verification and, finally, conducted member checks by going back to those researched for verification and agreement of the findings at the end of the research (Trochim, 2007).

3.7.2 Transferability and applicability

Transferability forms an integral part of judging the quality of research, particularly qualitative research. The transferability of qualitative research has to do with whether the results obtained from such research can be generalised for other contexts or settings (Trochim, 2007). In terms of qualitative research, results do not automatically have to be relevant or transferred to other studies, and as such the findings generated through qualitative methods are rather generalised in terms of theories but not in terms of particular groups (Smit, 2011). Since the current research did not aim to build theory or explain the phenomenon of psychological ownership, transferability was not applicable.

3.7.3 Dependability

Dependability refers to the extent to which data collection methods or analysis will yield consistent findings (Saunders *et al*., 2007). In terms of the present study, the researcher conducted a few pilot interviews to not only refine the interview schedule, but also to ensure that the researcher felt comfortable with the questions and the setting. In addition, the researcher made and retained notes relating to the research design, the rational for the selection of the research strategy and methods, and the data obtained. The researcher also listened to the audio recordings of the interview a few times and also did a multiple analysis of the transcripts in order to increase the dependability of the study. Sections of the coded data were reviewed by an expert in the field in order to determine the level of agreement of the interpretation.

3.7.4 Conformability

In relation to qualitative research, conformability is concerned with whether alternative researchers would reveal similar information, in essence whether the findings generated through a study is a result of the inquiry or the researcher's subjective interpretation (Babbie & Mouton, 2006). In the context of interviews, the key issue of conformability relates to bias. Interviewer bias occurs when the tone or non-verbal behaviour of the interviewer influences the way the participant responds while interviewee bias occurs when the participant perceives the interviewer in a negative light or views the process as either threatening or intrusive (Saunders *et al*., 2007).

3.8 RESEARCH ETHICS

During the various stages of the research study, a number of ethical issues could arise. As outlined by Babbie and Mouton (2006), respondents should never be harmed in any physical, psychological or emotional manner. In addition, the authors agree that participants have the right to refuse participation, insist on confidentiality and privacy as

well as being fully informed about the research and the nature thereof. The following is an exposition of the various ethical issues that are relevant to the present study:

- *Anonymity*. The respondents' right to privacy was respected at all times (Leedy & Ormrod, 2005). The researcher did not ask respondents to provide their names and also assured the interviewees that they would not be identified based on the responses that they give. The researcher assigned a number to each respondent and also removed all content from the transcriptions that could result in individuals being identified.

- *Voluntary participation*. Each respondent's participation was fully voluntary (Leedy & Ormrod, 2005). In addition, each respondent was given the opportunity to terminate the interview at any stage with no negative consequences. To this effect, informed consent was obtained before the interview commenced.

- *Informed consent.* Each participant signed a consent form, indicating that they participated in the study voluntarily and that their responses would be kept confidential. The respondents were assured that their privacy would be respected and their identities protected as was mentioned in the section dealing with anonymity.

- *Interviewing*. Special care was taken to ensure that the questioning was not forceful in any way. The researcher also ensured that the questions were not guiding as to allow the respondents to present their own opinions (Saunders *et al*., 2007).

3.9 CONCLUSION

The preceding section demonstrated how the qualitative research aims were achieved by means of the phenomenological approach, under the rubric of a broader interpretivist philosophy. In the next chapter, the findings, as obtained from the respondents during interviews, will be presented, analysed and discussed with specific reference to the current theory on psychological ownership.

CHAPTER 4: FINDINGS AND DISCUSSION

4

4.1 INTRODUCTION

The preceding chapter described the literature that was consulted to investigate the concept of *psychological ownership*. In the present chapter, the results are presented and analysed. Section 4.2 revisits the process of data analysis, specifically the process by which the data was coded. Section 4.3 presents a summary of the results of the current study and of the concepts as obtained from the GABEK analysis. In addition, as the results are presented below, each subsection will be discussed in detail. Section 4.3 provides a discussion of the results as they relate to the theory of psychological ownership in order to arrive at a description of the perceptions that the middle managers held of the components of this construct. The sample is not discussed in the current chapter. For a detailed discussion, the reader may refer to the methodology chapter.

4.2 CODING AND DATA ANALYSIS

GABEK offers a consequential and valuable way to arrange and process the data in order to assist analysis. The program offers a means of coding the data, as well as a means of summarising and further analysing the data in order to reach a meaningful description of the phenomenon under study. The analysis was done by importing the transcribed

interviews as uncoded text into the GABEK program and then coding it according to specific guidelines and thematic contents.

The text obtained through interviews was imported into the GABEK. According to Müller and Raich (2005), the first step is to build a *gestalt* by means of an indexing system, which contains numerous 'index cards'. Each index card contains a sentence with content relevant to the theme of the research. For this research, the index cards consisted of the original text, divided into smaller units, which contained the expressions of the interviewees. The index cards therefore constituted the 'meaning units' as envisioned by the phenomenological psychological analysis of Giorgi (1986). The expressions were coded by allocating the expressions to a specific theme (i.e. control, knowledge and investment of self) and then adding additional or emergent themes that came to light as the analysis proceeded. A *gestalt* is built from at least three and a maximum of nine such index cards, which are linked by means of the key words they have in common. A *gestalt* can be defined as a "relationship between statements" (Müller & Raich, 2005).

Table 4.1 summarises the data analysis process as aided by GABEK and applied under the rubric of phenomenology.

Table 4.1: Step-by-step data analysis process

Step 1: Transcriptions and reading of data
• Data transcribed into text • Data read
Step 2: Contextual analysis
• Data re-read to obtain a general overview • Data ordered into meaning units (done by means of GABEK index cards)
Step 3: Reduction through transformation
• Meaning units transformed into general description using categories; also called structural description by Giorgi (1986) • Coding done through GABEK
Step 4: Construction of networks
• All data divided into categories or themes • Association graphs through GABEK
Step 5: Description and discussion

- Data discussed in terms of respondents' view to form a comprehensive understanding
- Data described in psychological or theoretical terms to reach research aims

4.3 ASSOCIATION GRAPHS AND CONCEPT ANALYSIS

In this section, the three components of psychological ownership will be analysed and discussed as they were presented by the participants during the interviews. For each of the components (control, knowledge and investment of self), an association graph will be presented, which formed the basis of the subsequent data analysis and discussions. An *association graph* can be defined as an illustration that reveals conceptual associations with the central expression (Zelger, 2000). By viewing the association graphs, the central topics that are related to the three constructs of psychological ownership can be viewed as a starting point for analysis.

All the associations that occurred in relation to the central expression, which constituted control, knowledge and investment of self, appear on the association graph together with the number of times the related concept appeared in relation to the central expression. The figures are presented below and as stated above, formed the basis for further analysis and discussion.

4.3.1 Control

As discussed in the methodology section, the data was collected by means of semi-structured, face-to-face interviews, also called the qualitative interview as proposed by Rubin and Rubin (2005). Without explaining the concept of *psychological ownership* to the interviewees, the respondents were asked a few questions in relation to their role as a middle manager as well as what makes them feel like a part of their organisation. More specifically, they were asked to elaborate on control within their function in terms of feelings of belonging. The following questions formed part of the interview schedule and were asked in relation to control:

1. How much control do you think a middle manager is supposed to have over targets and objectives (elaborate according to area) in order to feel like a part of this organisation? Why do you say that?

