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*The highest
reward for your work
is not what you get for it,
but what you become by it.*

- **John C Maxwell**

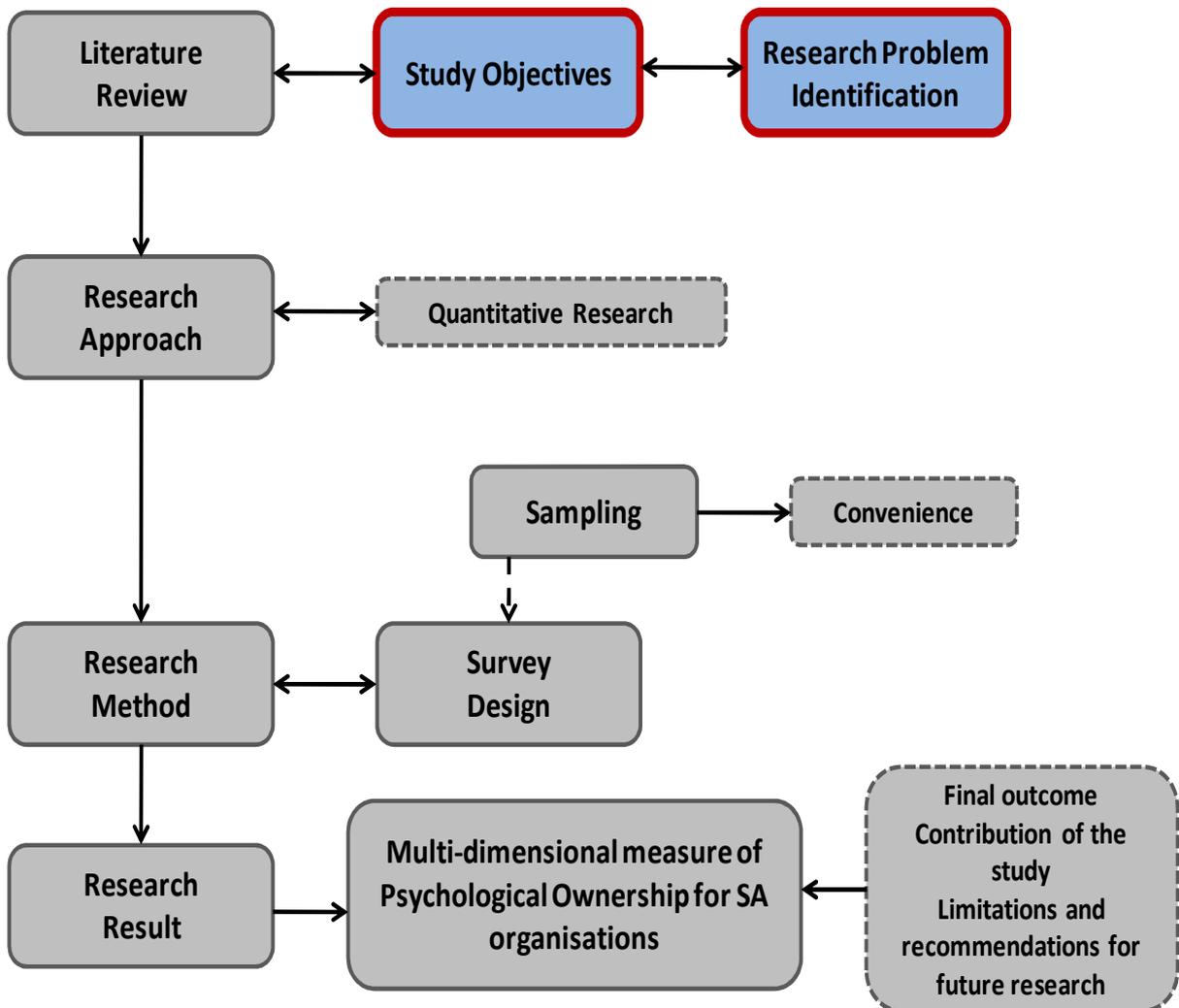
CHAPTER 1

INTRODUCTION

Research is formalized curiosity. It is poking and prying with a purpose.

- **Zora Neale Hurston**

In this chapter...



1.1 BACKGROUND

Organisations today are striving to become world-class organisations that compete globally (El Toukhy, 1998). In order to achieve this, organisations not only must recruit the top talent, but they need employees who are psychologically connected to their work and the organisation.

- **The retention of talent**

According to Hay (2002), in the late 1980s and early 1990s holding onto jobs was a priority as employees were laid off in droves. This changed from 1998 onwards, as employee turnover then increased by 25%. In 2002 the Hay Group surveyed employees working in 330 companies in 50 countries and found that one-third of employees indicated that they intended to resign from their jobs within the following two years.

A report compiled by the Hay Group (2002) notes that employees are increasingly adopting the philosophy that their job security lies in employability, and not in employment. Birt, Wallis and Winternitz (2004) support this statement by Hay and argue that these organisational actions have an unexpected and largely unanticipated outcome, namely a definite shift in power in the employment relationship from employers to employees.

The new power base in the labour market is a group of employees referred to as “talent” (e.g., Paton, 2002) or “knowledge workers” (Stewart, 1997). These employees have sought-after knowledge and skills and as Stewart puts it (1997, p. 68), they carry the “[tools of their trade] between [their] ears”. Retaining this knowledge becomes a matter of retaining these employees, since their leaving means a loss to the organisation in term of its intellectual capital or intangible assets (Birt et al., 2004). Globally, many of the world’s most admired companies acknowledge that they will lose half of their senior executives over the next five years. According to research conducted by Human Capital

at Deloitte among a wide range of companies across all industry sectors in South Africa, the average executive turnover for the period 2007-2008 increased to 13.5% compared with 10.5% in the same period the previous year. This statistic extrapolates to South Africa losing up to 50% of its executives every four to five years (“Rich stay comfortably rich”, 2008).

- **The retention dilemma**

“The retention dilemma” – how to keep your best, most talented staff –creates a major challenge for organisations. Employee turnover, especially in difficult economic times, can drain the lifeblood of an organisation (Hay, 2002). Although some employees might try to sit out a downturn, the best are always employable somewhere else and therefore a so-called “war for talent” is created. Kotzé and Roodt (2005) note that demand for and difficulty in retention of talent are therefore not challenges unique to South African employers. According to them, in South Africa, these challenges are compounded by three additional factors. Firstly, the emigration of skilled people has taken and still is taking place at an astounding rate; for example, according to Grant Thornton’s 2008 International Business Report (IBR) some 32% of respondents who took part in a survey conducted amongst 300 privately held businesses that employ between 100 and 400 staff confirmed that they had seriously considered leaving South Africa permanently (“Third of workers mull emigration”, 2008) Secondly, there is a relative scarcity of specialist and managerial employees due to an over-supply of unskilled labour and an under-supply of skilled labour. Thirdly, the national drive to address employment equity has fuelled the war for talent among people from designated groups.

Consequently, organisations still need to consider how to keep their best people – particularly given the huge cost involved when valuable people depart. Employees leaving the organisation often take with them valuable knowledge and expertise gained through experience. Another turnover impact for the organisation is the fact that long-tenured employees have established close relationships with clients. These relationships are the foundation for a reinforcing cycle of positive interactions between

employees and clients. Staff retention thus has a positive effect on good client relations and eventually profitability (Roland, Rust, Stewart & Pielack, 1996).

In addition to these indirect costs, organisations also face many costs related directly to turnover, including exit interview time and administrative requirements, payment of unused vacation leave, the cost of temporary workers or overtime for co-workers asked to fill in, and training costs. In the retail industry, for example, Shoprite, the largest training provider in South Africa's wholesale and retail sector, conducted no less than 62 208 training interventions during the 2006/2007 period. The upper-end fashion retailer, Truworths, increased its training budget by 44% to R13 million in the 2007 financial year to ensure succession in shortage areas such as store managers, buyers and planners. Some 859 employees were in development programmes at that stage, aimed at preparing them for succession into managerial and supervisory positions. Delisted fashion retail giant Edgars Consolidated Stores (Edcon) has invested millions in staff training and provided 1050 learnerships at a cost of R23.4 million. According to Edcon's Chief Executive for retail operations and former human resources director, "In seven to ten years those people will be the future executives of the company. It's an investment we can't afford not to make" (Monteiro, 2007).

Replacement costs include advertising, head-hunter and selection fees. Training costs, both formal and informal, add to the overall burden (Mitchell, Holtom & Lee, 2001). Losing good employees is also costly in terms of the impact it has on the organisation's morale. Those employees that remain can often feel demotivated or disheartened, resulting in a drop in productivity and job satisfaction. If staff members witness the new job opportunities being snapped up by their colleagues, they could also follow suit (Hay, 2002).

- **The war for talent**

Kotzé and Roodt (2005), suggest that employers are left with two options in order to succeed in the war of talent: The first option is to become and remain an "employer of

choice”, which will attract and retain people with the required profile (Cappelli, 2000); and the second option is to develop, retain and efficiently utilise the employer’s existing talent pool. This will also be the option preferred by the current study. Rossi (2000) also suggests that the best method of filling important vacancies in organisations is to ensure that current qualified employees remain a part of the organisation. Current employees are, after all, a known factor. They are familiar with the internal workings of the organisation. These employees have established the formal and informal networks that are necessary to help them remain productive within the organisation’s context and they have been trained in the use of many of the methods and systems used by the organisation.

In the effort to win this war for talent, organisations have shifted their attention to determining the variables that impact favourably on the retention of talent. Gupta-Sunderji (2004) suggests that to understand the factors underlying employee retention, it is important to go back to the work of Frederick Herzberg in 1968. Herzberg identified intrinsic factors in employee motivation such as achievement, recognition for achievement, the work itself, growth, responsibility, and advancement; and extrinsic factors such as supervision, working conditions, interpersonal relationships, salary, status, and security.

- **Intrinsic and extrinsic rewards**

Previous research (Bernthal & Wellins, 2001; Cappelli, 2000) found a variety of intrinsic and extrinsic factors, with studies placing differential importance on these. A study done by Towers Perrin (as cited in *HR Focus*, 2003), for example, lays emphasis on extrinsic rewards, such as performance-based pay. Similarly, Stewart (1997) focused retention suggestions on extrinsic factors, such as incentive pay and gain-sharing bonuses, and employee stock ownership.

In contrast, Kaye and Jordan-Evans (2002) report that, despite the significance of extrinsic variables such as compensation in retaining talent, intrinsic factors such as

having good supervisors, significant and challenging work, and development opportunities were regarded as more important. According to a study based on 745 employee responses to a retention survey done by Bernthal & Wellins (2001), the following retention factors were rated as very important by employees: quality of relationship with the supervisor or manager; ability to balance work and home life; level of co-operation with co-workers; clear understanding of work objectives; level of challenging work and autonomy – the freedom to direct work. Jamrog (2004, p. 11) states, “The best people are not motivated by and do not stay for the money alone. They stay because they are engaged and challenged by work that makes them better at what they do. They want to work for more than just the pay check.”

Bruce Whitfield, in an article entitled “Hunting for black executives” (2007), observes that many South African companies struggle to retain upwardly mobile black talent because companies, under the pressure to transform, are prepared to pay large salaries to attract the right skills. However, although Human Resource directors acknowledge the importance of competitive salaries when it comes to attracting staff, they realise that “it’s not all about the money”. Pay is a satisfier, but it is the organisation and the work environment that engages and retain.

Meyer and Allen (1997) and Michand (2001) observe that organisations focusing on intrinsically important variables are considered to benefit by provoking greater affective commitment amongst talent. This is illustrated in behaviours and attitudes such as a strong belief in and acceptance of the values and goals of the organisation, a willingness to apply effort for the benefit of the organisation, and a desire to remain with the organisation. Birt et al. (2004) reported that organisations with high levels of employee commitment outperformed those with low levels of commitment by 200%. Rankin (2000) proposes that focusing on intrinsic variables with the intention of increasing commitment amongst talent seems to make good business sense.

A study focusing on a group of 115 employees at a South African financial services institution was conducted by Birt et al. (2004). They found that both intrinsic and

extrinsic variables were rated as crucial or fairly important to employees. This finding is in accordance with those of non-South African studies, which have highlighted both intrinsic and extrinsic variables (Cappelli, 2000). According to Birt et al., the five most important variables that emerged from their study were those of “challenging and meaningful work”, “advancement opportunities”, “high manager integrity and quality”, “empowerment and responsibility”, and “new opportunities/challenges”. All these variables are intrinsic in nature. This focus on intrinsic variables indicates that the constant provision of these variables by the organisation is also considered crucial to decisions on whether to leave. Although the organisation may not be able to completely control the employees’ decisions on whether to leave by manipulating these variables, focusing on them may still have a considerable influence. These variables have been found to improve an employee’s level of affective commitment, which has been postulated to increase retention, specifically amongst high-performing employees (Meyer & Allen, 1997).

These results will also support an organisational focus on satisfaction: Meyer and Allen (1997) have declared that personal fulfilment is the main process whereby affective commitment develops; hence, if the organisation conveys a supportive and just environment where individual contribution is valued, work experiences will be especially fulfilling.

Rankin (2000) recommends that retention strategies should treat employees as if they were clients. The fact that intrinsic variables proved most important in the study conducted by Birt et al. (2004) confirms this statement. According to Rankin, treating employees as if they were clients will increase the success of such strategies, as they express the organisation’s interest in the well-being and development of its members, which can be achieved through recognising and rewarding personal goals, developing employees’ strengths and providing them with appropriate opportunities and the discretion to solve problems and meet challenges.

From the above it is clear that something is missing in the retention strategy of organisations that has not yet been addressed and if so, what is this missing element and how does it reflect in the South African organisations?

1.2 PROBLEM STATEMENT

In their study of HR practices and other organisational characteristics that impact organisational commitment, Fiorito, Bozeman, Young and Meurs (2007) reported mixed results. According to them, these mixed findings may result from so-called “omitted variables”. They suggest thus that psychological ownership may be one of those variables that might predict organisational commitment. Is it possible that “psychological ownership” could be the missing element that can enhance commitment and therefore play a major role in the retention of talent?