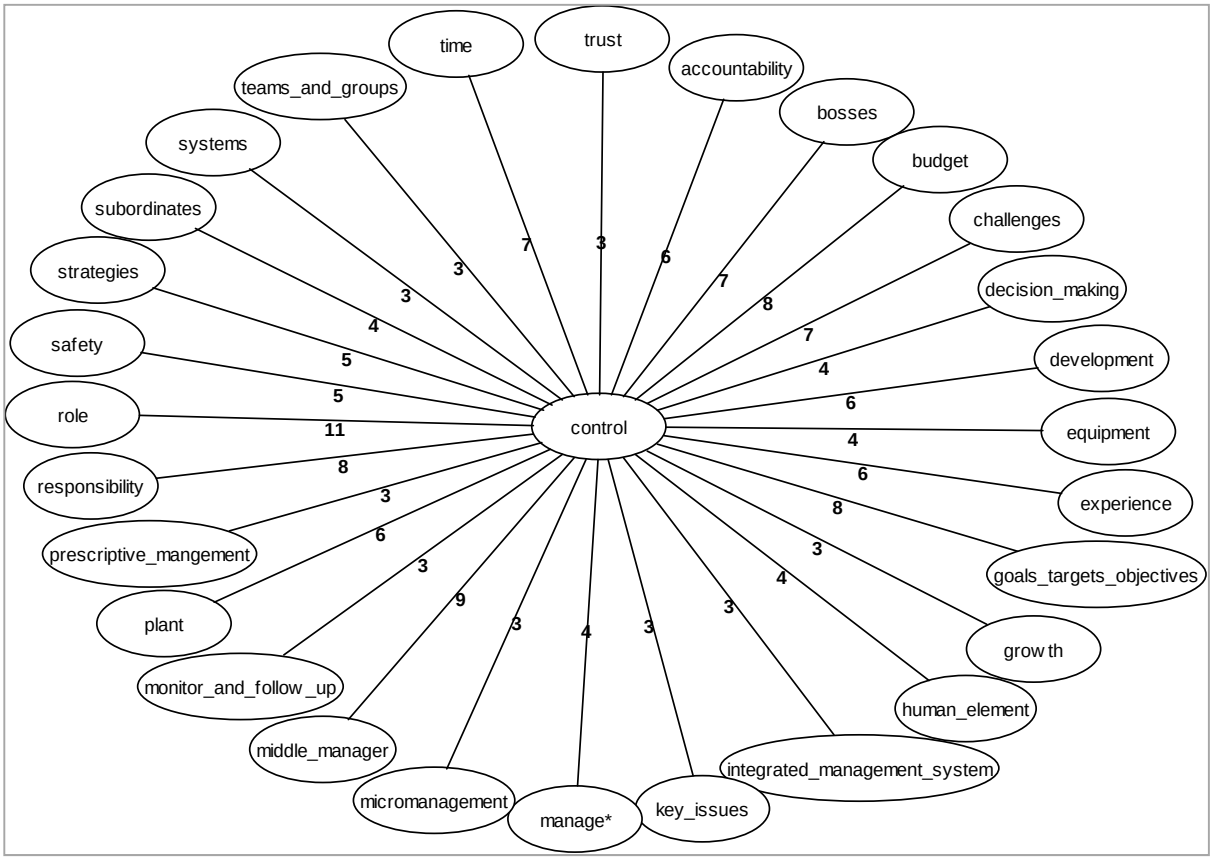
2. Describe control with specific reference to your role. To your way of thinking, is there a specific type or form (of control) that you need in order to belong in this role?

3. How much control do you think you have?

4. How does this measure up to the control that a middle manager should ideally have?

The questions above were merely applied as a guide. During the course of the interviews the researcher listened for various contents and asked the interviewees to elaborate upon them. As a result and after the coding of the data was completed by means of GABEK, the researcher was able to arrive at an association graph of control, which demonstrates all the concepts that were discussed during the course of the interviews in relation to control. The association graph is presented below.

Figure 4.1: Association graph - control



As can be seen from the association graph presented above, a large number of concepts were identified by means of the interviews as being related to control. Although there were a large number of concepts, only the most frequently occurring concepts were included in the analysis. As discussed in the methodology chapter, the researcher looked at the importance that respondents attached to the various concepts. This was done by looking at the frequency with which the respondents made reference to various concepts. The frequency with which concepts occurred with direct reference to control is indicated by a number as can be seen from the association graph above. Those frequently occurring concepts included all those that had a minimum of six references made to it. These concepts are presented in Table 4.2 together with sections of the original text in order to illustrate the meaning that respondents ascribed to them.

Table 2.2: Concepts and original text pertaining to control

Concept	Illustration

Accountability	"Control means accountability..."; "...fully accountable for his people in terms of safety and their development."; "...for equipment in terms of legal requirements..."; "If you are accountable for something, then you need to have a fair degree of control over it."; "....disempowering people if they are accountable and not the control that goes with it."; "...area of control must match accountability..."; "...greater control leads to greater accountability..."; "...control vital to achieve my objectives and one has to answer for it if objectives are not met."
Bosses	"...must only keep five percent control on strategic issues..."; "...can check in to see how things are going..."; "...must not have to ask too many questions..."; "...as much control as allowed by your boss..."; "...when the boss has to step in, you function on a lower level than you are supposed to..."; "...most of the control still sits with the bosses, who have to sign off on anything..."; "...then they ask you to make decision rather than going over your head."
Budget	"...I should be able to say at what cost we are running."; "...we must [preferably] be asked what we will do and how much we will save..."; "...must look after the budget..."; "...on the budget side we have full control, obviously with the leadership adapted to that control."; "...would like to have a bigger slice of the budget..."; "...the focus is optimisation with limited resources..."; "...should not have the power to write out cheques left and right, there must be some form of control..."; "...not a lot of scope, because the boss has to sign everything off..."
Challenges	"...with control you need to juggle around challenges, such as people, equipment and process challenges."; "...you need to be challenged by means of extending your area of control."; "...need control to deal with certain challenges..."; "...if you have control you will know how to deal with challenges as they arise."; "...must have a fair amount of control due to the nature and amount of decisions becoming a challenge."; "...do not believe in exercising a

	lot of control, only when there are problems to be dealt with."
Development	"...control over the development and growth of the individual."; "...development of systems that facilitates my role, so that I have more control over my daily activities."; "...we are accountable for the development of people..."; "...if I had more control I would be able to develop myself much quicker..."; "...for my own personal development."
Experience	"...would like to be able to put myself in the position where I get more exposure, which depends on how much control I have..."; "...I have a counterpart [middle manager] in my area, so that gives me less exposure, as well as almost no control."; "...in each environment the exposure is very different."; "...you do not want to have to ask people how to do basic things that you could have learnt if you had more control and more experience."; "...with more experience you can move to a higher level and then have more control..."
Goals, targets and objectives	"...must have control such that, based on the information fed to me, I can decide on what my area's goals are..."; "...we have our own forums to decide what we are doing well and where we need to improve..."; "...my boss' objectives are mine, but I have the control over implementing it or not..."; "...you need a lot of control, so that it can match with your responsibilities..."; "...need to have control over the targets that are set..."; "...having more control is one of my primary objectives currently."; "...I think I have a fair amount of control, but I think I can also get more control, that is one of my goals..."; "...control is important so that I can achieve my objectives, if I have less control, I battle to do my work..."; "...focusing a lot on control at the moment, to ensure that the targets are met..."
Manage*	"...achieved results through control of the people."; "...to be in control of a section of the plant and managing it in terms of delivering the results..."; "...the bigger the area, the more the

	control and the more managerial aspects there are such as people management and time management...”; “...you don’t have to exercise that much control if you reconcile who you are with the manager role...”; “...do not want to be the kind of manager that has to look over my foremen’s shoulder...”; “...some instances call for micromanagement, but that should be short-lived...”; “...at this stage my team is not that mature, therefore not fully in control and I have to manage them closely.”; “...if the right person is hired in the first place, you don’t need to control or manage them that closely...”; “...management systems are there to ensure that you do the things you should do.”; “...leadership adapted to control...”; “...management should not be prescriptive, when it is, it means I am not in control...”
Middle manager	“...95% of the control should be given to the middle manager...”; “...I am running my own business as a middle manager, they should give me control and let me run the business, or at least my section of it.”; “...as a middle manager you need to develop enough systems to give you more control...”; “...more clearly see your contribution as a middle manager with the needed control...”; “...a middle manager should have control over how he does things...”; “...as a middle manager I would be able to take control if something goes wrong...”; “...if you are not the only middle manager in a section, then you do not have as much control...”; “...in terms of control, a middle manager is not able to do what he used to be able to do...”; “...a lot of power has been taken away from the middle manager.”
Plant	“...the nature of the problems in the plant adapts the control you exercise.”; “...if the plant you work on is challenging you need a relatively large span of control...”; “...the size of the plant determines how many people are under your area of control...”
Responsibility	“...the whole integrated management system is my responsibility and for that you need exercise a fair amount of control.”;

	"...responsible for ensuring that the people understand and that they are performing..."; "...the five strategic drivers are my responsibility and therefore under my control..."; "...responsible for maximising the profit of my section..."; "...our responsibility to put measure in place to protect people..."; "...your area of control should match your responsibilities..."; "...the area you are responsible for stipulates your span of control..."
Role	"...if I do not get that control, then I will tell the person who took it away that he must now fulfil my role..."; "...in terms of control, in my role I have everything I need."; "...within your role you have a specified area and the full scope of it under your control..."; "...a part of my role is the ability to take over if the need arises."; "...my role is being in control of a production plant, managing it in terms of delivering on quality, delivering the product on specification and also satisfying the customer and also working in a multi-disciplinary team."; "...when my role is taken on by my boss, then I have less control..."; "...a part of the role I see as adding value with whatever control is afforded me..."

In order to further refine, and ultimately describe, the perceptions that middle managers in the petrochemical industry have of the constituents of psychological ownership, the concepts as extracted from the GABEK analysis were divided according to the frequency with which they occurred during the interviews. Table 4.3 below summarises the most frequently occurring concepts in two categories: key concepts and supplementary concepts. The key concepts are those ones that came to the fore as central to the perceptions of control, due to the fact that they were referred to at least seven times during the interviews as being directly related to control. The supplementary concepts were referred to with less frequency, but no less than six times during the interviews. In table 4.3, the key and supplementary concepts are presented together with short descriptions of the context in which the concepts were used or the specific properties of the concepts under discussion.

Table 4.4: Control - Key and Supplementary concepts

KEY CONCEPTS	SUPPLEMENTARY CONCEPTS
Role ▪ Needing control to fulfil role ▪ Taking charge ▪ Delivering results ▪ Satisfying customers ▪ Adding value ▪ Forming part of a multidisciplinary team	**Accountability** ▪ For people ▪ For equipment ▪ Part of the role of MM ▪ Reciprocal relationship with control
Middle Manager ▪ Having majority control ▪ Having systems in place helps ▪ Enabling one to see one's contribution ▪ Over how ▪ Diminishes if counterpart MM ▪ Amount has changed over time	**Development** ▪ Personal development ▪ Subordinate development ▪ Systems and procedures that will help in performance of MM role
Responsibility ▪ Integrated management system ▪ Fostering understanding ▪ Performance ▪ Strategic drivers ▪ Profitability ▪ Should match responsibility ▪ Safety of people	**Experience** ▪ Allows to build up experience ▪ Experience allows for more control
Goals, targets & objectives ▪ To choose goals ▪ Control to reach ▪ Must correspond with objectives ▪ Control over those g/t/o	**Plant** ▪ Nature of risks determines how much one needs ▪ Size of area
Budget ▪ Control over budget decisions ▪ Decision-making discretion	
Manage* ▪ Managing a section of plant/operations ▪ As control increases, so do managerial functions ▪ Role of manager ▪ Micromanagement ▪ Depends on maturity of team ▪ Management systems help with control ▪ Prescriptive management takes control away	
Challenges ▪ Need control to deal with challenges ▪ Can be solved if one balances control (having vs. exercising)	
Bosses	

▪ Have most control ▪ Must provide MM with more	

Having analysed and summarised the findings in terms of the concept of *control*, the data will now be discussed in terms of Step 5 as described in Table 4.1 earlier in this chapter. As stated in the data analysis process, the data will be discussed in terms of the respondents' view to form a comprehensive understanding from their unique experiences. The discussion will be divided in terms of the key and supplementary concepts as before.

KEY

Role

In order for middle managers to fulfil their roles, they need control. Control affords these middle managers the ability to perform their functions within specified parameters as well as taking charge of situations when the need arises. Relating to the functions that the managers are expected to perform in term of their roles, the functions that are closely linked to the amount of control such a manager has, include control over delivery of results; satisfying customers (both internal and external); adding value and forming part of a multi-disciplinary team. It also came to light that the moment someone steps into their roles, control is diminished for the managers.

Middle managers

When one looks at the position of middle manager, most of the managers agreed that the majority of control to perform the functions of such a position should lie with the middle manager. This control should to a large extent be over *how* their functions are performed. This would to their way of thinking then allow them to more clearly see their contribution. It was established that having various systems in place assists the middle manager with control of his or her area in the production environment. Such systems are typically created by the middle managers themselves. In addition, the managers agreed that the amount of control that they have, has diminished to some extent over a period of time and also diminishes if they have a counterpart middle manager in their area who shares their functions.

Responsibility

The control that middle managers have should be matched to the responsibilities that they have. The main responsibilities that were identified by the managers as having a direct association with control were those of the integrated management system and strategic drivers; the performance and safety of subordinates; fostering understanding among peers and subordinates as well as the profitability of their section of the production environment.

Goals, targets and objectives

Control seemed to be intimately linked to the setting and achievement of goals, targets and objectives. The managers agreed that they should have control over the goals, targets and objectives that are set. Not only should they have control over it, but they should be allowed by means of the appropriate amount of control and information available to them to decide what the goals will be for their respective areas. For the managers, having control ensures that targets are met as set out by their superiors, but control should also be appropriately matched to the objectives that should be achieved.

Budget

In terms of the control that the middle managers have over budget decisions, they expressed a need to have more decision-making discretion in that regard. Specific areas in which the middle managers have and feel they would like to have more control include budget decisions, signing power, cost-saving measures and current expenditure.

Manage*

Most of the middle managers agreed that control is vital for management (of people, equipment and functions). There seems to be this notion that as control increases, so do management functions and *vice versa*. The middle managers felt that the moment they are micromanaged by their bosses, their control diminishes. In addition, it was established that the level of control required to manage subordinates depends on the level of maturity of those subordinates. All the managers also seemed to agree that the most challenging aspect of management (for which control is needed) seems to be the people aspect, which forms an integral part of the role of a manager.

Challenges

It was found that the middle managers have to deal with challenges on a regular basis. This may be due to the nature of the environment, since there is a great emphasis on production efficiency as well as the fact that the managers operate in a high risk environment. As challenges occur, more control is needed to deal with such situations. The managers seemed to feel that when they balance control (having control versus exercising control), challenges can be dealt with effectively.

Bosses

The most pertinent perceptions regarding the managers' bosses that came to the fore were the fact that the managers felt that most of the control lies with their bosses. Almost all of the middle managers also agreed that they must be afforded more control.

SUPPLEMENTARY

Accountability

Due to the fact that the middle managers are held accountable for their section of the production environment, they need control, since it forms part of the role of these managers. They are held accountable for people's safety and development as well as all the equipment utilised in their sections. As their accountability increases, so does the amount of control they have to exercise.

Development

In terms of development, the middle managers have control over their own personal development as well as the development of their subordinates.

Plant

The nature of the physical environment determines how much control is needed by the middle managers. The riskier/larger the section of the plant they have to manage, the more control is needed.

4.3.2 Knowledge

As stated in discussing the concept of control above, the interviews were conducted in a semi-structured manner. This means that the researcher only had a few questions available and probed the interviewees further depending on the content that arose. Without explaining the concept of *psychological ownership* to the interviewees, the respondents were asked a few questions in relation to their role as a middle manager as well as what makes them feel like a part of their organisation. More specifically, they were asked to elaborate on knowledge about their function in terms of feelings of belonging. The following questions formed part of the interview schedule and were asked in relation to control:

1. Over how much knowledge do you think a middle manager has to possess about the company's targets and objectives to feel like a part of the organisation? Why do you feel that way?

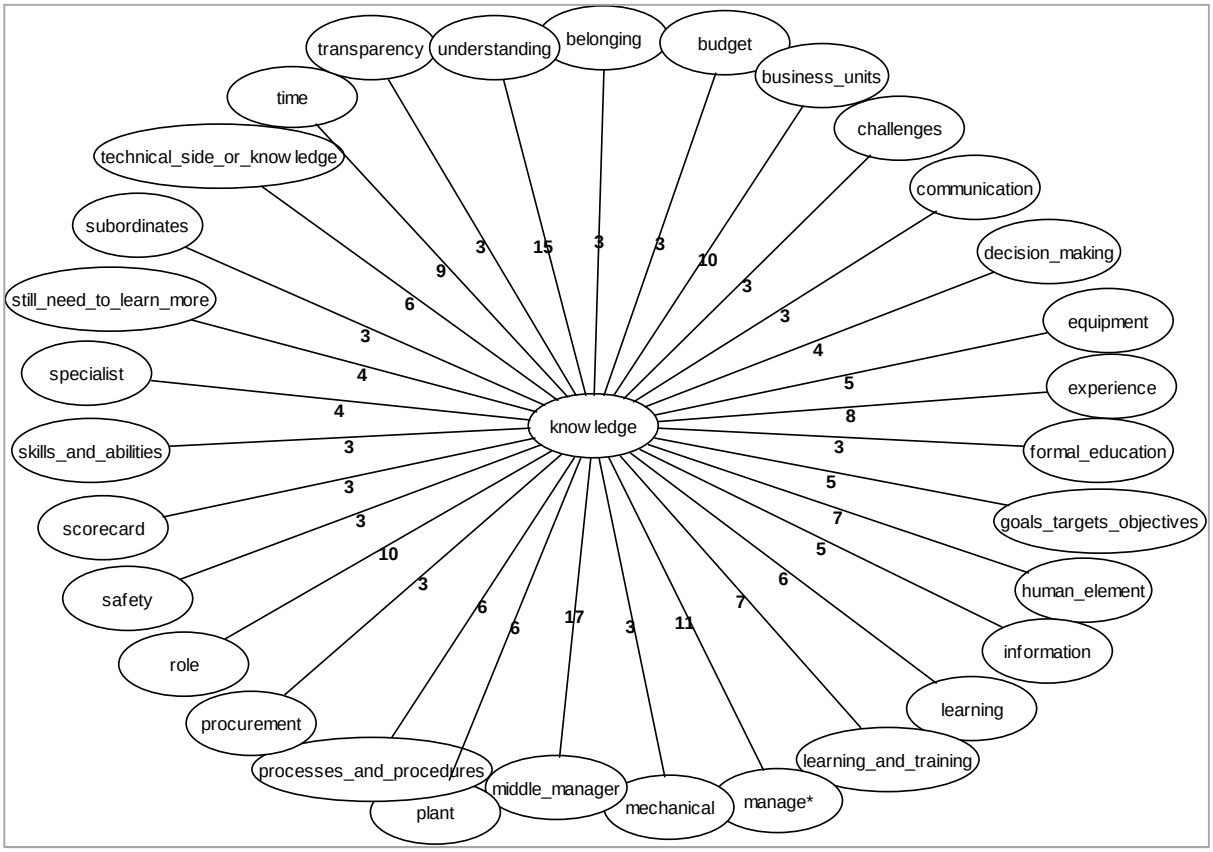
2. Describe knowledge with specific reference to your role. To your way of thinking, is there a specific type or form (of knowledge) that you need in order to belong in this role?