- **Proof of previous studies**

Previous research publications suggest that the psychology of possession can play a major role in the relationship between individual employees and their organisations. In the development of a model of employee ownership, Pierce, Rubenfeld and Morgan (1991) proposed that employee ownership leads to social-psychological and behavioural outcomes. However, in her study of employee attitudes of 37 ESOP (Employee Stock Ownership Plan) companies, Klein (1987) found no significant relationship between the percentage of stock owned by the ESOP employee and job satisfaction and commitment. Pendleton, Wilson, and Wright (1998) found that most shareholders do not appear to have a strong sense of ownership and a belief that nothing has changed in the organisation as a result of employee ownership. Dunn, Richardson and Dewe (1991), in a longitudinal study found little difference in the attitudes of owners and non-owners. In one of his two case-study firms, Kruse (1984) found evidence of lower levels of commitment over time. Long (1982) found a significant decrease in employee satisfaction following the conversion to employee ownership.

- **What do these studies imply?**

These findings are extremely suggestive since, if ownership remains unchanged between the two points of investigation, some mediating and/ or extraneous variable is operating other than ownership *per se* that must be driving attitudinal change. Pierce et al. (1991) identify an intervening variable, “psychological ownership” that could play a role between the presence of share ownership and employee commitment.

In later work, Pierce, Kostova & Dirks (2001, 2003), drawing on work from sociology, philosophy, human development and psychology formally introduced a theory of psychological ownership in organisations that defined psychological ownership as separate and distinct from legal/equity ownership of the organisation. According to Kubzansky and Druskat (as cited in Pierce et al., 2001), the psychological sense of ownership may be an integral part of the individual employee’s relationship with the organisation. Ownership, as an attitudinal state, becomes attached to issues that organisational members feel worthy of attentional investment (Pratt & Dutton, 2000). Therefore, Pierce et al. suggest that if ESOP employees feel a greater sense of ownership, commitment to the organisation is likely to increase. If, on the other hand, they do not experience psychological ownership, the level of organisational commitment is likely to remain unchanged, whatever the level of share ownership.

Brown (1989) suggests that the presence of psychological ownership among organisational members can have a positive effect on organisational effectiveness.

- **What needs to be done?**

It is thus important to have a closer look at this mediating and/ or extraneous variable, called psychological ownership and how it could be measured since it is associated with positive behavioural and social-psychological consequences. Up to now, only two measurements of psychological ownership were developed but they had several limitations.

- **Current measurements of psychological ownership**

Pierce, Van Dyne and Cummings (as cited in VandeWalle Van Dyne & Kostova, 1995) developed and validated a five-item instrument for the measurement of psychological ownership. In this instrument, psychological ownership was operationalised with a set of items measuring the attitude of feeling ownership of the company, such as “this is **my** company,” and “I sense that this company is **our** organisation” (VandeWalle et al., 1995, p. 215). Each item was measured by making use of a seven-point Likert scale. VandeWalle et al. found a Cronbach alpha of .89 for this measure in their sample consisting of 797 respondents. This survey was conducted utilising residents of university-affiliated housing cooperatives in a major upper-midwestern metropolitan area in the United States. A limitation of this study is that psychological ownership was measured by utilising only a five-item instrument. Since psychological ownership is a multi-dimensional construct (Avey et al., 2009) this five-item instrument seemingly lacks the ability to grasp the comprehensiveness that represents psychological ownership.

Building on the three recognised dimensions of psychological ownership: *self-efficacy*, *self-identity* and *having a place* (belonging) of Pierce et al. (2001), Avey and colleagues (2009) posited two additional concepts of psychological ownership, *territoriality* and *accountability*, and developed a five-dimensional measure of psychological ownership. Avey et al. also distinguish between two forms of psychological ownership: *promotion-orientated* and *prevention-orientated* psychological ownership. Promotion-orientated psychological ownership consists of four theory-driven components: self-efficacy, sense of belonging, self-identity with the target, and accountability. Territoriality was identified as a dimension of a preventative form of psychological ownership.

This measurement consisted of 16 items (three items for each of the four components for the promotion-orientated psychological ownership scales, and four items for the feelings of territoriality (prevention-orientated psychological ownership). Each item was measured by making use of a six-point rating scale. Internal reliabilities for the components ranged between .73 and .92. The primary sample for this study comprised

a heterogeneous sample of 316 working adults in the United States (US) from a wide cross-section of organisations.

According to Avey et al. (2009), a limitation of their study may be the comprehensiveness of the dimensions used to represent psychological ownership. They therefore suggest future theory-building and research that may demonstrate a link between psychological ownership and other related concepts.

Another limitation of the instrument developed by Avey et al. (2009) is that only three items each measured four of the five dimensions. Idaszak, Bottom and Drasgow (1988) proposed that an instrument should comprise at least four to six items per scale because this would increase the likelihood that a factor analysis would accurately reflect the true underlying structure of the item pool. According to them, sampling fluctuations seem to play an unacceptably prominent role in samples of several hundred individuals when only three items are used to assess each scale. Garson (2002) supports this by stating that four or more indicators per latent variable are needed. He further notes that alpha coefficients might be lower when there are fewer items in the scale or factor.

- **The South African challenge**

Different perceptions

Individuals as such face increasingly complex challenges in constructing and maintaining their identities. In a world where employees are prone to working longer hours, under inflexible arrangements, within several different organisations, and in multiple jobs or careers, it is more and more challenging for them to create and maintain a positive identity (Robberts & Dutton, 2009). A further challenge is for the individual to adapt to the multi-cultural organisation which has resulted from the implementation of affirmative action as a compensatory measure for previous deprivation in South Africa (Watkins, 1995). Multi-cultural work teams raise questions regarding similarities and differences between the meanings that different groups give to different constructs. For

example, in their study, Janse van Rensburg and Roodt (2005) found that Coloured/Indian/Asian employees are more positive in terms of their perceptions of employment equity, than African employees, and that White employees are the least positive in terms of their perceptions of employment equity. They further found that perceptions of employment equity and black economic empowerment have strong bearing on people's beliefs, values and needs and predicted organisation-related commitment. In another South African study, Urban (2006) found differences in the mean values between Indian, Black and White respondents with regard to their general self-efficacy. The levels of self-efficacy of Indians are at the highest level, followed by Blacks and then Whites at the lowest level. From this it is clear that different cultural groups have different perceptions with regard to different constructs. Therefore, it is important to investigate employees' perceptions of psychological ownership within the South African context

Psychometric testing

Legislation in South Africa severely controls the classification, possession, control and use of psychological tests and other instruments relating to work-related individual assessments (Mauer, 2000). Section 8 of the Employment Equity Act, Act 55 of 1998, stipulates that only scientifically validated tools may be used to test or assess individuals, and that these tools must be fairly applied to all individuals. The presence of unjustified unfairness or bias in any measurement tool prohibits its use. Stringent Employment Equity legislation prohibits unfair assessment, ranking, classification or profiling of any individual.

The above legislation creates opportunities for the development of psychological instruments that are appropriate for all cultural groups. It appears that the necessity for instruments that meet the requirements of Employment Equity legislation cannot be detached from the needs that evolve from the diverse South African social context. According to Claassen (1997), when psychologists construct psychological evaluation instruments in South Africa, they must always take into consideration the social and

cultural diversity present in the historical and contemporary contexts of the socio-economic and political environments particular to this country.

In South Africa, measuring instruments are in general adopted directly from overseas (Foxcroft, 1997). These imported instruments have largely been in English, and even the adaptations of these instruments still tend to ignore the fundamental cultural differences in South Africa. The same question asked in different cultural settings, for example, will yield different answers (Retief, 1992). Studies have been undertaken in South Africa to determine the construct validity of various imported instruments. Examples are Litwin and Stringer's Organisational Climate Questionnaire (Olckers, Buys & Zeeman, 2007); the Multi-dimensional Emotional Empathy Scale developed by Caruso and Mayer (Olckers, Buys & Grobler, 2010); the Socialisation questionnaire developed by Chao, O'Leary-Kelley, Wolf, Klein & Gardner (Madurai, Olckers & Buys, 2008); and the Revised Job Diagnostic survey of Hackman & Oldham (Buys, Olckers & Schaap, 2007). These studies have revealed that these instruments are not appropriate for use in the South African context.

From the above, it is clear that there is a need for the development of a multi-dimensional measure of psychological ownership for the diverse South African context.

1.3 STATEMENT OF PURPOSE

The purpose of this study is to develop a measurement instrument for psychological ownership in a South African context. Previous studies as shown above have not succeeded in compiling a comprehensive measure. There is always the risk of packing old wine in new bottles and this paper will show that psychological ownership is not a new title and neither an umbrella term whereby existing norms have been grouped.

1.4 RESEARCH OBJECTIVES

The primary objective of this study is as follows:

Development of a multi-dimensional measure of psychological ownership for South African organisations.

In order to achieve the primary objective, several secondary objectives need to be met.

The secondary objectives of this study are:

- To determine what is meant by the construct psychological ownership
- To understand why it is necessary to measure psychological ownership
- To identify the factors that influence and define psychological ownership
- To build on the five-dimensional theory-driven instrument of Avey et al. (2009) to suit the South African context
- To outline the research and steps that are necessary to develop an instrument that will be valid and reliable for South African organisations
- To establish the construct equivalence of this measure for different South African culture groups.

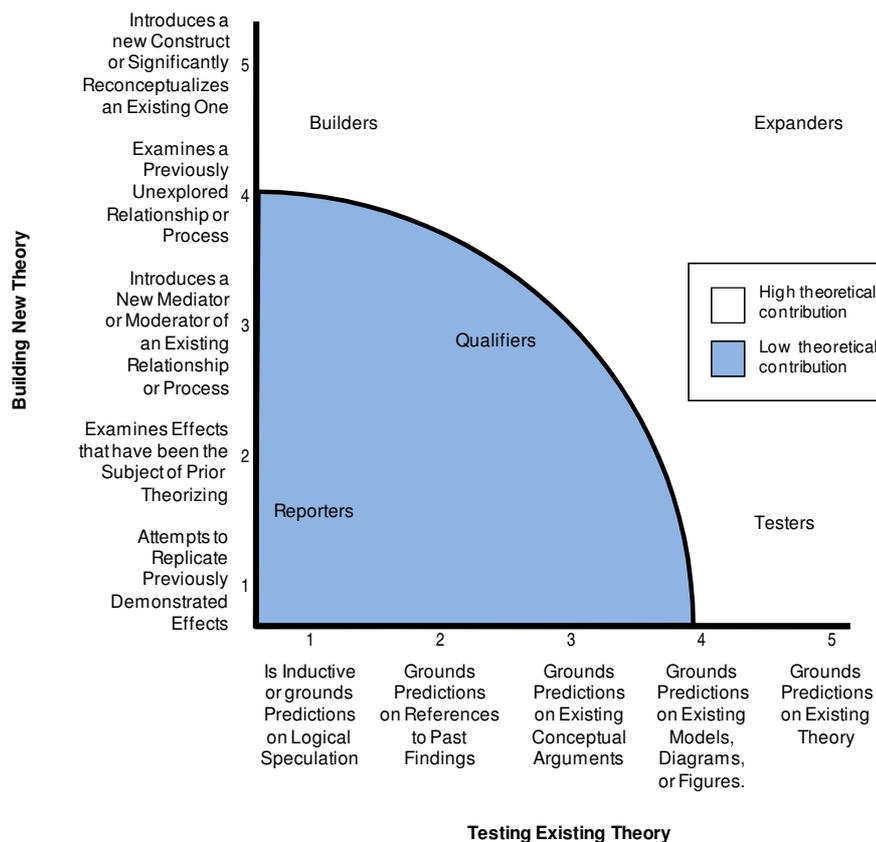
1.5 IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

Colquitt and Zapata-Phelan (2007) have created a taxonomy that can be used to capture the many facets of an empirical study's theoretical contribution. Their taxonomy includes two dimensions: (1) the extent to which the empirical study builds new theory and (2) the extent to which the empirical study tests existing theory. They suggest that an empirical study can offer a valuable theoretical contribution by being strong in theory building, strong in theory testing, or strong in both. Colquitt and Zapata-Phelan thus conceptualise theory building as the degree to which the empirical study clarifies or

supplements existing theory or introduces relationships and constructs that serve as the foundations for new theory. On the other hand, they conceptualise theory testing as the degree to which existing theory is applied in an empirical study as a means of grounding a specific set of a priori hypotheses. Using “testing theory” and “building theory”, Colquitt and Zapata-Phelan classify empirical contributions into five discrete categories, which they refer to as *reporters*, *testers*, *qualifiers*, *builders* and *expanders*. They regard builders, testers, and expanders to be higher in their theoretical contribution, whereas reporters and qualifiers tend to be lower in their theoretical contribution.

The taxonomy of Colquitt and Zapata-Phelan (2007) is illustrated in the following figure:

Figure 1.1: A taxonomy of theoretical contributions for empirical studies



Source: Adapted from Colquitt and Zapata-Phelan (2007, p.1283)

Using the above model of Colquitt and Zapata-Phelan (2007), this study will contribute on a theoretical level as follows:

- The current study will expand on the theoretical dimensional theory driven measurement of psychological ownership developed by Avey et al. (2009).
- The new measure will focus on the measurement of psychological ownership for South African organisations.

From a practical perspective, the following contributions will be made:

- A measure will be developed which can be used as a diagnostic tool to determine how positive organisational behaviour conceives psychological ownership. If psychological ownership can be measured, invested in, and developed, it can be managed for performance impact and competitive advantage.
- Psychological ownership will make a difference because it leads to employee attitudes (commitment, satisfaction, organisation-based self-esteem) and discretionary behaviours (such as organisational citizenship) that are critical for work effectiveness.
- Individuals high in organisational ownership may be more inclined to exhibit behaviours that serve to promote the welfare of the organisation more broadly. This may include activities such as serving on committees that deal with organisational issues, assuming leadership functions within the organisation, and taking on tasks that benefit the organisation even though they may have no advantage in terms of the individual's specific job.

Creating a sense of ownership among employees for the organisation has the potential to increase staff retention. The retention dilemma creates a major challenge for

organisations as was earlier mentioned. Employee turnover, particularly in tough economic times severely drains the intellectual capital of the organisation (Hay, 2002).

1.6 DELIMITATIONS AND ASSUMPTIONS

1.6.1 Delimitations

Firstly, the current study will focus on psychological ownership and not on legal ownership. Pierce et al. (2003) declare that psychological ownership is distinguished from legal ownership. Etzioni (1991) states that property and ownership are both real and both psychologically experienced, as they exist in the “mind.” Although these two concepts are related, legal and psychological ownership differ in substantial ways. Psychological ownership can exist in the absence of legal ownership, and vice versa.

Secondly, the study will focus on the positive aspects of psychological ownership. In certain situations and in conjunction with certain intense character traits, psychological ownership may produce behaviour such as reluctance to delegate authority and share information, obstructing of participative management, teamwork and cooperation, and even sabotage of organisational goals. It may also lead such employees themselves to feel frustration, stress and alienation, and to suffer physically and psychologically.