3. How much knowledge do you think you have?

4. How does this measure up to the knowledge that a middle manager should ideally have?

The questions above were merely applied as a guide. During the course of the interviews, the researcher listened for various contents and asked the interviewees to elaborate upon them. As a result, the researcher was able to arrive at an association graph of knowledge, which demonstrates all the concepts that were discussed during the course of the interviews in relation to knowledge. The association graph is presented below.

Figure 4.2: Association graph - knowledge



As can be seen from the association graph presented above, a large number of concepts were identified by means of the interviews as being related to knowledge. Although there were a large number of concepts, only the most frequently occurring concepts were included in the analysis. As conferred previously in the section above, dealing with control, the researcher looked at the importance that respondents attached to the various concepts. This was done by looking at the frequency with which the respondents referred to various concepts in direct relation to knowledge. Those frequently occurring concepts included all those that had a minimum of six references. These concepts are presented below together with sections of the original text in order to illustrate the meaning that respondents ascribed to them.

Table 4.4: Concepts and original text pertaining to knowledge

Concept	Illustration
Business units	“It helps decision-making in a unit if a section leader knows, or at

	least has 80% knowledge."; "...if you have moved through various business units, it helps in terms of the knowledge you have..."; "...must also have a clear understanding of what it happening in the business unit that is supplying me and the business that I am supplying a service to..."; "You need a lot of knowledge, because a middle manager is not limited to his plant, it goes beyond."; "...in an organisation this big, you need knowledge of the various units, or at least know where to find the information..."; "...with the various systems that we have, you can get information easily on the various units, which is vital, you just need to know where to look..."; "...you need knowledge of the processess followed on other areas of the business..."; "...you also need to know how a piece of equipment is used in other units. If you take the same piece of equipment and use it in another unit, the result would be quite different."
Experience	"...gain experience through day-to-day communication, and also with training..."; "...you don't need to know every little detail, but in two to three months you can know enough to make a meaningful contribution..."; "...rather ask questions and make suggestions to ensure that people are able to do their work."; "...with the right knowledge you can relieve the pressure on others, but that comes with experience."; "...I am still nowhere near the ideal amount of knowledge because I am still very young and lack experience..."; "...one cannot know everything and I think knowledge comes with time as well and experience..."; "...you must definitely have knowledge as well, but not necessarily knowledge obtained from books, experience is more important though..."; "...the most important knowledge one could have on this level is through experience..."
Human element	"...understanding my partners is important and also having a good understanding of how to deal with people..."; "...how to handle people is the most important knowledge to have in this role...";

	"...the people side, that skill, if you do not have it or you do not like it, you must not even think you will make it in any management position..."; "...the right formal training coupled with the necessary people skills will give you the knowledge you need..."; "...in terms of knowledge, I would say that you need to be able to work with people and get the best out of them..."
Learning	"...you should go through a certain learning curve..."; "...to learn something then understand it and then react on it is how knowledge is gained..."; "...there are a lot of things that are easy to learn [sic] someone..."; "...one can learn quickly if you know where to look for the knowledge you are lacking..."; "...you never stop learning..."; "...there are certain things you can only learn on the job..."; "...up your knowledge levels by means of training..."; "...there is a lot I still need to learn, you learn every day, I come across new knowledge every day."; "...you need to make time to learn the things you do not know..."; "...knowledge for me developed from my basic training..."; "...your learning must be multifaceted."
Manage*	"...you need a lot of knowledge for any form of management position."; "...if you micromanage, then you are not utilising your knowledge to its full consequence..."; "...a middle manager is not a specialist in terms of his knowledge, he is a manager of a wide variety of things..."; "...need to know about the entire management structure..."; "...needs to have a fairly good balance, but the emphasis should be on management aspects and managing people..."; "...you need to have a good grasp of the fundamentals of management..."; "...you do not need a big qualification to be a manager..."; "....enough knowledge to make management decisions..."; "....if you do not have the right knowledge for management, then you will do more harm than good..."
Middle manager	"...a middle manager needs at least 70% knowledge of this organisation."; "...it helps with decision-making in a unit if a middle

	manager knows at least 80%."; "...it is important for a middle manager to understand the business and at the very least all the critical equipment..."; "You need a lot of knowledge, because a middle manager is not just limited to his plant..."; "...one needs to go through a learning curve in order to fulfil the role of a middle manager..."; "...a middle manager needs more knowledge on leadership than on management, management is something you can pick up..."; "...as a middle manager you need to be knowledgeable of the organisation's systems and standards..."; "...formal education is not that necessary for a middle manager..."
Processes and procedures	"...knowledge of the processes is easy to learn..."; "...knowledge of the process aspects are [sic] not that critical..."; "...if you do not know the processes and procedures, you should make sure you know someone who does..."; "...if you know the process of a[n] area, you know a lot already..."; "...if you do not make it a goal to know the procedures, then you can get reprimanded if you don't use them..."; "...there is a process for almost anything you need to do, knowledge of them is therefore important..."
Role	"...a core part of your role is safety and you need to make sure you learn everything there is to know..."; "...you are measured on how you fulfil your role, therefore you need knowledge of your role as well..."; "...you can only make a contribution if you understand your role..."; "...you should go through a learning curve before you can start to fulfil your role..."; "...knowledge of how to work with people can make or break you in that role..."; "...the more knowledgeable you are about your role, the better you are able to support others..."; "...you need a lot of knowledge otherwise you start to confuse your role..."; "...you have a critical role to play and for that you need knowledge..."; "...there is a very big legal responsibility that comes with the role we fulfil..."
Technical side or knowledge	"...you need knowledge of the technical side, but not as much as the people side of things..."; "...the knowledge that really helps you

	initially is the technical knowledge."; "...knowledge should focus on management more than on the technical side..."; "...about 30% of your knowledge needs to be on technical things..."; "...it does not mean that you can be a manager if you have all the technical knowledge..."; "...you can have all the technical knowledge, but if you do not have process knowledge then you do not really understand..."
Time	"...lack of knowledge indicates lack of availability of time to learn..."; "...over time your knowledge increases..."; "...one needs to set time aside to learn the things you do not know..."; "...spend most of your time managing people..."; "...if you have a network, you save time searching for the things you need to know..."; "...we need to optimise everywhere, save time and money, you need to have an understanding of that as well..."
Understanding	"...you need at least a brief understanding of how the whole value chain works..."; "...it is important for a middle manager to understand the business..."; "...a clear understanding of what is happening in the business..."; "...without an understanding you may make decisions that impact the business negatively..."; "...there is a lot one needs to know and understand..."; "...one needs to understand what your contribution is..."; "...understanding what needs to be done..."; "...know and understand what you are doing..."; "...in terms of knowledge, learning is easy, it is understanding that is a challenge..."; "...for some people understanding is intuitive and for some, it is formal education..."; "...understand the generations, culture, climate, personalities and those things..."; "...understand the processes..."; "...you have to understand the plant..."; "...it you don't have process knowledge, then you cannot really understand what is going on..."

In order to further refine, and ultimately describe, the perceptions that middle managers in the petrochemical industry have of the constituents of psychological ownership, the

concepts as extracted from the GABEK analysis were divided according to the frequency with which they occurred during the interviews. Table 4.5, as referred to with the concept of *control* above, summarises the most frequently occurring concepts into two categories: key concepts and supplementary concepts. The key concepts are those ones that came to the fore as central to the perceptions of knowledge, due to the fact that they were referred to at least seven times during the interviews as being directly related to the concept of *knowledge.* The supplementary concepts were referred to with less frequency, but no less than six times during the interviews. In Table 4.5, the key and supplementary concepts are presented together with short descriptions of the context in which the concepts were used or the specific properties of the concepts under discussion.

Table 4.5: Knowledge - Key and Supplementary concepts

KEY CONCEPTS	SUPPLEMENTARY CONCEPTS
Middle manager ▪ Needs 70% of organisation ▪ Facilitates decision-making if MM has a lot ▪ Understand business & critical equipment ▪ Knowledge over and above your area ▪ Learning vital before you can fulfil your role ▪ Leadership more NB than management ▪ Formal education not essential ▪ Knowledge of organisational systems	**Learning** ▪ Go through a learning curve ▪ Learn > understand > use it = knowledge ▪ Facilitated by knowing where to look for knowledge you need ▪ Continuous ▪ Experiential learning ▪ Via training and development ▪ Make time for it ▪ Must be multifaceted
Understanding ▪ How value chain works (culture, climate) ▪ Business ▪ Lack of...negative impact in terms of decisions made ▪ What you need to do ▪ Learning vs. understanding ▪ Knowledge of processes facilitates understanding	**Technical knowledge** ▪ Not as vital as knowledge of people ▪ Helps initially when you start in the role ▪ Only need to know 30% ▪ Technical knowledge does not necessarily qualify you as a manager ▪ Need to apply technical knowledge to processes for it to mean something
Manage* ▪ Need a lot for management position ▪ If micromanage, don't use knowledge fully ▪ Not specialist (generalist) ▪ Know management structures ▪ Emphasis should lie with management & people management ▪ Needn't have formal qualification ▪ Knowledge to base management decisions on ▪ Need the right knowledge	**Processes & procedures** ▪ Process knowledge easy to acquire ▪ Know who has the necessary knowledge ▪ Must know necessary processes and procedures ▪ Everything one has to do is via processes, thus NB

Role
▪ Knowledge of:
  o Safety
  o Role as MM
  o How to contribute in terms of your role
▪ People can make or break you
▪ Legal responsibility
▪ Because of critical nature of your role
▪ Go through learning curve
▪ To eliminate confusion, you need knowledge of your role
 	
Business units
▪ Know 80% of what is going on in a unit
▪ Moving through different units helps in terms of gaining [sic] knowledge
▪ Thorough knowledge of supply chain
▪ Knowledge of essential processes & equipment applications
 	
Time
▪ Lack of time to learn leads to lack of knowledge
▪ Purposefully set time aside
▪ Having a network saves time (in terms of searching for information)
▪ Knowledge of time management
 	
Experience
▪ Day-to-day communications
▪ Training
▪ To make meaningful contribution
▪ Asking questions
▪ Make suggestions
▪ Knowing the right things
▪ Gain knowledge with experience
▪ More you have the more you can support others
▪ Comes with time
▪ Experience more NB than books etc.
 	
Human Element
▪ Knowledge of how to deal with people
▪ People side, skilled at working with people
▪ People skills and right education a good combination
▪ Getting the best out of people	

Having analysed and summarised the findings in terms of the concept of *knowledge*, as with the concept of *control* above, the data will now be discussed in terms of Step 5 as described in Table 4.1 earlier in this chapter. As stated in the data analysis process, the

data will be discussed in terms of the respondents' view to form a comprehensive understanding from their unique experiences. Again, as with the concept of *control*, the discussion will be divided into the key and supplementary concepts.

KEY

Middle manager

With regard to the position of middle manager, the managers felt that they need at least 70% knowledge of the entire organisation and the systems that are in place. All the managers felt that they not only need to have knowledge of their positions, but also knowledge that goes above and beyond it. For the fulfilment of their positions, they need to understand the business as well as the critical equipment. The managers said that formal education is not that necessary for them to be able to perform the function of a middle manager, but that some form of learning is essential before the role can be fulfilled. In addition, they felt that knowledge of leadership principles is more important for them than knowledge of management.

Understanding

In terms of the knowledge needed to perform the function of a middle manager, the managers all stressed that understanding is an important aspect of their daily work. For the managers, knowledge facilitates understanding, such as with systems and procedures. It came to light that the managers felt that understanding of the entire value chain, what needs to be done as well as processes and procedures were very important for them since lack of understanding in these areas could have a possible negative impact due to uninformed decision-making.

Manage*

The managers felt that the essence of the knowledge that they need to fulfil their functions should lie with the process of management as well as people management. Not only do they need a lot of knowledge for such a management position, but they also felt that they need the right knowledge although a formal qualification is not necessary. The right knowledge would then constitute knowledge that they can use to base decisions on, which

would also be of a general nature. They also felt it is necessary for them to have knowledge of the management structures.

Role

In terms of the role that these middle managers fulfil, they agreed that they need knowledge of the following: safety regulations and compliance; the role of the middle manager and also knowledge of how to contribute in terms of their role. Due to the legal responsibility or accountability of these managers as well as the critical nature of their roles, emphasis was placed on compliance aspects of their roles in addition to the more generic knowledge regarding a middle manager's role. In terms of their role, a vast amount of knowledge of people is also necessary since the people that they lead can either "make them or break them".

Business units

When regarding the various business units in the production environment, the managers felt that they need to know at least 80% of what happens in the various units. This enables the managers to have thorough knowledge of the entire supply chain in addition to knowledge of the essential processes and equipment applications that are vital to the performance of their duties. The managers also agreed that moving through various business units helps them in terms of gaining knowledge which is important for the performance of their functions.

Time

The managers stated that they need to purposely set time aside to gain knowledge. Lack of time for them leads to lack of knowledge. They also stated that they need knowledge of time management in addition to having a network that allows for the speedy retrieval of the right information.

Experience

Most of the managers stated that experience is the most important source of knowledge for them. This experience enables them to make a meaningful contribution and allows them to know the right things. This knowledge in the form of experience is built up over time and is gained by day-to-day communications, training, asking relevant questions and making suggestions. The managers also agreed that the more experience they have, the better they are able to support others in their roles. For most of these managers, experience was more valuable than formal qualifications.

Human element

In terms of a vital area in which these managers must be knowledgeable, knowledge of people or the human element in their roles was regarded as very important. These managers felt that they need to know how to work with people or be skilled in working with people and getting the best out of them. For the managers, a good combination would be people skills coupled with the necessary education about their roles.

SUPPLEMENTARY

Learning

In terms of the knowledge required for successful performance of the middle manager function, the managers felt that they need to go through a process of learning. Learning should be continuous as well as multifaceted and may be in the form of training, development or experiential learning. In addition, the managers felt that learning is facilitated by knowing where to look for information. For the managers, learning which facilitates understanding and ultimately the use of what was learnt lead to knowledge.

Technical knowledge

According to the managers, technical knowledge is not as vital as knowledge of people. Technical knowledge only initially helps the managers when they start out in the role of a middle manager, but does not necessarily qualify them as managers. They agreed that they only require 30% technical knowledge and also that the technical knowledge needs to be applied in terms of the correct processes for it to mean anything for them.

Processes and procedures

Due to the fact that most of what the middle managers must do in terms of their roles, has to be done via the correct process or procedure, knowledge thereof is very important. Knowledge of the company's processes and procedures is easy to acquire since the managers need only know who to go to if they themselves do not know.

4.3.3 Investment of self

As with the concepts of *control* as well as *knowledge*, the interviews were conducted in a semi-structured manner, with an interview schedule that served as a guide. This means that the researcher only had a few questions available and probed the interviewees further depending on the content that arose. Without explaining the concept of *psychological ownership* to the interviewees, the respondents were asked a few questions in relation to their role as a middle manager as well as what makes them feel like a part of their organisation. More specifically, they were asked to elaborate on "investment of self" regarding their function in terms of feelings of belonging. The following questions formed part of the interview schedule and were asked in relation to investment of self:

1. To your way of thinking, how much energy should a middle manager expend, how much of yourself would you say you invest (energy being an example) to feel like a part of this organisation? Why do you feel that way?

2. Describe this "investment" with specific reference to your role. To your way of thinking, is there a specific type or form that you need to display or possess in order to belong in this role?

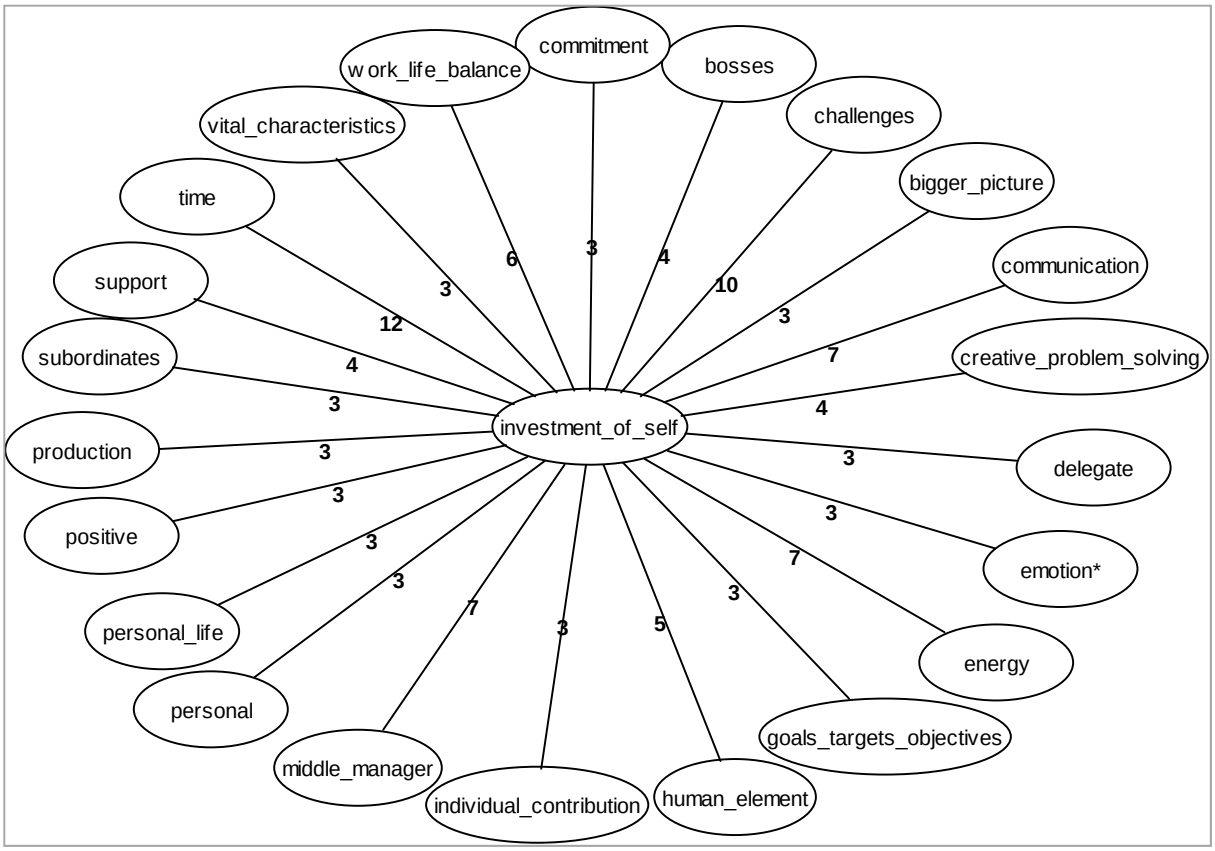
3. How much of yourself do you think you invest in or at Company X?