Thirdly, the study will be limited to the South African population, specifically individuals employed in the targeted organisations. As such, individuals from other countries will be excluded and findings could probably not be generalised. The researcher hopes, however, that data will be largely representative of the different cultural groups in South Africa.

1.6.2 Assumptions

The researcher makes a number of assumptions with regard to some aspects of the proposed study:

- The researcher assumes that participants will respond to the survey in an honest and correct way and that they will be motivated to complete the questionnaire.
- The researcher assumes that the statistical packages and programs that will be employed for data analysis are professional tools that will provide the researcher with accurate statistical results.
- The researcher assumes that the sample of employees from various organisations will be sufficiently representative of the South African population.
- The assumption is made that studies done by previous scholars that will be used as part of the literature review of this study, were done in an ethical and professional way and that interpretations and conclusions made by them are correct.

1.7 DEFINITION OF KEY TERMS

This study involves a number of key concepts that need to be defined. The manner in which these key terms are defined for the purpose of this study is set out in Table 1.1.

Table 1.1: Definition of key terms

Key term	Definition
Ownership	Ownership is multidimensional in nature and operates both as a formal (objective) and a psychologically experienced phenomenon (Pierce et al. 1991)
Psychological ownership	A state in which individuals feel as though the target of ownership (material or immaterial in nature) or piece of it is “theirs” (i.e. “It is MINE!”) and it exists in the absence of legal ownership (Pierce et al., 2001)
Efficacy and effectance	This means that is important for an individual to be in control (Furby, 1978)
Self-identity	This can be called coming to know oneself, expressing the self to others, and maintaining continuity in the self (Belk, 1988)
Having a place (belonging)	This motive arises from the need to have a certain own area, “a home”. This includes both actual places and objects (Pierce et al., 2001)
Positive Organisational Behaviour (POB)	This is the study and application of positively oriented human resource strengths and psychologically orientated practices that can be measured, developed, and effectively managed for performance improvement in today’s workplace (Luthans, 2002)
Autonomy	This literally refers to “regulation by the self” (Ryan & Deci, 2006)
Accountability	The implicit or explicit expectation that one may be called on to justify one’s beliefs, feelings and actions to others (Lerner & Tetlock, 1999)

Key term	Definition
Self-determination theory (SDT)	This holds that people from all cultures share basic psychological needs for autonomy, competence, and relatedness (Chirkov, Ryan, Kim & Kaplan, 2003)
Extra-role citizenship behaviour	Discretionary behaviour that is not formally rewarded by the organisation but contributes to the organisation's well-being, is voluntary and intended to be positive in nature (VandeWalle et al., 1995)
In-role behaviour	Behaviour that is required or expected by members by the organisation and that is heavily influenced by organisational structural contingencies (VandeWalle et al., 1995)
Multi-dimensional construct	A construct consisting of a number of interrelated attributes or dimensions (Law, Wang & Mobley, 1998)

In this study, several abbreviations have been used. The abbreviations and their meaning are listed in Table 1.2.

Table 1.2: Abbreviations

Abbreviation	Meaning
POB	Positive Organisational Behaviour
SDT	Self-determination theory
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
PCA	Principal-component analysis
FA	Factor analysis

1.8 OUTLINE OF THE STUDY

The study is divided in the following chapters, as displayed in Table 1.3.

Table 1.3: Chapter outline

Chapter	Heading	Content of chapter
1	Introduction	This chapter sets out the background of the study, problem statement, purpose statement, research objectives, importance and benefits of the study.

2	Literature study	This chapter will describe, contextualise and discuss the concept of psychological ownership. This will include the distinctiveness and different forms of psychological ownership, reasons for its existence and the routes through which psychological ownership emerges. The chapter will consider factors that influence psychological ownership. An integrated motivational that could be applied for explaining the state of psychological ownership will be presented. It will be argued that psychological ownership is a multi-dimensional construct. The role that psychological ownership has to play in staff retention will be discussed.
3	Research methodology and methods used	This chapter will explain the research methodology and strategy that will be followed in the study.
4	Results and findings of the research	This chapter will present the results and findings of the research.
5	Conclusion and Recommendations	This chapter will make concluding remarks about the research process and findings. It will discuss the achievement of the research objectives, and the contribution of the research from a theoretical, methodological and practical point of view. It will consider the limitations of the study and make recommendations for future research.

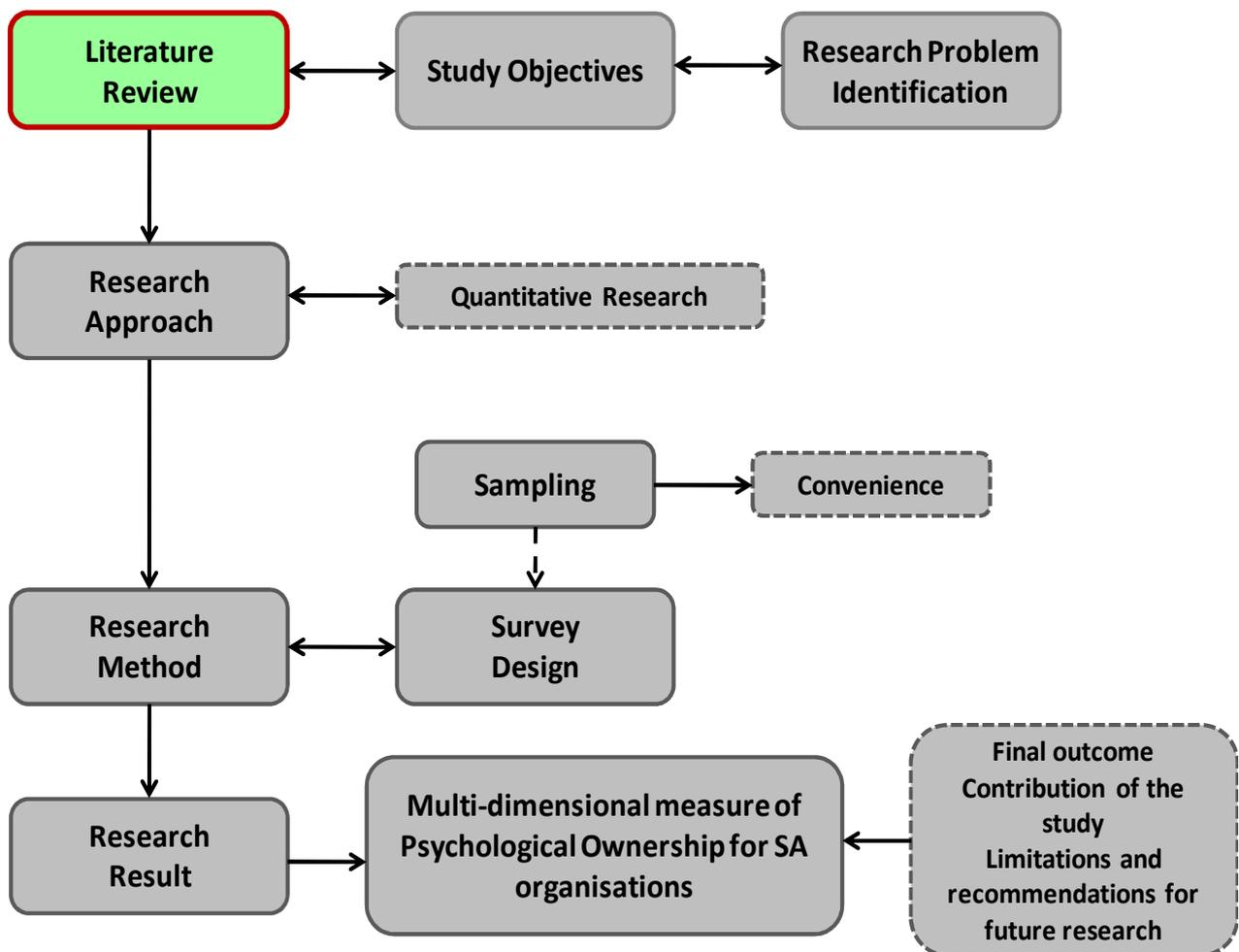
CHAPTER 2

LITERATURE STUDY

A man who reviews the old so as to find out the new is qualified to teach others.

- **Confucius**

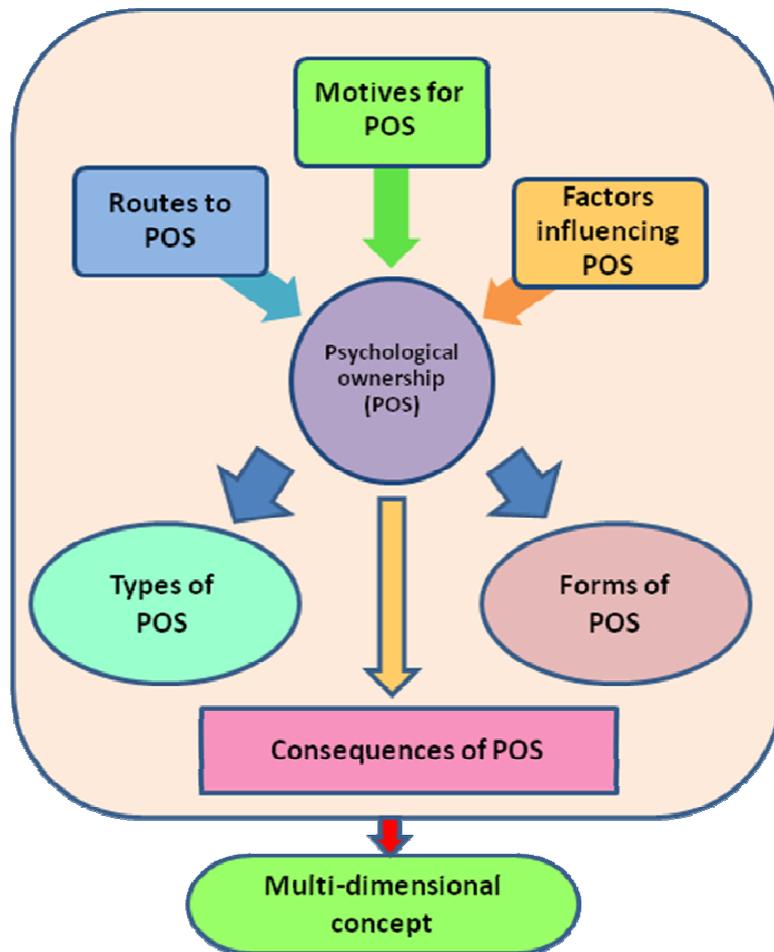
In this chapter...



2.1 INTRODUCTION

The research requires a literature review of the topic and related themes to equip the researcher with a thorough understanding of psychological ownership. Therefore it is necessary to research what it is and how it functions in an organisation. For this reason, the literature review will define and contextualise psychological ownership, emphasising its distinctiveness with regard to other related concepts. This chapter will describe the motives or reasons for, and the “routes to”, psychological ownership. It will discuss the different types and forms of psychological ownership, the factors that influence its emergence and the consequences of psychological ownership. An integrated motivational that could be applied for explaining the state of psychological ownership will be presented. This review will depict psychological ownership as a multi-dimensional construct and discuss the role it plays in employee retention. An outline of all the aspects that will be discussed in this chapter is displayed in Figure 2.1.

Figure 2.1: Outline of the literature review



(Author's own)

2.2 OWNERSHIP DEFINED

According to Rousseau (1950 [1762]), civil society probably began when a person fenced off a piece of land and took it into his or her head to claim “This is mine”; while others accepted this declaration. Grunebaum (as cited in Mattila & Ikävalko, 2003) states that ownership is connected to the relationships between human beings and the things and objects they surround themselves with, thus revealing that ownership is a much broader concept than a particular legal regime and the status based on it. In the

development of a model of employee ownership Pierce et al. (1991) propose that under certain conditions formal ownership leads to psychological ownership and an integration of the employee-owner into the ownership experience and that each form (formal and psychological) has its own role in the ownership-employee attitude/behavioural relationship.

- **Ownership form.**

A number of different formal arrangements fall under the general rubric of employee ownership (e.g. social ownership, worker/producer cooperatives, direct ownership, and Employee Stock Ownership Plans [ESOPs]), each consisting of different aspects of employee ownership and employee control. According to Quarrey, Blasi & Rosen (1986) all these different forms essentially share the same purpose: providing a capital ownership stake for workers. Pierce et al. (1991) propose that the actual form of ownership will most likely influence the formal dimensions of the ownership system and the ownership expectations, rights and responsibilities that are often created within the minds of the employee-owners as well as those who manage the system.

- **Attributes of the ownership construct**

Pierce et al. (1991) define formal ownership in terms of three basic rights, each of which may be present in a specific employee ownership milieu. The rights often associated with ownership are: (1) the right to possession of some portion of the owned object's real being and/or financial value; (2) the right to influence control over the owned object; and (3) the right to information about the position of that which is owned. Formal ownership comprising three dimensions: equity, influence, and information operate thus as a multi-dimensional variable.

However, Pierce et al. (1991) suggest that regardless of the type of ownership psychological ownership will lead to the integration of the employee-owner into the organisation and the ownership experience. O'Reilly (2002, p. 19) notes that "when

managers talk about ownership, what they typically want to instil is not financial ownership but psychological ownership – a feeling on the part of the employees that they have a responsibility to make decisions that are in the long term interest of the company”.

2.3 THE PSYCHOLOGICAL EXPERIENCE OF OWNERSHIP

The psychology of possession is well rooted in people, and according to Furby (1978) this sense of possession (the feeling that an object, idea, or entity is “*mine*” or “*ours*”) is the core of psychological ownership. Psychologists, anthropologists, philosophers, geographers, and child development specialists, among others, have explored the psychological aspects of ownership in a variety of contexts, including child development (Isaacs, 1933), consumer behaviour (Belk, 1988), house ownership (Porteous, 1976), across different socio-economic strata (Rochberg-Halton, 1980), within the philosophical discussions of “being” (Sartre, 1943) and in the workplace (Pierce et al., 2001; Pratt & Dutton, 1998). They all came to the conclusion that possession and feelings of ownership are a natural part of the human condition (Belk, 1988; Litwinski, 1947; Furby, 1978).

Cram & Paton (1993), for example, referring to a study among the elderly, note that it is common to witness the enervating effects associated with the removal of the elderly from their homes to nursing facilities. They ascribe these effects to the separation of the individuals from their possessions, with which much of the self has become interwoven. Child psychologists suggest that because of the toddler’s innate urge to control objects and to be effectant, feelings of *mine* and the close connection between “me” and “mine” emerge (Furby, 1991). Isaacs (1933) notes that among young children at play, one can often observe strong reactions; for example, this is “*my* car, this is *mine*”, when a child picks up another child’s toy. In sum, people tend to equate feelings of possession with feelings of ownership (Dittmar, 1992; Furby, 1978). Van Dyne and Pierce (2004) link the psychology of possession with attitudes, self-concept and sense of responsibility, as follows:

Attitudes

The psychology of possession literature demonstrates that people feel positively about tangible and intangible targets of ownership. The feelings of ownership toward both material and immaterial objects can not only shape identity (as was mentioned earlier by Belk (1988) and Dittmar (1992)), but can also affect behaviour (Isaacs, 1933). Beggan (1992) and Nuttin (1987) theorise that owned objects appear to be more attractive and are rated more favourably than objects which are not owned, possibly as a result of invested effort, self-enhancing biases, controllability, and social approval. Formanek (1991) states that the growth of possessions can produce a positive and inspiring effect, whereas the loss of possessions leads to feelings of depression and “shrinkage of our personality, a partial conversion of ourselves to nothingness” (James, 1890, p. 178). Feelings of psychological ownership thus lead to positive attitudes about the entity.

Self-concept

The psychology of possession also proposes that feelings of ownership cause people to view tangible and intangible possessions as part of the extended self. Dittmar (1992) believes that it is common for people to experience a psychological connection between the self and various targets of possession, such as homes, motor cars, space, and other people. According to Belk (1988) and Dittmar (1992), possessions become so much a part of our identity that we see them as an extension of ourselves. In his treatise *Being and nothingness*, Sartre (1969 [1943]) notes that “to have” (along with “to do” and “to be”) is one of the three categories of human existence and that “the totality of my possessions reflects the totality of my being ...I am what I have ...What is mine is myself”. Mann (1991, p. 211) supports this, writing, “What I own feels like part of me”. In 1890, psychologist William James commented on the fine line between “me” and “mine”: “We feel and act about certain things that are ours very much as we feel and act about ourselves” (James, 1890, p. 291). Thus, tangible and intangible possessions and feelings of psychological ownership become linked to the self-concept.

Sense of responsibility

Both Beaglehole (1932) and Furby (1978) find that possessions and feelings of ownership trigger a sense of responsibility for the entity. According to Hall (1966), possession causes individuals to protect and defend their ownership rights. Even in the context of property rights, Wilpert (1991) addresses the importance of the protection and enhancement of possessions, which include improvements as well as control of access by others.

Summary

Research on the psychology of possession links feelings of ownership with positive attitudes about the target of ownership, the self-concept, and sense of responsibility for the target. Pierce et al. (2001) further conclude that: (1) the feeling of ownership is innately human; (2) people develop feelings of ownership towards both tangible and intangible objects; and (3) ownership has important emotional, behavioural and attitudinal consequences for those that experience ownership. Many researchers and scholars have recognised and commented on the relationship between feelings of possession and work and organisational contexts. Peters (as cited in Pierce et al., 2004, p. 508) observes, for example, that Harley-Davidson made its successful turnaround due to the emergence of feelings of ownership. Brown (1989) suggests that psychological ownership will be the key to organisational competitiveness during the 21st century, whereas Kubzansky and Druskat (as cited in Pierce et al., 2003) propose that the psychological sense of ownership may be an integral part of the employee's relationship with the organisation. But what is psychological ownership and how can it be defined?

2.4 PSYCHOLOGICAL OWNERSHIP DEFINED

Pierce and colleagues (2003, p. 86) link feelings of possession with feelings of ownership and define psychological ownership as “that state where an individual feels as though the target of ownership or a piece of that target is ‘theirs’”. As part of their

elaboration of the construct, they highlight a number of distinguishing features.

The concept of ‘mine’

First, they suggest that the sense of ownership manifests itself in the meaning and emotion usually associated with ‘*my*’ or ‘*mine*,’ and ‘*our*.’ The conceptual core of psychological ownership is a feeling of possessiveness (Wilpert, 1991) and of being psychologically tied to a specific object or target (such as the product of one’s labour, home, land, or significant others). Psychological ownership thus answers the question: “What do I feel is mine?”

Relationship with targets

Secondly, psychological ownership reflects a relationship between an individual and a target: objects which are both material (e.g., work, tools) and immaterial in nature (e.g., workspace, ideas), in which the object is experienced as having a close connection with the self (Furby, 1978; Litwinski, 1942), becoming part of the “extended self” (Belk, 1988). Isaacs (1933, p. 225) reports: “... what is mine becomes a part of *me*”.

A cognitive and affective core

Thirdly, Pierce et al. (2003) have noticed that psychological ownership (the feeling that something is “*mine*” or “*ours*”) has many facets and includes a cognitive and affective core. The cognitive aspect reflects individual’s awareness, beliefs and thoughts regarding the target of ownership. Affectively, feelings of ownership are said to be pleasure producing in themselves (Beggan, 1992; Furby, 1978; Porteous, 1976) and give the owner a feeling of efficacy and competence (White, 1959). This affective and cognitive information based on affective judgements and more abstract beliefs is consistent with basic psychological research on attitudes conducted by Breckler and Wiggins (1989) and with the Affective Events Theory of Weiss and Cropanzano’s (1996) that differentiates beliefs about the job from emotional experiences at work. According

to Affective Events Theory different attitudes comprise different proportions of affective and cognitive elements. Extending and applying this idea to psychological ownership, Van Dyne and Pierce (2004) propose that psychological ownership could be differentiated from other work-related attitudes and has unique explanatory power since its conceptual core is feelings of possession that trigger affect-driven behaviours. Psychological ownership consists thus, in part, of an emotional attachment to the organisation that transcends the mere cognitive evaluation of the organisation.

Summary

Psychological ownership can be directed at a variety of objects (targets), including an organisation, a job, or a work project, and is considered to be a sense of possession of an object whereby the object becomes an extension of the self and is closely linked to the individual's identity and consist of affective and cognitive elements (Pierce et al., 2001).

2.5 THE CONCEPTUAL DISTINCTIVENESS OF PSYCHOLOGICAL OWNERSHIP

According to Pierce et al. (2001), the introduction of the concept of psychological ownership naturally raises the question about its conceptual distinctiveness, because a number of constructs in organisational behaviour theory portray the psychological relationship that individuals develop with organisations. Morrow (1983) states that it is important to differentiate psychological ownership of the organisation from other work-related attitudes (e.g. organisational commitment, organisational identification, internalisation, psychological empowerment and job involvement) to avoid construct proliferation since all involve a sense of attachment to or resonance with the organisation. Three constructs that are of particular interest when psychological ownership is considered, are organisational commitment, organisational identification and internalisation.

Organisational commitment refers to the feelings and/or beliefs concerning the reason an employee wants to maintain his/her membership in a particular organisation (Meyer & Allen, 1991).

Organisational identification is defined Mael and Asforth (1992) by as a perceived oneness with an organisation and the experience of the organisation's successes and failures as one's own.

Internalisation refers to the incorporation of values and assumptions within the self as guiding principles (Mael & Asforth. 1990)

Although commitment, identification and internalisation describe different types of psychological relationships with organisations, they may co-exist with psychological ownership especially when the ownership target is the organisation. Commitment, identification and internalisation are neither a necessary nor a sufficient condition for psychological ownership they are likely to have a reciprocal relationship with psychological ownership.

Pierce et al. (2001) theorise that psychological ownership can be differentiated from other constructs on the basis of such factors as its conceptual core (namely possessiveness), question or focus, motive served, development, type of state, selected consequences and rights and responsibilities, as summarised in Table 2.1. These notions undoubtedly share certain similarities but, fundamentally, the specifics of the definitions involved suggest that the conceptual core differs somewhat from one conceptualisation to the next. In table 2.1 the focus was primarily on the distinctiveness, rather than the similarities and links between psychological ownership and the other constructs. Although there might be an overlap in the observed effects, for example theory indicates that identification and psychological ownership both produce positive (e.g. organisational citizenship behaviour) and negative (e.g. deviance) effects, the processes by which they are proposed to occur are different. Although commitment, identification and internalisation share reference to the self, they differ in their theoretical

anchoring. Psychological ownership is primarily grounded in psychological theories of possession while, for example, identification is anchored in social identity theory, and commitment is anchored in reasons for social membership.

From Table 2.1, point 2 it is clear that the question or focus answered by each of these constructs is different. Psychological ownership of the organisation answers the question: “How much do I feel this organisation (workplace) is mine?”, whereas organisational commitment asks “Should I maintain my membership in the organisation?” (because I want to, because I need to, or because I ought to?) (Meyer & Allen, 1991). Organisational identification addresses the question: “Who am I?” (Mael & Tetrick, 1992), while internalisation asks “What do I believe?” (O’Reilly & Chatman, 1986). Psychological empowerment addresses the question: “Do I feel capable and intrinsically motivated in my work role?” (Spreitzer, 1995) and job involvement asks “How important is the job and job performance to my self-image?” (Lawler & Hall, 1970; Blau & Boal, 1987). Lastly, job satisfaction asks “What evaluative judgments do I make about my job?” (Weiss & Cropanzano, 1996).

Feeling a sense of ownership of the organisation, the feeling of possessiveness and feeling the organisation is “*mine*” or “*ours*”, thus differs fundamentally from the need, the desire, or obligation to remain in the organisation (organisation commitment: Meyer & Allen, 1997). It differs from using a unique and admired characteristic of the organisation to define the self (organisational identification: Mael & Tetrick, 1992) and it differs from association-based goal equivalence (internalisation: O’Reilly & Chatman, 1986). Psychological ownership of the organisation is also different from feeling competent and intrinsically motivated at work (psychological empowerment: Spreitzer, 1995). It is different from being consumed by work and having the job as a central life interest (job involvement: Lawler & Hall, 1970; Blau & Boal, 1987). Lastly, the possessive feeling that an object is “*mine*” and “*ours*” differentiates psychological ownership from positive or negative evaluative judgments of the job or job situation (job satisfaction: Weiss & Cropanzano, 1996).

Table 2.1: Comparison of Psychological Ownership with Commitment, Identification, Internalisation, Psychological empowerment and Job involvement

Dimensions of Distinctiveness	Psychological Ownership	Commitment	Identification	Internalisation	Psychological Empowerment	Job Involvement
Conceptual core	Possessiveness	Desire to remain affiliated	Use element of organisation's identity to define oneself	Shared goals or values	Active orientation to work role	Identification with one's job
Questions answered for individual	What do I feel is mine?	Should I maintain membership?	Who am I?	What do I believe?	Can I shape my work role and context?	How important is my job to me?
Motivational bases	<ul style="list-style-type: none"> Efficacy / effectance Self-identity Need for place 	<ul style="list-style-type: none"> Security Belongingness Beliefs and values 	<ul style="list-style-type: none"> Attractions Affiliation Self-enhancement Holism 	<ul style="list-style-type: none"> Need to be right Beliefs and values 	<ul style="list-style-type: none"> Meaning Competence Self-determination Impact 	<ul style="list-style-type: none"> Importance of work to self-concept Satisfy need for self-esteem
Development	Active imposition of self on organisation	Decision to maintain membership	<ul style="list-style-type: none"> Affiliation Emulation 	Adoption of organisation's goals or values	<ul style="list-style-type: none"> People's perception 's about themselves in relation to their work environments 	<ul style="list-style-type: none"> Psychological importance at work Job situation is central to person and his identity
Type of state	<ul style="list-style-type: none"> Affective / cognitive 	<ul style="list-style-type: none"> Affective 	<ul style="list-style-type: none"> Cognitive / affective 	<ul style="list-style-type: none"> Cognitive / objective 	<ul style="list-style-type: none"> Affective / perceptual Cognitive 	<ul style="list-style-type: none"> Affective
Select consequences	<ul style="list-style-type: none"> Rights and responsibilities Promotion of / resistance to change Frustration, stress Refusal to share Worker integration Alienation Stewardship and OCB 	<ul style="list-style-type: none"> OCB Intent to leave Attendance 	<ul style="list-style-type: none"> Intent to remain Frustration / stress Alienation Performance Well-being of individual 	<ul style="list-style-type: none"> OCB Intent to leave In-role behaviour 	<ul style="list-style-type: none"> Effectiveness Innovative behaviour 	<ul style="list-style-type: none"> Intrinsic motivation Concern for welfare at organisation Intent to remain Low level of absence
Rights	<ul style="list-style-type: none"> Right to information Right to voice 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Meaningful work Access to information Rewards Recognise individual contribution 	<ul style="list-style-type: none"> Meaningful work Adequate supervision
Responsibilities	<ul style="list-style-type: none"> Burden sharing Active and responsible voice Becoming informed Protecting Caring for and nurturing Growing / enhancing 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Maintain the status of the admired attribute 	<ul style="list-style-type: none"> Goal and value protection 	<ul style="list-style-type: none"> Capability to perform activities with skill 	

Source: Pierce et al. (2001, p. 306) and researchers' own summary

OCB = Organisation Citizenship Behaviour

Pierce et al. (2001) therefore conclude that it is reasonable to suggest that psychological ownership may predict (1) certain effects unaccounted for by existing theoretical models of other constructs; and (2) criterion variance currently unaccounted for by each of the other constructs.

Proof of studies

Mayhew et al. (2007) and Avey et al. (2009) have confirmed a strong association between affective organisational commitment and psychological ownership of the organisation. Affective commitment is based on a sense of identity with the organisation, its values and its goals, and is reflected in feelings of belongingness and wanting to be attached to, and involved in the organisation (Meyer & Allen, 1991).

Van Dyne and Pierce (2004) provided discriminant validation evidence examined the relationship between psychological ownership and organisational commitment in two organisations and reported that psychological ownership for the organisation increased variance in commitment. Similarly, in their study, Olzer, Yilmaz and Ozler (2008) found that psychological ownership variables account for 50.1% of the changes in the organisational commitment variables. VandeWalle et al. (1995) reported that organisational commitment mediates the effects of psychological ownership on extra-role behaviour. Therefore, psychological ownership makes a difference because possessive feelings toward the organisation (psychological ownership) lead to an increase in organisational commitment; committed employees will engage in extra-role behaviour; and extra-role behaviour will contribute to higher performance. Prior research has demonstrated a relationship between extra-role behaviour and performance. Organisations that value organisational commitment and extra-role behaviour may want to increase the incidence of these behaviours by increasing psychological ownership.