4. How does this measure up to what a middle manager should ideally invest or demonstrate in relation to belonging here and fulfilling his or her role?

The questions above were merely applied as a guide. During the course of the interviews, the researcher listened for various contents and asked the interviewees to elaborate upon

them. As a result, the researcher was able to arrive at an association graph of investment of self, which demonstrates all the concepts that were discussed during the course of the interviews in relation to this concept. The association graph is presented below.

Figure 4.3: Association graph - investment of self



As can be seen from the association graph presented above, a large number of concepts were identified by means of the interviews as being related to investment of self. Although there were a large number of concepts, only the most frequently occurring concepts were included in the analysis. As discussed and applied with the previous two concepts (*control* and *knowledge*), the researcher looked at the importance that respondents attached to the various concepts. Again, this was done by looking at the frequency with which the respondents referred to various concepts. These frequently occurring concepts are presented below together with sections of the original text in order to illustrate the meaning that respondents ascribed to them.

Table 4.6: Concepts and original text pertaining to investment of self

Concept	Illustration
Challenges	"...sit here until two in the morning to deal with challenges..."; "...you can draw off more experienced people's energy levels when you encounter difficulties..."; "...when there are challenges you invest a lot of energy and you need to use it quickly and think on your feet..."; "...you need to be able to sit back and look at the bigger picture as well when a crisis occurs..."; "...when you encounter a problem, you always jump in there and help the guys..."; "...it is a challenging environment and you need a variety of skills and ways of applying yourself in such an environment..."; "...I see delegating as a particular challenge, if I don't delegate, I invest more of myself..."; "...you need a lot of physical energy, when there is a problem in the plant you need to go and help..."; "...one cannot just sit back and expect problems to solve themselves..."; "...when there are problems, you must make yourself available..."
Communication	"...you need to also allow other people to make suggestions and really listen to those..."; "...intellectually you invest a lot of yourself, especially when you have to really listen to others..."; "...communication with a mentor is essential if you want to preserve yourself..."; "...having regular discussions with your team is important, spending quality time with them..."; "...able to talk to them and if they are inspired I know that what I invested will pay off in the end..."
Energy	"...I don't think I am applying as much energy as I would love to..."; "...one needs to continually increase your energy levels and also how much you spend..."; "...sometimes you need artificial energy to fulfil this role..."; "...your attitude determines your energy..."; "...your emotions and energy levels is [sic] largely determined by how well you look after yourself..."; "...you need to prepare yourself mentally in terms of the energy you spend here..."; "...you

	can energise yourself...”; “...every year you need more and more energy because everything is geared towards efficiency...”; “...you have to think about a lot of things at the same time, tasks you have to perform simultaneously, so you need a lot of energy...”; “...you draw energy from how happy you are in your role...”
Middle manager	“...for a middle manager, physical energy is not a great requirement, but you invest quite a lot intellectually...”; “...as a middle manager one sometimes feels that you are not contributing much, but that is usually due to the fact that others’ suggestions might have been better...”; “...visibility is important, as a middle manager you cannot expect the team to work outside and you sit in your air-conditioned office...”; “...as a middle manager one needs to be flexible as well, people are not machines...”; “...one needs a balance when you are at the middle management level, you cannot invest all of yourself in work only...”; “...the ideal middle manager will invest intellectually mostly...”
Time	“...you may go home at four or twelve at night, and the whole time you are cognitively busy...”; “...you are constantly busy with work, even when you are home or even when you are on leave...”; “...you need to achieve a lot in a short period of time...”; “...currently I invest most of my time in my work...”; “...I spend a lot of personal time at work...”; “...the amount of time you spend on work issues shows just how committed you are...”; “...one needs to purposefully take time off sometimes otherwise you are bogged down with work permanently...”; “...spending time on the issues that count...”; “...one also invests a lot of time in colleagues...”; “...you must make lots of time for communicating...”; “...using the time you have to its full potential...”; “...need a lot of energy for performing a lot of things in very little time...”
Work-life balance	“...if you don’t have a family, you can make those sacrifices and invest more time and effort in work...”; “...one of my objectives is to achieve a work-life balance, since I invest most of myself in

	work...”; “...one cannot just focus on work, which is the case mostly for most of us...”; “...to have a better balance you sometimes have to leave your laptop at work, otherwise you’ll just work the entire time...”; “...ideally you have to find a balance between what you invest at work and what you invest elsewhere...”; “...for you to be able to give it your all, you need to have a work-life balance...”

In order to further refine, and ultimately describe, the perceptions that middle managers in the petrochemical industry have of the constituents of psychological ownership, the concepts as extracted from the GABEK analysis were divided according to the frequency with which they occurred during the interviews. Table 4.7 also summarises the most frequently occurring concepts in two categories: key concepts and supplementary concepts. In Table 4.7, the key and supplementary concepts are presented together with short descriptions of the context in which the concepts were used or the specific properties of the concepts under discussion.

Table 4.7: Investment of self - key and supplementary concepts

KEY CONCEPTS	SUPPLEMENTARY CONCEPTS
Time ▪ Concentrate for extended periods ▪ At home/leave must still invest ▪ Personal time invested (after hours) ▪ Time spent demonstrates commitment ▪ Purposefully disengage ▪ Invest in people in terms of time & communication ▪ Utilising time ▪ Many things in little time **Challenges** ▪ Requires long hours ▪ Surrounding yourself with competent people ▪ Invest a lot more during such times ▪ Bigger picture in mind throughout ▪ Assist others ▪ Variety of skills ▪ Applying yourself ▪ Being able to delegate frees up time for yourself ▪ Physical energy to deal with challenges and help	**Work-life balance** ▪ Can invest more if you don’t have a family ▪ As a target, no balance – most of self invested at work ▪ To give a good effort you need to balance how + where you invest yourself

▪ Actively participate ▪ Avail yourself **Middle manager** ▪ Intellectual investment ▪ Contribute ▪ Must be visible to your people ▪ Flexibility NB ▪ Finding a balance in terms of how much of yourself you invest **Energy** ▪ Monitor how much you spend/invest ▪ Need a lot to fulfil your role ▪ Attitude vital in terms of energy levels ▪ Must look after yourself ▪ Mental preparation ▪ Energise yourself ▪ Doing a few things simultaneously requires a lot of energy ▪ Energised by how happy you are in your role **Communication** ▪ Consider others' input ▪ Listening attentively requires that you invest a lot of yourself ▪ Spending quality time with team ▪ Regular discussions ▪ Invest time into listening and guiding people	

The comprehensive understanding formed from the respondents' experiences and view is discussed below. The same principles as for control and knowledge were applied.

KEY

Time

The most important thing that the middle managers invest of themselves is their time. According to these managers, the amount of time they spend on work-related issues, demonstrates their commitment. They invest their personal time by taking their laptops home and working in the evenings and even when they are on leave. They have to utilise the time available to them to their best and also accomplish many things in as little time as possible, while concentrating in various things simultaneously for an extended period of time. They invest their time not only on their day-to-day functions, but also in the people that they lead. The managers also agreed that they have to purposefully disengage themselves sometimes.

Challenges

As mentioned in the section regarding knowledge, the middle managers have to deal with challenges on a constant basis. This is not only due to the nature of their work, but also due to the high-risk environment in which they operate. In this regard, the managers mentioned that their role requires that they invest a lot of their physical energy by assisting other people; applying themselves and also utilising a variety of skills. They have to always be available to others and actively participate in the daily activities of their subordinates, especially in crisis situations, for which they sometimes get called out to work in the middle of the night. Their role requires that they invest long hours at work, particularly when there is a challenge to deal with, which occurs often. The managers agreed that being able to delegate frees up a lot of time for them to focus on pressing matters. This is achieved by surrounding themselves with competent people and always keeping the bigger picture in mind.

Middle manager

To function in the role of middle managers, it is important for the managers to be flexible and find a balance in terms of how much of themselves they invest at work. They invest a vast amount of themselves intellectually, in addition to being required to be visible to their people.

Energy

In terms of physical energy and intellectual capital that have to be invested in order for the middle managers to perform their functions, they all agree that they need to invest a vast amount. They sometimes have to do a few things simultaneously and have to go through mental preparation for most of what they do (this may be due to the environment and the nature of their work). The managers agreed that they have to purposefully monitor how much energy they invest and also find a balance in terms of not only focusing and investing in their work and subordinates, but also in themselves. Most of the middle managers mentioned that they are energised by how fulfilled and happy they are in their roles and that their attitudes are also vital in determining how much energy they have at their disposal.

Communication

The managers all stated that they invest a lot of themselves in terms of communication. They not only have to spend quality time with their team, but also engage in regular discussions and consider others' input on a constant basis. For the managers, really listening attentively to others requires that they invest a lot of themselves.

SUPPLEMENTARY

Work-life balance

All of the managers expressed the need to achieve a balance in terms of the amount of time and energy that they invest in addition to how they do that and where they do that. The managers that do not have familial obligations can invest more of themselves than their counterparts who do have that obligation. At the time that the research was done, the managers felt that they were investing most of themselves (their time, effort, energy and intellectual capital) at work and that they did not have a balance between work and life. They expressed a need to purposefully achieve a work-life balance as a target for themselves.

4.4 FINDINGS

As was explained in the literature review, most of the studies noted that there are three ways (routes) in which psychological ownership can be identified, namely:

- the control and influence over as well as the use of targets or objects due to these objects being seen as part of the self (Belton, 2008);
- thorough knowledge of the targets or objects that are owned by an individual (Pierce *et al.,* 2001); and
- investment of ideas, energies and time into targets or objects as a means of developing a sense of identity in the objects or targets (Pierce *et al.,* 2001).

The study and subsequent data analysis were structured around these themes, along with the research questions, which were based on these themes that. In addition, *psychological*

ownership was also described as a "cognitive-affective" state (Pierce *et al.,* 2003), which can be said to be cognitive in the sense that the individual can become aware of it in a rational and subjective way. Psychological ownership is also affective in the sense that it produces positive feelings in connection to owned objects or targets.

In order to discuss the general structure of the participants' experience of the routes or components of psychological ownership, as well as attempt to deal with the last of the research questions posed, the researcher decided to break the findings down into the following general themes:

- experience of the route on a cognitive level;
- experience of the route on an emotional level;
- experience of the route on an internal or personal level;
- experience of the route on an external level.

In terms of the general themes along which the discussion is based, the *cognitive level* refers to the respondents' experiences which referred to the individual's thoughts, beliefs and awareness, as proposed by Pierce *et al.* (2003) surrounding the route. The *emotional level* refers to any emotional or affective connotation expressed by the respondents. The *internal or personal level* constitutes experiences originating from within the individual and therefore, the *external level* refers to experiences that originated from the external environment as experienced by the respondents.

4.4.1 Control

Experience of control on a cognitive level

The thoughts, beliefs and awareness of the sample in relation to control included the notion that control is essential for the fulfilment of their role, management principles, areas of responsibilities, goals, targets and objectives, dealing with challenges as well as budget decisions. In addition, the managers believed that they are directly accountable for their sections of the plant and operation in addition to the people that they lead and manage as well as for these people's safety and development. Their awareness of control in their

areas of responsibilities included control over how they perform their functions. Similarly, the managers were mostly also aware of the fact that they do not have as much control as they would ideally like to have and that most of the control in their specific areas should lie with them and not their bosses. Finally, the nature of the environment (level of risk involved) determined the amount of control needed to effectively function in that environment.

Experience of control on an emotional level

The sample felt less positive about the prospects of colleagues and superiors stepping into their role, which diminishes control to a great extent for them. They also felt that the amount of control they exercise has diminished over time and that their superiors should yield more control to them. The managers expressed a sense of urgency (and in some instances anxiety) over the accountability they have for their subordinates and their safety. Their feelings surrounding their goals, targets and objectives were that their level of control should be appropriately matched with them. A distinct dissatisfaction was expressed for being micromanaged by their superiors, while quite distinctly a sense of satisfaction was expressed over the successful aversion of a crisis or handling of a challenging situation by way of exercising appropriate control over the situation.

Experience of control on an internal or personal level

Control allows the managers to exercise their initiative in execution of their roles, but also over how they apply this control and which systems and procedures they put in place in order to streamline their function. It allows them to see their unique contributions to the success of their organisation. Personally, the managers believed it to be important for their personal levels of control (in terms of their roles and areas) to be consistent with the responsibilities they have in their areas. The managers also agreed that they should set their own goals, targets and objectives thereby exercising the control at their disposal and also influencing how the targets will be achieved. It was expressed that the most important aspect in their roles for which they must carefully exercise control, due to differing preferences for outcomes, is their relationships with other people – over which they have control personally. A further aspect that seems to originate in the person is the notion of balancing the amount of control available to them with the amount that they exercise,

which allows them to deal successfully with challenges and people issues. Final aspects were the fact that the managers are personally accountable, their attitudes surrounding this accountability seemed to dictate how they deal with various situations.

Experience of control on an external level

The amount of control available to the managers seems to be dictated by factors that are not directly situated in their personal areas of influence. It originated from their superiors and also dictated where they can possibly exercise their control and where not. In this respect, they felt that they would ideally prefer to be afforded more control and scope in terms of how these are applied to their roles and the execution of their functions. Similarly, they felt that since most of the control originated from external factors, it should be appropriately matched to the areas they have to oversee as well as to their responsibilities. The sample stated that they are not able to exercise control over the goals, targets and objectives, which are set by their superiors for them to achieve. This was also applicable to the budget that they have to oversee and manage. It also came to light that the managers felt that the amount of control they needed is largely dependent on the maturity of their subordinates, which constitutes a further external factor for them.

From an external perspective (external to the managers), it came to light that the managers' control diminishes when someone steps into their role. In addition, most of the control with which they have to perform their functions either lies with or comes from their superiors. The same principle applies to the things that they are accountable for, in some respects they have an internal movement towards accountability, but mostly they are informed where their accountability lies. Finally, they have control for the environment as well as for the development of the people.

4.4.2 Knowledge

Experience of knowledge on a cognitive level

The sample expressed the belief that they need a vast amount of knowledge (at least 70% of all systems and procedures) of the business as well as the critical equipment within their area. In this regard, they stated that they not only need knowledge, but in-depth understanding of their roles, the process of management, working with people, safety regulations, processes and procedures to be followed as well as the various business units. In terms of awareness, the managers articulated an understanding of the concept of time and how long it takes to get work done and gain knowledge. They also expressed the belief that experience, in terms of tenure at the company, forms a vital part of the knowledge they accumulate. The respondents thought that the way in which they gain knowledge was by means of learning, be it formal (classroom-based) or more experiential in nature. Knowledge of the technical aspects is not as important as other forms of knowledge, since they could always find technical information easily.

Experience of knowledge on an emotional level

A distinct dichotomy was identified in terms of the sample's feelings surrounding essential knowledge required. Some felt that formal education is vital, while others felt that experience and tenure are more important. It was clearly identified that the individuals that expressed dissatisfaction with formal education as a requirement, were also older, and did not possess formal qualifications, but had to work their way upwards over years. The managers also negatively evaluated lack of understanding of the role of middle manager – for them, in order to perform the function, all the finer nuances of the position and environment must be understood. The sample expressed concern over knowledge of their roles as well as managing and leading people as middle managers, since to their way of thinking, lack of knowledge could have various negative consequences. Some of the managers expressed pride in their business units and how they are performing as a result of the knowledge they have gained through hard and consistent effort.

The sample also stated that they are fulfilled by their interactions with people and that they thoroughly enjoy management, although only after they had to learn how to lead and manage. The feeling surrounding learning that was expressed was distinctly positive, since most of the managers felt that they are committed to lifelong learning as well as being open to learning every day.

Experience of knowledge on an internal or personal level

In order for these managers to fulfil their functions, they must accumulate and motivate themselves to acquire knowledge. This knowledge thus obtained, they then have to transform into a unique and personal understanding of what is required and what happens in their areas as well as with their people (how these factors interplay and affect each other). This seems to be something that is wholly dependent on the managers' unique backgrounds, levels of technical knowledge and experience, cognitive abilities and personal preferences and in the end, facilitates decision-making. Success factors seem to also originate from within the managers themselves, and are largely dependent on their own learning, knowledge accumulation and understanding of their roles, the structures in which they operate as well as the relationships they maintain throughout their functions. The managers also felt that whether they are able to get along with people and foster productive working relationships are also dependent on personal factors, since not all people have a preference for or an affinity to work with people. A final factor that originates from within the individual is the accumulation of experience, as it can be directly linked to the amount of effort they put in to learn and acquire knowledge.