Summary

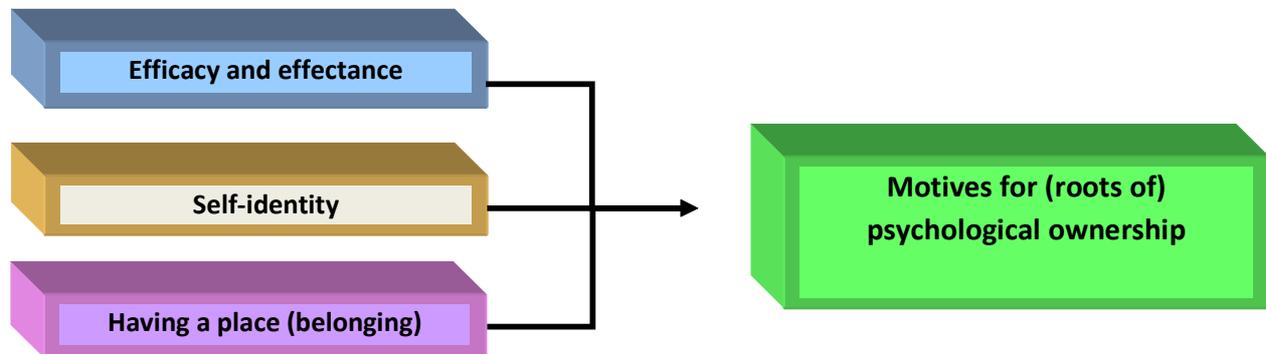
Psychological ownership is conceptually distinct from organisational commitment, identification, internalisation, psychological empowerment, and job satisfaction, for it describes a unique aspect of the human experience in organisations. Van Dyne and Pierce (2004) provided discriminant validity evidence for the distinctiveness of psychological ownership items from those employed to measure commitment, identification, internalisation, job satisfaction and involvement. Their observation of the unique ability of psychological ownership to predict worker attitudes and behaviours over and above the effects of demographic characteristics, affective organisational commitment, organisational identification, internalisation, job involvement and job satisfaction is important because it demonstrates the unique contribution of the psychology of possession to the understanding of the individual-organisation relationship.

We can ask the question: What are the reasons why people develop feelings of psychological ownership? What lies beneath this psychological condition? This answer lies in the motives for psychological ownership.

2.6 THE MOTIVES FOR (“ROOTS OF”) PSYCHOLOGICAL OWNERSHIP

In 2001, Pierce and his colleagues proposed a framework for a theory of psychological ownership. They defined the “roots of” – in other words, the motives or the reasons why people develop feelings of psychological ownership. They summarised previous research (Dittmar, 1992; Furby, 1978; Porteous, 1976; Seligman, 1975) on the subject by stating that psychological ownership emerges because it satisfies both generic and socially generated motives of individual beings. Pierce et al. (2001; 2003) propose that the roots of’ psychological ownership can be found in three human motives: (1) the motive for efficacy and effectance (White, 1959); (2) self-identity (Dittmar, 1992); and (3) having a place in which to dwell (“home”; Heidegger, 1967).

Figure 2.2: The motives for psychological ownership



(Author's own)

Pierce, Jussila and Cummings (2009) emphasise that each of these motives is hypothesised to *facilitate* the development of the state of psychological ownership, as opposed to being the direct cause of its occurrence. They further state that if feelings of ownership are rooted in this set of motives, it is assumed that individuals can develop feelings of ownership for a variety of objects, as long as these objects allow this set of motives to operate and to be satisfied. Each of the three motives for psychological ownership will be discussed in detail.

2.6.1 Efficacy and effectance

According to Isaacs (1933, p. 225), the motive underlying possession is, in large part, to be in control – having the means to satisfy “my need as *mine*” – and having possessions enables the individual to feel safe when they are “mine to have and to hold”. The work of Furby (1978) postulates that the motivation for possession stems from the individual’s need for effectance and ability to produce desired outcomes in the environment. According to White (1959), “effectance” represents our need to deal effectively with our environment. When we are dissatisfied with elements in our environment, the effectance motive is aroused. When our actions (or the actions of others) produce further sources of dissatisfaction, the motivation continues until the environment has been adjusted to our satisfaction. White believes that this interaction

with the environment, and our ability to control it, gives rise to feelings of pleasure and efficacy, as both stem from our “being the cause” and having adjusted the environment through our own actions.

Furby (1978) is of the opinion that there are both intrinsic and instrumental functions served by possessions. According to her, the control of objects through ownership is pleasure producing per se and leads to perceptions of personal efficacy. Furby concludes that possessions come to be part of the extended self and are therefore important to individuals because they are instrumental in exercising control over the physical environment as well as over people. According to Pierce et al. (2003), the desire to experience causal efficacy in exploring and altering the environment leads to attempts to take possession and to the emergence of ownership feelings; through this process, “possessions and self become intimately related” (Furby, 1991, p. 460).

2.6.2 Self-identity

The second motivational underpinning of psychological ownership is the need for self-identity. In addition to serving an instrumental function (efficacy/effectance motive), numerous scholars (e.g., Dittmar, 1992; Mead, 1934; Porteous, 1976) have suggested that possessions also serve as symbolic expressions of the self, since they are closely connected to with self-identity and individuality. Pierce et al. (2003) propose that people use ownership to define themselves, to express their self-identity to others and to maintain the continuity of the self across time.

As individuals find pleasure and comfort in their interactions with objects, the socially shared meaning ascribed to those objects gets internalised and becomes part of the individual’s self-identity (McCracken, 1986). Dittmar (1992, p. 85) states that “personal possessions come to objectify aspects of self-definition”, and thus through experiencing an object people learn something about the environment and about themselves, as they are closely linked.

Dittmar (1992, p. 86) concludes that it is through our interaction with our possessions, coupled with a reflection upon their meaning, that “our sense of identity, our self-definition, are established, maintained, reproduced and transformed”. According to Kron and Saunders (as cited in Pierce et al., 2003), interacting with their possessions provides people with a space, comfort, autonomy, pleasure, and opportunity that facilitates the development and cultivation of their identity. They are symbols of the self (Cooper, as cited in Pierce et al., 2003).

- **Expression of self-identity to others**

Dittmar (1992) and McCracken (1986) suggest that possessions play an important role in social interaction. In addition to affording power over others, possessions communicate the individual’s identity to others, consequently recognition and social prestige. Objects can thus objectify the self (Dittmar, 1992). Rochberg-Halton (1984) states that in objectively telling who we are, what we do, and who or what we might become, possessions can act as signs of the self and role models for its continued cultivation.

According to Dittmar (1992), people tend to collect and freely present various objects as representational of their self-identity (e.g., location and type of home owned, awards, degrees, and certificates visibly displayed on office walls). Levy (as cited in Pierce et al., 2003) confirms that people convey their personal values, character, attitudes, education, membership and achievements by means of the items they purchase and display. People frequently express their concern with how others will observe them in relation to particular possessions (Munson & Spivey, as cited in Pierce et al., 2003).

- **Maintaining the continuity of self-identity**

Rochberg-Halton (1984) holds that possessions are seen as a way to reach continuity of the self. Cram and Paton (1993, p. 19) suggest that “[P]ossessions are repositories of memories of one’s self-identity in the past”. Possessions thus provide people with feelings of comfort, an emotional connection between themselves and their past.

Rochberg-Halton (1984) and Cram and Paton (1993) give the following example: as people get older, their past, reflected by photographs, letters, diaries, and gifts from others, becomes an increasingly important part of their self-identity.

Dittmar (1992) is of the opinion that possessions may even provide a sense of security. The preserving of possessions allows individuals to maintain a sense of continuity through those objects that have become symbolic extensions of their selves. In contrast, if those possessions are taken away or lost, individuals may experience an erosion of the sense of self (James, 1890). Pierce et al. (2003) therefore propose that the motivation for ownership and thus for psychological ownership is in part grounded in self-identity.

2.6.3 Having a place

To have a “home” in which to dwell, is the third motive that is suggested to serve as a reason for feelings of ownership. According to the French political philosopher Simone Weil (1952, p. 41), to have a place is an important “need of the human soul”. Individuals have a need to own a specific space. “Home” is perceived as “the territorial core”, a desired space and set point of reference around which people organise their everyday lives (Porteous, 1976).

According to Darling (as cited in Pierce et al., 2003), because of people’s territorial need, they dedicate a considerable amount of time, energy, and resources to decorating, protecting, and displaying their homes. The home is an entity of ownership that may serve the human need for having a place – my place, states Duncan (1981) in her discussion of home ownership. According to Porteous (1976), “the home” is essential for the reason that it provides the individual with both spiritual and physical security. Porteous believes that the personification of owned objects (e.g., the home) serves to promote security, identity and identification, each of which is important since it symbolises freedom of self-determination.

Control over space, personalisation of space as an affirmation of identity and stimulation are seen as the three territorial satisfactions that develop from the possession of territory (Porteous, 1976). The home refers not only to a geographical space, but to such concepts as the community or neighbourhood, which also serve as a home or a home base for some individuals, thereby facilitating the fulfilment of their territorial needs. “Home” can also be seen as a permanent point of reference around which the individual organises an important part of his or her reality. Porteous notes that “home” is probably found in those possessions in which the individual has made a significant emotional investment. Therefore Porteous suggests that it is those possessions in which the individual finds an intense sense of identification that come to be considered as “home” – *my* place.

According to Dreyfus (1991, p. 45), “when we inhabit something, it is no longer an object for us, but becomes part of us.” Heidegger (1967) called this “dwelling in” or being “at home in”. Dwelling exists in instances where one has been successful in infusing oneself in time and space, accompanied by the sense that one is “within” and “part of” some particular place. According to Heidegger (1967), home is, in part, achieved as a result of an individual’s interaction with his or her environment and the personalisation of this environment, which enhances familiarity, a sense of being one with, and the discovery of oneself within. People become psychologically attached to a variety of objects of material or immaterial nature as they develop their home base (coming to “feel at home with” one’s language, one’s country, one’s things). Pierce et al. (2003) note that in many of these possessions people may find a special place, one that is “*theirs*,” that is familiar and that provides some kind of personal security. They thus suggest that part of the reward inherent in psychological ownership is having a home, a place that one feels is one’s own.

2.6.4 Summary

Feelings of ownership allow individuals to fulfil three basic human motives: namely efficacy and effectance; self-identity; and having a place (home). These motives,

therefore, are the reason for psychological ownership. Each motive facilitates the development of psychological ownership, rather than directly causing it to occur.

Based on this, Pierce et al. (2003) propose that psychological ownership manifests itself in organisations much as it does in other contexts because, as suggested in organisational behaviour research, the motives of efficacy and effectance, self-identity, and having a place can be satisfied in organisations. Research provides empirical evidence that individuals express feelings of ownership toward their work (Beaglehole, 1932), the products they create (Das, 1993), their jobs (Peters & Austin, 1985), their organisations (Dirks et al., 1996), the practices employed by organisations (Kostova, 1998), and specific issues in their organisations (Pratt & Dutton, 2000). But how can employees come to feel ownership?

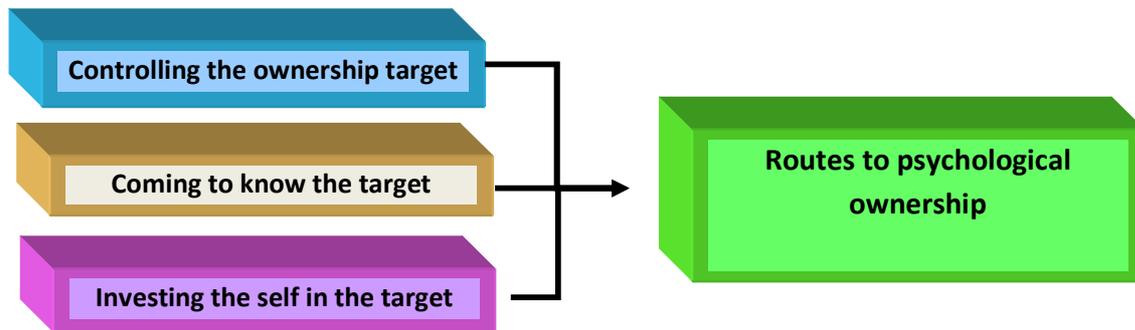
2.7 THE DETERMINANTS OF (“ROUTES TO”) PSYCHOLOGICAL OWNERSHIP

Pierce and colleagues (2001) proposed that the phenomenon of psychological ownership is rooted in a set of human motives and that individuals can develop feelings of ownership for a variety of objects as long as these objects allow these motives to operate and to be satisfied. They further examined how organisational members come to feel ownership and identified three major routes or paths through which psychological ownership emerges:

- (1) Controlling the ownership target (object)
- (2) Coming to know the target intimately
- (3) Investing the self in the target.

Although the routes are examined separately, they are potentially interrelated. The “routes to” psychological ownership are displayed in Figure 2.3.

Figure 2.3: The “routes to” psychological ownership



(Author's own)

2.7.1 Controlling the ownership target

Control of an object gives rise to feelings of ownership for that object (Furby, 1978; McClelland, 1951; Rochberg-Halton (1984). Furby argues that the greater the amount of control an individual can exercise over certain objects, the more they will be psychologically experienced as part of the self. McClelland also reasons that material objects that can be controlled become regarded as part of the self and that the greater the amount of control, the more the object is experienced as part of the self. In contrast, Seligman (1975) and Lewis and Brook (1974) found that objects that cannot be controlled or that are controlled by others are not perceived as part of the self. Prelinger (1959) discovered that individuals were more likely to identify as part of themselves objects which they could control and manipulate, or objects which could affect them, than objects outside their sphere of control.

Rudmin and Berry (1987), in their studies of ownership semantics, found that ownership equates to being able to use and to control the use of objects. According to Rudmin and Berry, those objects over which individuals exercise control are the ones they are most likely to perceive as theirs.

Ellwood (as cited in Pierce et al., 2003) suggests that objects which are regularly used by an individual become assimilated into the user's self. Furby (1978) mentions that the

use of an object can be perceived as carrying out control over that object. She adds that being admitted to the use of an object provides a person with control over others and their admission to the object.

According to Pierce et al. (2001), organisations can provide members with numerous opportunities to exercise varying degrees of control over a number of factors, each of which is a potential target of psychological ownership. For example, job design is such a factor (Hackman & Oldham, 1980). More complex tasks and jobs that provide greater autonomy imply higher levels of control and thus increase the likelihood that feelings of ownership toward the target will emerge (Pierce et al., 2009). In contrast, some organisational factors such as centralisation and formalisation decrease the possibility for individuals to exert control and hence may impede the development of psychological ownership. In such a situation, individuals learn that nothing is “theirs”, because power is placed in the structure and people have limited control over the organisation or any part of it (Pierce et al., 2001).