Experience of knowledge on an external level

The factors that seemed to originate from the external environment included the amount of resources available with which to gain knowledge (formal training and education), managers' own cognitive abilities, the complexity of the environment in which they function, assigned roles and responsibilities, as well as the size of the area and amount of people they have to manage. A further factor that came strongly to the fore is the fact that time is not always available. It also came out that each manager's personal circumstances have a great influence on their accumulation of knowledge as well as the application thereof. Background and circumstances affect things like having had the opportunity to further their education, what importance was placed on human relationships and fostering a better understanding thereof.

In addition, having knowledge is largely dependent on the availability and ease of access to the right information as well as their unique technical skills and knowledge – which, in

turn, is dependent on the opportunities available to them. Finally, the managers agreed that they have to function in set systems and procedures, which to a large extent dictate availability of and access to information.

4.4.3 Investment of self

Experience of investment of self on a cognitive level

The most pertinent thoughts regarding investment of self that came to the fore are the fact that the sample viewed the investment of their time as the most vital contribution they made, along with dealing with challenging situations, and expending their energy (intellectual capital, physical energy) in their roles, areas and subordinates. The managers expressed the beliefs that they invest a lot in terms of communication, fulfilling their functions and also crisis situations due to the fact that they function in a high-risk environment. Other thoughts regarding investment of self included the notion of delegation and how it alleviates pressure for the managers so that they can invest of themselves in other, more pertinent, areas of responsibility. In addition, it was also indicated that the amount of time that the managers invest in their work demonstrates their level of commitment to investing in the company.

Experience of investment of self on an emotional level

The sample's feelings surrounding investment of self mostly centred on the notion of time. They either felt that they did not have enough time, or expressed the need to invest more or less time. The sample expressed a concern for achieving a work-life balance, since many of them spend most of their private or family time on work. The sample clearly articulated that investment in terms of challenging situation took its toll on them; they also felt invigorated when they have successfully dealt with a crisis situation, and they felt a sense of pride as it were. The sample felt that their personal attitudes contribute greatly in terms of how much energy they felt they had available, the more positive their attitudes, the more energy they seemingly had. Finally, the managers stated that they are able to invest more of themselves depending on how happy and fulfilled they felt in their roles.

Experience of investment of self on an internal or personal level

The most pertinent personal factor that came to the fore is the fact that the managers expressed that they have a personal choice to exercise with regard to how much of their time, energy and ideas they invest into their work and roles. In this respect, the managers felt that they have to apply themselves and invest of their own physical energy and intellectual capital into work over and above being visible to their people. When they were faced with challenging situations, an almost spontaneous movement was seen towards investing more. The manager felt that they coped with this investment 'choices' they made by constantly reminding themselves of the bigger picture. It also came to light that they are cognisant of the fact that they need to personally balance how and also into which areas or objects they invest themselves – they need to overtly make a decision to also invest in themselves, to achieve a work-life balance. In this respect, their personal attitudes in addition to how happy and fulfilled they are in their roles seem to determine how much of themselves they possibly could invest (e.g. the happier they were, the more they were able to invest).

Experience of investment of self on an external level

From the external environment, investment of self by and large is dictated by working hours and employment contracts. The managers know upfront how much time they have to invest and also the possibility of investing more due to call-outs and challenging situations, which is to a large extent dependent on the nature of the environment in which they function as well as the actions and influence of various role-players over which the managers have no influence. In some instances, the environment as well as the nature of their work requires that they invest vast amounts of physical energy in the performance of their functions. Additional external factors that impact on the managers' experience of investment of self, are their personal home circumstances. Those managers that have familial obligations have to find a unique balance in terms of investment so that they can also meaningfully contribute to their families and not invest all of themselves in their work only. This comes as a challenge to most of the managers, since the nature of the environment in which they work often dictates that they spend a lot of additional time at work.

4.5 CONCLUSION

This chapter discussed the findings as they relate to the research questions of the study as well as the nature of the data analysis. The next chapter will discuss the conclusions and recommendations relating to the results, as presented above and also present recommendations for future research endeavours related to this topic.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5

5.1 INTRODUCTION

The main purpose of this study was to provide an in-depth description of the experience of ownership in the workplace, especially the routes to psychological ownership, which consist of control, knowledge and investment of self. This aim was established due to the relative dearth of information that exists on the routes to psychological ownership.

The data upon which the results that follow below was based, was gathered by means of open-ended, semi-structured interviews conducted with middle managers in the petrochemical industry. Through a coding process, aided by the GABEK, the researcher identified a few categories that were central to the themes of control, knowledge and investment of self. A summary of the finding are presented below.

5.2 CONCLUSIONS

The methodology applied in this research was based on phenomenology, which meant that keeping in line with the aims of the research, an attempt was to be made to describe a concept or phenomenon by means of gathering information on the experiences that a particular group has. Through an analysis by way of GABEK, the information obtained from the interviews was coded and ordered to arrive at association graphs, which highlighted the most predominant categories that were associated with the three concepts. The association graphs constructed ensured that the themes were properly categorised according to the research questions.

In order to achieve the objective of the study, the following research questions were identified in Chapter 1 and the researcher linked these questions to the results that were obtained.

i. What are individuals' experiences and perceptions of control over their work?

The result of the study shows that there are numerous perceptions and experiences with regard to control in the managers' work. The most predominant perceptions that came to the fore were in connection with the role of a middle manager, where control should ultimately lie, how control is linked to the responsibility of the manager, what link control has to the goals, targets and objectives that have to be achieved, control over budget, control in relation to management principles as well as how control affects and is affected by the challenges faced by the middle manager. What also came to light, although to a lesser degree, was the link between control and accountability, development and the amount of experience that a middle manager has.

ii. What are individuals' experiences and perceptions regarding knowledge about and as a result of their work?

The perceptions the middle managers had of knowledge were mostly in relation to the function a middle manager performs and what kind of knowledge they require as a result. In addition, the perceptions included references to understanding as distinct from mere knowledge, the function and role of a middle manager, the knowledge embedded in the various business units, the time it takes to gain knowledge and ultimately experience as a result of knowledge thus gained, as well as the knowledge in relation to dealing with people. The middle managers obtained these experiences and perceptions through a process of learning, and acquiring of technical knowledge as a foundation, as well as a thorough understanding of the processes and procedures in the organisation.

iii. What are individuals' experiences and perceptions regarding investment of self in the context of their work?

With regard to investment of self, the most pertinent perceptions that came to the fore were the perception of time and how much of it they invest, challenges that have to be dealt with continually – which also require a great deal of investment, the function of the

middle manager and what it requires in terms of such an investment, the levels of energy that are required for sustained investment as well as communication as a vital link between the manager and his or her subordinates. The managers also perceived the notion of achieving a work-life balance as important in terms of investment of self at work.

5.3 LIMITATIONS

After completion of the study, the researcher identified a few limitations with regards to the research. They are presented below.

This study was conducted in one company in the petrochemical industry, and as a consequence, the results generated could therefore not be generalised to other companies in the industry or South Africa. The respondents were interviewed only once and due to the fact that a follow-up interview could not be conducted, the responses generated could to a certain extent have been influenced by external factors not taken into account by the scope of this study or applicable to this study. In addition, due to the nature of the topic, some of the responses from the managers could have been biased in the sense that they might have feared negative consequences as a result of their responses. This was dealt with in the informed consent, but could nonetheless have had an influence on the findings.

The interview schedule that was developed was too general and open-ended in nature, resulting in a vast amount of information and therefore a very broad and general description of the themes under investigation, since the researcher did not want to lead the respondents by way of questioning. Should research into the perceptions surrounding a phenomenon be conducted, the researcher proposes that the interview schedule (i.e. questions asked) be very specific in terms of the aims of the research.

5.4 RECOMMENDATIONS

5.4.1 Validation of the routes to psychological ownership

What mostly came to the fore throughout the research was the need to validate and possibly standardise the three routes to psychological ownership. When a researcher knows exactly in which parameters a concept fall, the research could yield much more specific results. Throughout the literature, *psychological ownership* has been defined in terms of its roots, effects and links to the organisation (Avey, *et al*., 2009; Belton, 2008; Pierce, *et al*, 1991; Pierce, *et al,* 2001; Pierce, *et al*, 2003; Pierce *et al*, 2004; Pierce, *et al*, 2009; Van Dyne & Pierce, 2004). In addition, most of these studies also describe the routes to psychological ownership, but only in a superficial way. The literature that is quoted with reference to these concepts is mostly to describe it in terms of its application to the studies that mention them, and not in direct relation to the theory of psychological ownership.

5.4.2 Measurement of psychological ownership

A number of the respondents asked whether they could fill out a questionnaire with regard to the research. It raised the issue of whether there exists a known measuring instrument with regard to psychological ownership. The answer is quite simple. At the time of writing this report there was no validated measure with which to reliably measure psychological ownership. A “proposed measure” has been applied by Avey, *et al.* (2009) which tapped four dimensions, namely self-efficacy (which is closely linked to control), accountability and sense of belongingness in addition to self-identity. These dimensions have not as yet been elaborated upon or validated, which could prove valuable in terms of the field of industrial psychology.

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