2.7.2 Coming to intimately know the target

James (1890) suggested that individuals come to develop feelings of ownership for certain objects through a living relationship with that object. Beaglehole (1932) supports this notion by arguing that through intimate knowledge of an object, person, or place, a union of the self with the object takes place. Weil (1952, p. 33) illustrates this with an example of a gardener, who, “after a certain time, feels that the garden belongs to him”. People, thus, come to find themselves psychologically tied to things because of their active participation in or association with those things.

According to Beggan and Brown (1994), association with an object is so central to ownership that ownership is frequently framed in terms of association. Sartre (1943) stated that there is in fact, a causal relationship between the two, in that an individual’s association with an object gives rise to feelings of ownership. The more information and the better knowledge an individual has about an object, the deeper the relationship

between the object and the self, therefore the stronger the feeling of ownership toward it.

Pierce et al. (2001) propose that by various processes of association, organisations can provide their members with a number of opportunities for getting to know potential targets of ownership, such as work, job, projects, and teams. For example, when organisational members are given information about potential organisational targets of ownership (e.g., the mission of the organisation, its goals, and performance), they will feel that they know the organisation better and, consequently, may develop psychological ownership toward it. Information alone, though, may not be sufficient to create a sense of ownership. The outcome will be influenced by the intensity of the association, such as the number of interactions of the individual with the target. A longer association with a target (e.g., long tenure) will probably lead to perceptions of knowing the target better and as a result to a sense of ownership. Intimate knowledge can also be promoted by making information more accessible and less costly to acquire.

2.7.3 Investing the self in the target

Studies done by Sartre (1943) and Rochberg-Halton (1984), among others, provide insight into the relationship between work and psychological ownership. Locke (as cited in Pierce et al., 2001) argues that people own their labour and themselves and, therefore, often feel that they own that which they create, shape, or produce. Marx (cited in *The Marx-Engels reader*, 1976) stated that through people's labour they invest psychic energy in the products that they create; consequently, these products become representations of the self, much like their thoughts, words, and emotions. Therefore, according to Durkheim (1957), individuals own the objects they have created in much the same way that they own themselves. The investment of an individual's energy, effort, time, and attention in objects causes the self to become one with the object and to develop feelings of ownership toward the object (Rochberg-Halton, 1984).

Pierce et al. (2001) note that organisations provide a wealth of opportunities for their members to invest themselves in different aspects such as their job, projects, products, assignments, or work teams and, therefore, to feel ownership toward those targets. According to Beaglehole (1932), workers can develop a sense of ownership toward their work, their machines, and the product of their labour. The investment of the self comes in several forms, including investment of one's own time; skills; ideas; and psychological, physical, and intellectual energies. As a result, the individual may possibly begin to experience that the target of ownership emerges from the self. Pierce et al. (2001) suggest that individuals' psychological ownership of a target will be stronger the more they invest themselves in the target.

Several activities in organisations may require different levels of self-investment. This could be illustrated by the following example: non-routine technologies and jobs that are more complex will allow individuals to use their own judgement, where they will probably invest more of their own thought, personal style, and distinctive knowledge. Creating objects is one of the most apparent and powerful means by which individuals invest themselves in objects (Pierce et al., 2001). Creation involves investing one's values and identity as well as one's time and energy. Pierce and colleagues illustrate this by the following examples: engineers may feel ownership toward the manufactured goods they design, politicians toward the bills they write, and entrepreneurs toward the organisations they establish. Academics, for example, may perhaps feel strong ownership toward the outcome of their academic pursuits.

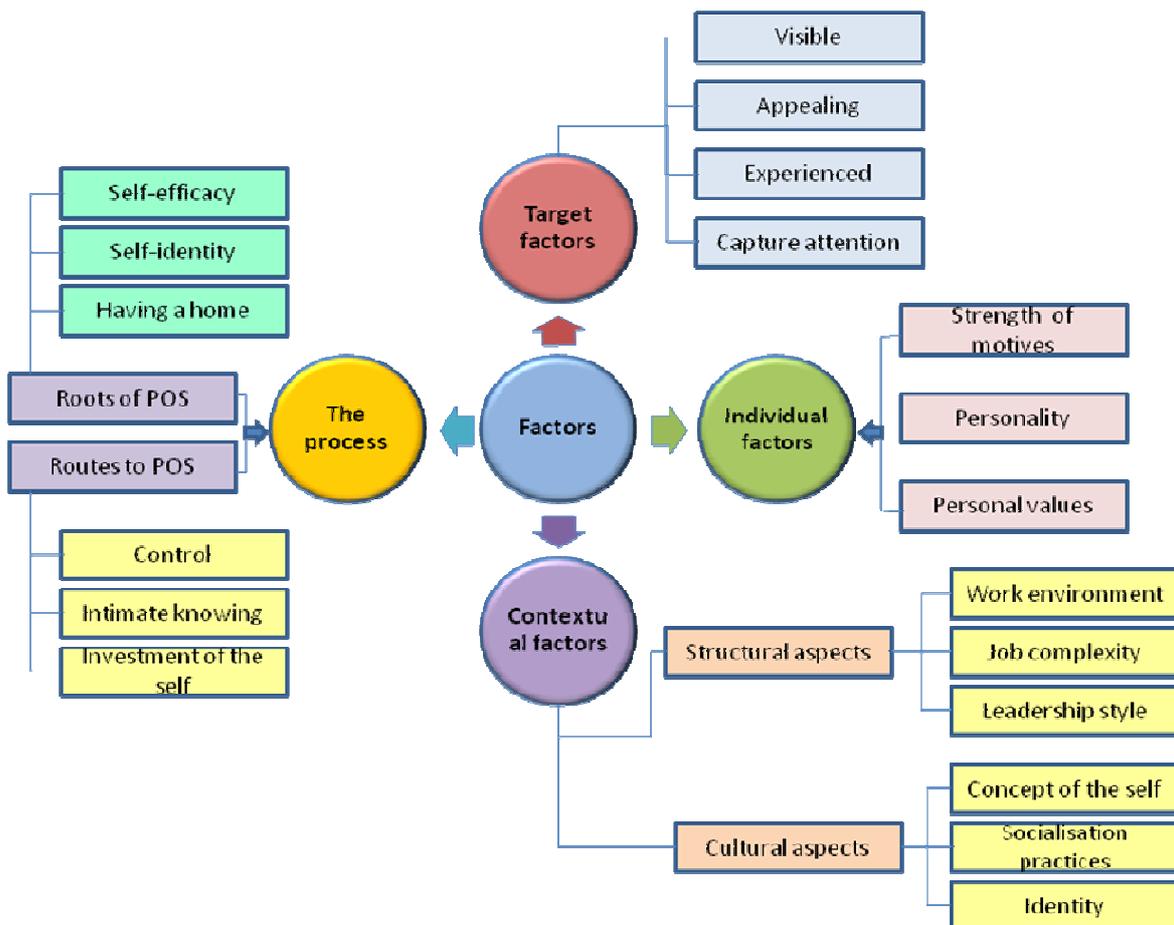
2.7.4 Summary

Pierce et al. (2001) propose that there is a positive and underlying relationship between the amount of control an employee has over a specific organisational factor; the extent to which an employee intimately knows a specific organisational factor; and the extent to which an individual employee devotes himself or herself to the potential target of ownership, and the degree of ownership the employee feels toward that target.

2.8 FACTORS THAT INFLUENCE THE EMERGENCE OF PSYCHOLOGICAL OWNERSHIP

According to Pierce et al. (2001), there are a number of factors that influence the emergence of psychological ownership. They suggest that it is likely that the development of psychological ownership exists in both the target and the individual and that its appearance and manifestation is also strongly influenced by situational forces. The different factors that influence the emergence of psychological ownership are displayed in Figure 2.4

Figure 2.4: Factors that influence the emergence of psychological ownership



(Author's own)

2.8.1 Target factors

Although there have been several efforts to find the targets to which individuals become psychologically tied (Kamptner, 1991; Rudmin & Berry, 1987), there does not seem to be a "theory of ownership targets", nor widespread agreement of a specific classification scheme of ownership targets. Some conclusions have, however, become apparent from this work. According to Furby (1978), an individual's culture and personal values shape what can and cannot be owned; Kamptner found that the nature and character of nearly all valued possessions changes throughout the individual's life-span; Kamptner and Rochberg-Halton (1984) observe that females tend to be inclined to associate with more thoughtful, expressive and symbolic objects, while males tend to identify with objects that involve physical interaction and activity; and Pierce et al. (2003) suggest that those items that are controlled, known intimately, and/or flow from one's self are likely to be items for which a psychology of "*mine*" emerges. Ownership appears to attach itself to a wide variety of targets: material objects (Dittmar, 1989; Isaacs, 1933); relationships and people, space or territory, body parts and creations (Rudmin & Berry, 1987); ideas (Isaacs, 1933); work (Holmes, 1967); tools (Ellis, 1985); and sounds heard, like nursery rhymes (Isaacs, 1933).

Building on their "roots of" and "routes to" theory of psychological ownership, Pierce and colleagues (2003) suggest that the degree to which an individual will in fact develop feelings of ownership for a target (object) will be influenced by definite target features that will influence: (1) the potential of the target (object) to comply with the three motives serving as foundations of psychological ownership and (2) the ability of the target (object) to facilitate or impede the "routes" through which the feelings of ownership emerge. The target must have the following characteristics: it must be visible and appealing to the individual, the individual must experience it and, lastly, it must capture the attention or interest of the individual. Feelings of psychological ownership will be enhanced by targets that satisfy the motives of efficacy and effectance, self-identity, and/or having a place (i.e., the "roots" of psychological ownership). In order to serve the need for efficacy and effectance the target must be manipulable. If the individual is going to employ the target to serve the self-identity motive, it must be attractive, socially

appreciated, and self-revealing; and lastly, only if the target is available and receptive to the individual will it be possible for the individual to find a home in it.

Pierce et al. (2003) further propose that possible targets of ownership are those whose characteristics can make it possible for individuals to control, come to know, and/or invest the self in them (i.e., follow the “routes” to psychological ownership). Pierce et al. (2003, p. 19) illustrate this with the following example:

[F]rom the “control” perspective, it may be more difficult for an academic to develop feelings of ownership for the entire university than for one’s research program, as the latter is more subject to one’s control. Similarly, it is unlikely that professors will feel the same level of psychological ownership for undergraduate versus doctoral students, simply because of the different degree to which they come to know these two groups of students and the amount of themselves invested in them.

2.8.2 Individual factors

- **Strength of the motive**

Pierce et al. (2003) therefore argue that the innate motives of efficacy and effectance, self-identity, and having a place to dwell will prepare the individual for psychological ownership. Although these motives are universal, the authors anticipate that there will be individual differences in the process. Firstly, there will be differences in the strength of the motives, both across individuals and within an individual over time. This means there is a varying likelihood of developing feelings of ownership in different individuals, or even within one individual at different points in time.

- **Personality**

Secondly, personality will also have an influence. Winter, Steward, Klohen, and Duncan (1998) point out that personality traits will affect how motives are expressed in behaviour. Pierce and colleagues suggest that traits will affect how an individual goes

about selecting ownership objects, and how the individual behaves towards the objects. For instance, extroverts may prefer to pursue targets through social means, while authoritarian individuals may choose to approach targets through exercising power and control, rather than through developing close relationships or through investing themselves in an object. Kasser and Ryan (1993) confirm that people with a high self-esteem may pursue intrinsic targets, while those with a weaker self-concept may be more prone to seek materialistic targets.

- **Personal values**

Pelham (1991) states that personal values make certain objects more or less esteemed. Pierce et al. (2003) support this by stating that different attributes are important to different people and that different types of object are “sought” by individuals. To enhance their self-concept, individuals may strive to increase feelings of self-worth by attempting to possess, psychologically or legally, objects of greatest importance to them. Ownership is one means of boosting an individual’s self-esteem and that is why individuals are probably prone to feel ownership over those objects considered most important to them according to their personal values. Pierce et al. (2003, p. 20) illustrate this with the following example: “individuals whose perceptions of self-worth are predicated on intellect, or who are part of cultures that value intellect, may seek to feel ownership over targets that reinforce this attribute (e.g., books, pieces of art)”. On the other hand, as noted earlier, it is possible that an individual may legally own some object, yet never claim the possession as his or her own. This could be the case when the object is not a source of efficacy and effectance, and is not associated with the individual’s self-identity, and/or a place within which to dwell, even though, according to Pierce and colleagues (2003, p. 20) “it might have been earned with hard cash and is controlled and known”.

2.8.3 The process

The process of psychological ownership emerges because of a complex interaction

between the “roots”, the “routes”, target factors, and individual factors (Pierce et al., 2003). According to Pierce et al., the three “roots” of psychological ownership, namely efficacy and effectance, identity and having a home, are not totally detached from one another. Ownership may possibly emerge as the result of any one or any subset of these needs. However, when two or more of the “roots” are involved and served, a stronger and more secure sense of ownership will probably become apparent (Pierce et al., 2003).

Similarly, the three “routes” to psychological ownership, namely control, intimate knowing, and investment of the self, are all complementary, additive and distinct in nature. Feelings of ownership can emerge through any single route, independent of the others, but feelings of ownership for a specific object (target) will be stronger when more than one route is followed (e.g., intimate knowing and controlling).

There is no clarity on whether some “routes” are more effective at generating psychological ownership than others. Pierce et al. (2003) speculate that the routes of control and investing one’s self in the target have the potential to be most effective, for the following two reasons: (1) theory and research reviewed earlier indicate that these routes tend to be most effective at bringing the target within the region of the self; (2) along with other effects, controlling and investing the self have the potential to also result in coming to know intimately. For example, the crafting of a sculpture, the designing of a house, or the writing of a manuscript will probably result in a detailed and in-depth understanding of the product of the individual’s creation. On the other hand, an individual can come to know a target intimately without either controlling or creating it. Therefore, Pierce and colleagues believe that because investing one’s self and controlling can lead to the third route, and because they hypothesise that the routes have additive effects, the first two may have greater overall effect than simply coming to have intimate knowledge of the target.

Matilla and Ikävalko (2003) suggest that ownership is long lasting by its nature and that it usually (in real life) does not occur as a phenomenon of short duration. However, Pierce et al. (2003) suggest that at the cognitive level an individual may come rather

quickly to recognise that a particular target is “*mine*”, although, for the feeling to come to the point where it manifests itself as a complete cognitive/affective state integrated into the self-concept, the process may well be lengthy, dynamic, and reiterative in nature.

As noted earlier, Pierce et al. (2003) declare that psychological ownership is distinct from legal ownership. Individuals become legal owners of a piece of property at the very moment they obtain it, but it may take some time before they begin to feel this property as theirs. Although there may be some exceptions, it is unlikely that sufficient control, intimate knowing, and/or investment of the self will emerge quickly. The investing of the self into the target will *in due course* give rise to feelings of ownership for that target (object). Pierce et al. speculate that stronger feelings of ownership will be generated when such feelings lead the individual to make personal sacrifices on behalf of the target.

2.8.4 Contextual factors

Pierce et al. (2003) anticipate that although a wide variety of contextual elements will have an effect on the emergence of psychological ownership, the main focus will be on two aspects: structural and cultural aspects.

- **Structural factors**

Individuals’ feelings of ownership may also be influenced by structural aspects of the situation, for example, norms, rules, laws, and hierarchy. According to Mischel (1973), the appearance and demonstration of individual differences and attitudes could be influenced by structural factors which create “weak” or “strong” situations. A “strong” or tightly controlled structure will obviously limit the freedom of individuals to express their dispositional tendencies, such as the extent to which they develop psychological ownership. A “weak” structure, on the other hand, will give freer rein to individuals’ ability to react to events, generate spontaneous responses, and to engage in behaviours such as psychological ownership. Therefore Pierce et al. (2003) conclude

that psychological ownership is less likely to emerge under strong (highly structured) than under weak situations.

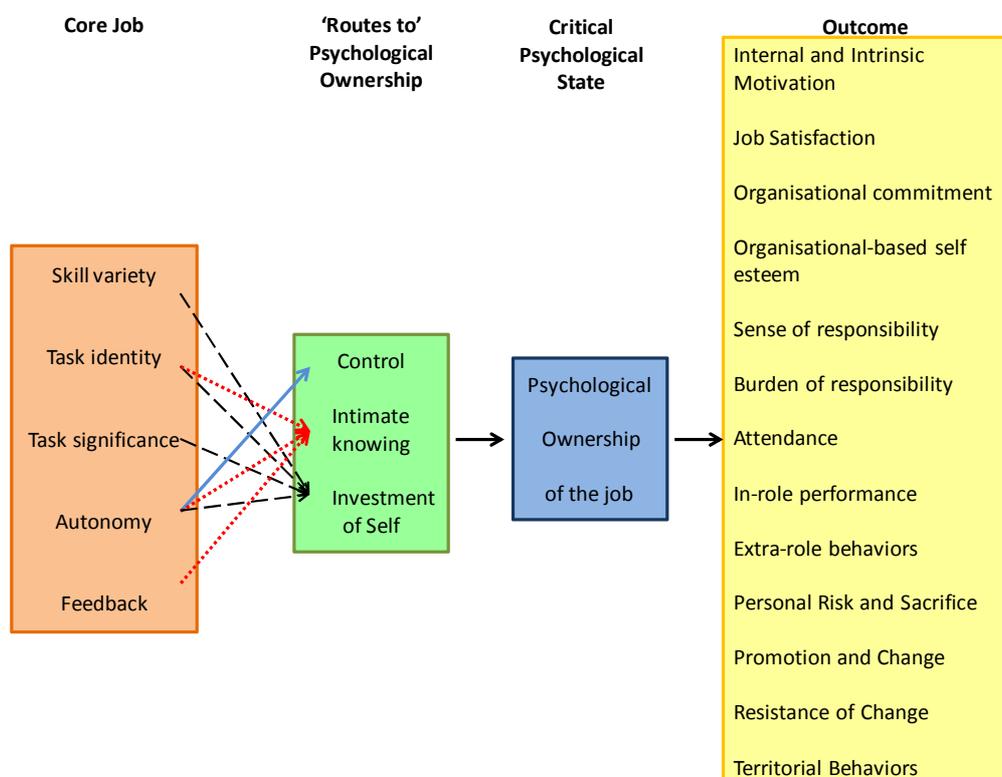
Different types of boundary that are placed around objects that stand between the individual and a potential target of ownership may also limit the opportunity for individuals to engage in key behaviours that lead to psychological ownership (controlling, coming to know, and investing the self). Structural factors or “fences”, such as boundaries, government structures, laws, customs, and mores of society, prevent the control, coming-to-know, and the investment-in-the-self routes, thus blocking the fulfilment of one or more of the motives for ownership by “fencing in” the object.

Structured work environment As mentioned earlier, the study conducted by O’Driscoll et al. (2006) found that a less rigid and structured work environment would generally provide individuals with greater autonomy and control over their job and work environment, thus promoting greater feelings of ownership of the job and the organisation. They suggest that organisations wishing to enhance the feeling of ownership experienced by their employees, along with increasing citizenship activities, might modify the work environment to increase levels of participation, control, and autonomy and reduce the extent of system control over employees’ job performance. Another study done by Pierce, O’Driscoll et al. (2004), found a positive relationship between low levels of work environment structure, job design autonomy, participative decision making and experienced control, and a negative relationship between technology routinisation and experienced control. According to them, organisational members will develop feelings of ownership for their job and for the employing organisation through the exercising of personal control over these important organisational affairs.

Complex job designs Work done by Pierce et al. (2009) suggests that organisations should focus on designing complex jobs rather than jobs that are characterised by standardisation, simplification, and a short time cycle. According to them, increasing job complexity provides job incumbents with the opportunity to customise their work, personalise it, and to find a place within it to dwell, and as a result

job complexity contributes to the satisfaction of the motives of efficacy and effectance, self-identity and having a place. Work that is designed in such a manner that it creates feelings of ownership satisfies the motives that underpin psychological ownership and is pleasure per se. Work that is pleasure producing contributes to work attendance and high quality of work performance, has strong and positive motivational consequences, reduces turnover, and produces frequent acts of good organisational citizenship behaviour (Pierce et al., 2009). According to Pierce et al., the Job Characteristics Model of Hackman and Oldham (1975) should be modified. They suggest that the job design-employee response relationship could be better mediated by the formerly recommended psychological states (i.e., experienced meaningfulness of work, experienced responsibility for work outcomes, and knowledge of results). Their proposed psychological ownership-based revision of the Job Characteristics Model is illustrated in Figure 2.5.

Figure 2.5: A psychological ownership-based revision of the Job Characteristics model



Source: Pierce et al. (2009, p. 485)

According to the model depicted in Figure 2.5, Pierce et al. (2009) propose that employees who have more control over their job are likely to develop job-based psychological ownership. Feedback, identifying with the task and autonomy will lead to intimate knowledge of the job and probably give rise to feelings of job-based psychological ownership. Similarly, identifying with the task and feeling that it has significance, combined with autonomy and the use of varied skills will help the employee to invest in the job, leading to a feeling of ownership. Complex job design will give employees psychological empowerment, which in turn will increase their intrinsic motivation, work satisfaction, organisational commitment, and voluntary and constructive work-related behaviours.

Leadership styles Yukl (1989) defined transformational leadership as leadership behaviour that transforms the norms and values of the employees, motivating them to perform beyond their own expectations. Shamir, House and Arthur (1993) state that employee's feelings of involvement, cohesiveness, commitment, potency and performance are enhanced by the transformational leadership style. A climate of self-determination, wherein employees receive support for training, recognition for hard work, and participative management practices is associated with beliefs and behaviours reflecting a sense of possession of the organisation (Wagner et al., 2003). Avey et al. (2009) found a positive relationship between psychological ownership and transformational leadership, which suggests that transformational leaders may be able to create conditions to enhance psychological ownership.

- **Cultural aspects**

The cultural aspects of a social context will also have a significant influence on the phenomenon of psychological ownership. Hofstede (1980, p. 25) defines culture as “the collective programming of the mind which distinguishes members of one human group from another”. Pierce et al. (2003) theorise that there are two theoretical reasons why they believe culture will have an effect on psychological ownership.

Concept of the self Firstly, according to Erez and Early (1993), there is a tight connection between psychological ownership and the concept of self. The concept of self is in part socially imposed and influenced by culture. The following examples from research in cross-cultural psychology illustrate the fact that there are various conceptualisations of the self that are the product of cultural values and beliefs: dominating nature versus submissive nature (Kroeber & Kluckholm, 1952); independent versus interdependent self (Triandis, 1994); “doing” versus “being” (Kroeber & Kluckholm, 1952); and ascriptive- versus achievement-orientated (Trompenaars & Hampden-Turner, 1998).

Socialisation practices Secondly, psychological ownership is partially “learnt” through socialisation practices, which again are culturally determined. Culture is thus an important aspect that needs to be examined to better understand the phenomenon of psychological ownership. Culture, which is reflected in customs, norms, traditions and beliefs in society, shapes the individual’s self-concept and values with regard to control, self-expression, self-identity, property, and ownership.

Pierce et al. (2003) propose that culture will have an influence on all the elements of their framework of psychological ownership: on the construct itself, the motives, the “routes”, targets, individuals, and the process. Although possessive feelings are universal, it is possible that individuals from different cultural groups assign different meaning to possessions in terms of viewing them as part of their extended selves. Possessions may play a more significant role in the self-definition in some cultures than in others. Therefore, Pierce et al. suggest that feelings of ownership may be present in different cultures to a different extent.

Identity motive There could be a difference in cultures with respect to the salience of the various ownership motives (roots). According to Hofstede (1980), the “efficacy and effectance” motive might be more prominent than the “having a place” motive in individualistic rather than in collectivistic cultures, and according to Kroeber and Kluckholm (1952), this also applies to cultures characterised by a “doing” versus “being” orientation, and in more deterministic cultures, which generally assume

dominance of people over nature. The “identity” motive, especially the expression of self-identity to others, will be more significant in collectivistic cultures (because people care about how others perceive them), as well as in cultures with an ascription versus achievement orientation (Trompenaars & Hampden-Turner, 1998). The other aspects of the self-identity motive, particularly those aspects of it that relate to the continuity of the self, are expected to be more important in cultures with a longer-term “past-future” orientation (e.g., South Korea, Hong Kong) than in cultures that have a more “present” orientation (e.g., the US). Pierce et al. (2003) also suggest cross-cultural differences with regard to the “routes” to psychological ownership. There will be a shift from the “control” and “investment of self” route to the “getting to intimately know” route if a person moves from a more deterministic and “doing” cultural orientation to a more fatalistic and “being” orientation.

According to Pierce et al. (2003), both the kind of target and the expression of feelings of ownership towards that target will vary greatly according to the culture and country in which the individual operates, and the locus of the self-concept in that society. Individualistic societies would place more emphasis on personal successes and achievements, and would focus ownership more on their material possessions and work that addresses these achievements. Other cultures are more collectivistic and place high value on the community, family and relationships; individuals from these cultures will probably develop feelings of ownership primarily towards social targets like the community and family. Pierce and colleagues therefore suggest three contextual influences on the development of psychological ownership: culture, the time-orientation of the culture and the importance of legal ownership.

Firstly, culture will have an influence on the time it takes for psychological ownership to develop. Cultures with a shorter-term orientation will probably develop feelings of ownership more quickly than cultures with a longer-term orientation. Cultures with a longer-term orientation will need a longer time to interact with the potential target (through controlling, coming to know, and investing the self).

Secondly, Pierce et al. (2003) suspect that it will be more difficult and painful for the individual to decouple from targets for which he or she felt ownership with a longer-term orientation. On the other hand, in shorter-term oriented cultures it will be much easier and less painful for individuals to get in and out of these psychological ownership relationships.

Thirdly, the relationship between legal ownership and psychological ownership may also vary across contexts. In settings where property rights are less respected and enforced, legal ownership will be less important. However, in environments where possession and property rights are strongly backed and reinforced by law and cultural values, legal ownership is more likely to be important.

According to Pierce et al. (2003), the level at which the feeling for psychological ownership resides, defined as individual versus collective, is a very important aspect of the construct. They theorise that in individualistic cultures (e.g. the US and Australia), the feeling of ownership will tend to be experienced at the individual level. In contrast, the more the self-concept is tied to the collective entity (as in collectivistic cultures like those of China and Japan), the more psychological ownership will be defined as a shared, collective feeling. There is very limited empirical evidence in support of such propositions. In a study involving ten countries, Kostova (1996) found that people from countries with a strong collective bias (such as Portugal) made a very clear distinction between two sets of words that described ownership – “we” and “our,” on the one hand, and “I” and “mine,” on the other. The levels of collective psychological ownership captured by the “we” items were markedly higher than those captured by the “I” items. This distinction was insignificant in other countries like France and the US, which are characterised as more individualistic.

2.8.5 Summary

The emergence of psychological ownership could be influenced by three groups of moderating factors, namely individual characteristics, the potential ownership target,

and the context. Therefore, the state of psychological ownership, while probably latent within each individual, does not necessarily always occur and is not equally strong across individuals, targets and situations. Psychological ownership is determined by a complex interaction of a number of intra-individual, object-related, and contextual factors.

2.9 THE DIFFERENT FORMS OF PSYCHOLOGICAL OWNERSHIP

Individual's goals are influenced by their self-regulatory focus. Self-regulation refers to “the process by which people seek to align themselves (i.e., their behaviours and self-conceptions) with appropriate goals or standards” (Brockner & Higgins, as cited in Kark & Van Dijk, 2007, p. 502). According to Higgins (1997), people have two basic self-regulation systems. The one system regulates the achievement of rewards and focuses individuals on *promotion* goals, while the other system regulates the avoidance of punishment and focuses individuals on *prevention* goals. Promotion goals include wishes, hopes, and aspirations and represent the “ideal self”, whereas prevention goals include obligations, duties, and responsibilities and represent the “ought self”.

The main differences between a promotion-orientated focus and a prevention-orientated focus are displayed in Table 2.2.

Table 2.2: Differences between promotion-orientated and prevention-orientated focus

Promotion-orientated focus	Prevention-orientated focus
<ul style="list-style-type: none"> • Employees are sensitive to the presence/absence of rewards • Concerned with accomplishments and aspirations • Use approach as a goal-attainment strategy • Experience emotions ranging from elation and happiness to dejection • Associated with a risk bias • More open to change – approach change as a potential advancement • More creative in problem-solving processes 	<ul style="list-style-type: none"> • Employees are sensitive to the presence/absence of punishments • Concerned with duties and obligations • Use avoidance as a goal-attainment strategy • Experience emotions ranging from anxiety to calmness • Associated with a conservative bias • Less open to change (stick with the already-known) – follow an avoidance or conservative strategy
<p>Include:</p> <ul style="list-style-type: none"> • Wishes • Hopes • Aspirations • Represent the “ideal self” 	<p>Include:</p> <ul style="list-style-type: none"> • Obligations • Duties • Responsibilities • Represent the “ought self”
<p>Needed to pursue development and change and to explore the advantage of creative behaviours</p>	<p>Needed where employees seek to ensure safety, stability, and predictability</p>

Source: Adapted from Kark and Van Dijk (2007) and Liberman, Idson, Camacho, and Higgins (1999)

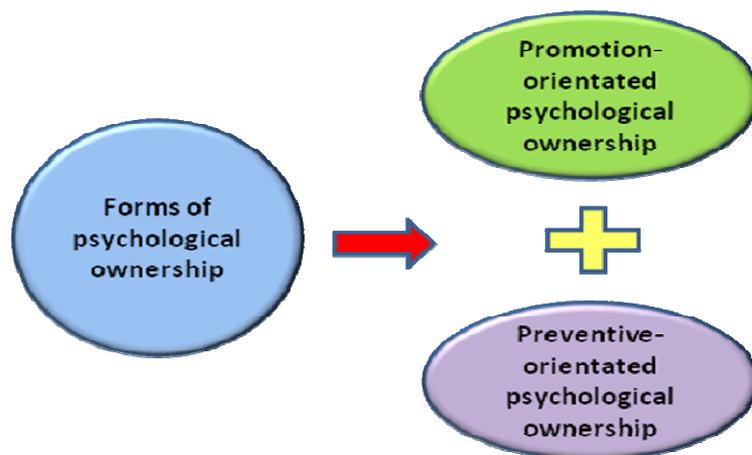
According to Klugel, Stephan, Ganzach, and HersHKovitz (2004), these two conflicting motivations can be described as the motivational source in pursuing all goals. Both promotion and prevention motivations are important for survival of the human being and the one approach is not necessarily more desirable than the other. In certain contexts, the promotion focus is necessary to pursue development and change and to explore the advantage of novel and creative behaviour, whereas in other contexts, a more preventative focus is needed where individuals seek to ensure safety, stability, and predictability (Higgins, 1997).

Avey et al. (2009) applied the promotion and prevention approaches to examining psychological ownership. According to them, individuals who are more promotion orientated may experience quite different feelings toward targets of ownership from those who are prevention orientated. Avey and colleagues illustrate this by means of the following example (2009, p. 175):

[I]n a scenario where sharing information may lead to change and improvement within a company, a manager processing promotive psychological ownership with a successfully completed project may decide to share information he “owns” with a cohort or team in a different division of the company because he sees improvement in the company as personally fulfilling. In contrast, those with a more preventative focus may carefully monitor and withhold information from others because they seek to avoid change and maintain stability.

According to Avey et al. (2009) thus, there are two independent forms of psychological ownership: *promotion-oriented* and *prevention-oriented*. The two independent forms of psychological ownership are displayed in Figure 2.6.

Figure 2.6: Two independent forms of psychological ownership



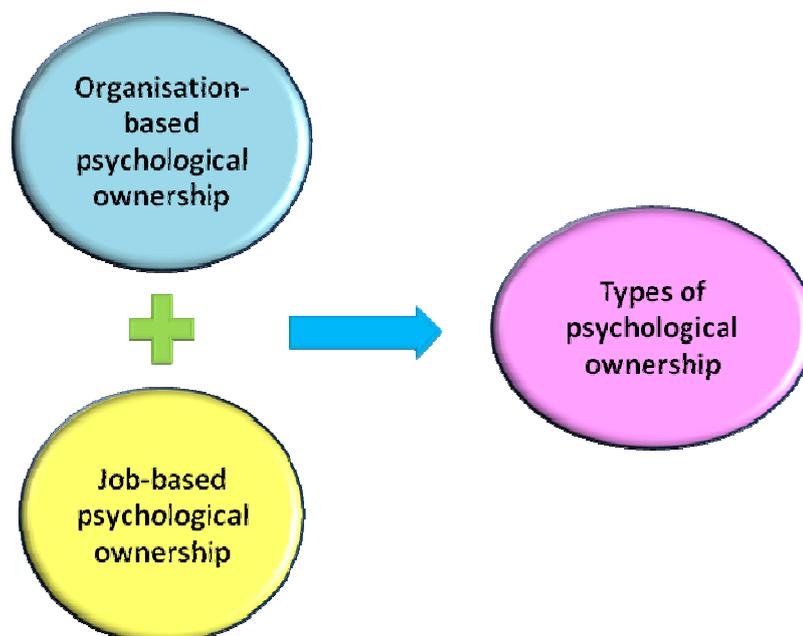
(Author's own)

2.10 THE DIFFERENT TYPES OF PSYCHOLOGICAL OWNERSHIP

An organisational manifestation of psychological ownership has been suggested by several managerial practitioners such as Brown (1989); Kostova (1998); Peters (1988) and scholars such as Pierce and colleagues (2001). Rudmin and Berry (1987), as well as Van Dyne and Pierce (2004), explain that in view of the ever-present nature of feelings of possession and ownership, it can be expected that individuals might develop feelings of psychological ownership toward various organisational targets, such as organisations themselves, jobs, work space, work tasks, work tools and equipment, ideas or suggestions, and even team members.

Two distinct types of psychological ownership: *organisation-based psychological ownership* and *job-based psychological ownership* have been identified (Mayhew et al., 2007), as displayed in Figure 2.7.

Figure 2.7: Types of psychological ownership



(Author's own)

Organisation-based psychological ownership is associated with an individual's feelings of possession of and psychological relation to the entire organisation. According to Mayhew et al. (2007) this state could be affected by a number of characteristics, including company goals and vision, company policies and procedures, organisational culture and climate, status of the organisation, and attitudes of senior management.

Job-based psychological ownership is concerned with individuals' feelings of possession toward their particular jobs (Mayhew et al., 2007). Researchers (e.g., Van Dyne & Pierce, 2004) consider both types of psychological ownership as attitudinal rather than enduring personality traits. According to Mayhew et al., psychological ownership is context specific and reflects the individual's current position concerning both the present organisation and the existing job.

In their study, Mayhew et al. (2007) found that job-based psychological ownership is related to job satisfaction, whereas organisation-based psychological ownership is related to affective organisational commitment and job satisfaction. This finding provides support for *psychological ownership* as a distinct construct that has relationships with the work attitudes of organisational commitment and job satisfaction. Mayhew et al. also found that autonomy had direct and indirect effects on psychological ownership and work attitudes. According to Mayhew et al., organisation-based psychological ownership partially mediates the relationship between autonomy and organisational commitment, whereas job-based psychological ownership partially mediates the relationship between autonomy and job satisfaction.

According to O'Driscoll et al. (2006), a less structured work environment will provide employees with the opportunity to exercise control over their actions. These feelings of increased control will be associated with a greater sense of ownership for both the job and the organisation. In their study, O'Driscoll et al. found that lower levels of structure in the work environment were positively related with higher levels of employee-felt ownership for both the job and the organisation. Each of the work environment-structuring variables, namely autonomy, technology, and participative decision-making,

had a positive and significant relationship with both dimensions of psychological ownership. They further found that job- and organisation-based psychological ownership had a positive association with affective commitment to the organisation.

The core differences between organisation-based and job-based psychological ownership are summarised in Table 2.3.

Table 2.3: Differences between organisation-based and job-based psychological ownership

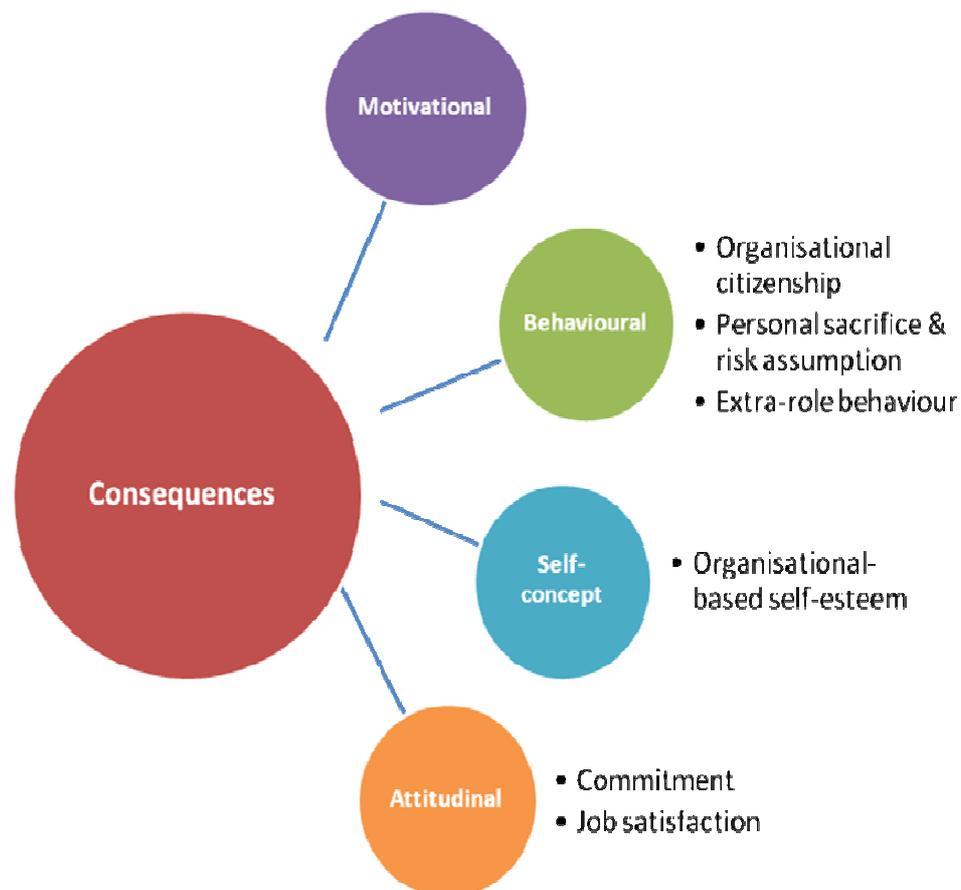
Organisation-based psychological ownership	Job-based psychological ownership
Employees' feelings of possession and psychological connection to the organisation as a whole	Employees' feelings of possession toward their particular jobs
Influenced by: <ul style="list-style-type: none"> • Corporate goals and vision • Policies and procedures • Organisational culture and climate • Reputation of the organisation • Attitudes of senior management • Autonomy • Technology • Participative decision making 	Influenced by: <ul style="list-style-type: none"> • Autonomy • Technology • Participative decision making
Related to: <ul style="list-style-type: none"> • Affective organisational commitment • Job satisfaction 	Related to: <ul style="list-style-type: none"> • Affective organisational commitment • Job satisfaction
Partially mediate the relationship between autonomy and organisational commitment	Partially mediate the relationship between autonomy and job satisfaction

Organisations can increase the link between job-based and organisation-based ownership by ensuring that employees understand the importance of their roles and jobs within the organisation. Trevor-Roberts and McAlpine (2008, p. 33) state that “creating a sense of ownership among employees for the organisation and their jobs has the potential to increase staff retention and productivity”. In this study the focus is on psychological ownership for the organisation.

2.11 THE CONSEQUENCES OF PSYCHOLOGICAL OWNERSHIP

Positive attitudes toward the target, enhanced self-concept, and a sense of responsibility are the three fundamental outcomes associated with feelings of possession (Furby, 1978). Van Dyne and Pierce (2004) suggest that this sense of possession (which allows individuals to satisfy their basic needs for efficacy and effectance, self-identity, and place) is key to work-related attitudes, self-concept, and behaviours. Psychological ownership, thus, are associated with positive motivational, attitudinal and behavioural consequences. The consequences of psychological ownership that will be discussed are depicted in Figure 2.8.

Figure 2.8 Consequences of psychological ownership



(Author's own)

2.11.1 A positive side to psychological ownership

Pierce et al. (1991) have theorised that psychological ownership has positive consequences regardless of the organisational member's financial ownership and the member's legal status as owner or non-owner. Pierce and his colleagues propose that psychological ownership would be associated with positive behavioural and psychological consequences, and that these relationships would hold even for members without an equity ownership position.

2.11.1.1 Motivational consequences

Many scholars (Long, 1978; Webb, 1912) illustrated that motivational consequences are associated with ownership. Based upon empirical evidence, Pierce et al. (1991) employ expectancy theory to make a connection between ownership and social-psychological and behavioural effects. The growth, success and survival of the organisation will logically enhance the value of an employee's ownership share. Decline and failure of the organisation will put the employee-owner in a position of risk. Therefore, the growth, success and survival of the organisation will most likely become critical and valued outcomes for the employee-owner. The employee's perception of gain and losses associated with his/her current or future equity, as well as the employee's influence and personal rights, may have a motivational effect. Employee motivation will be enhanced by the combined impact of ownership on expectancy perceptions, cooperative behaviour, work group norms, and peer pressure as Bernstein (1979, p19) found in his study of the plywood cooperatives: "When the mill is your own, you really work hard to make a go for it." "Everyone digs right in – and wants the others to do the same. If they see anybody trying to get a free ride, they get on his back right quick". Pierce et al. (1991) argued that the more the employee-owner identifies with the organisation and becomes integrated in the ownership experience, the level of experienced meaningfulness of work and an enhanced sense of responsibility for work and organisational outcomes will increase, which in turn will effect motivation in a positive manner.

Koironen (2007) notes that intrinsic motivation may be either consumptive or investive. If ownership in itself brings immediate satisfaction, it is consumptive. If ownership will contribute to future satisfaction, it is investive. According to her, intrinsic motivation can play an important role in psychological ownership. Koironen adds that the motivation for ownership is the value attached to what its outcome brings. The outcome may be both financial and emotional in nature. The ownership as such, with its responsibilities, duties and risks, is not necessarily regarded as motivating, but the outcomes of ownership, extrinsic or emotional rewards create motivation.

2.11.1.2 Behavioural consequences

- **Organisational citizenship behaviour**

Organ (1988) defines citizenship behaviour as behaviour that contributes to the community's or organisation's well-being, is voluntary and is intended to be positive in nature, but is not part of formal job expectations. Burke and Reitzes (1991) state that behaviour is, in part, a function of the individual's self-identity, as people create and maintain their sense of self by initiating stable patterns of behaviour that infuse roles with personal meaning. Therefore, when individuals feel ownership for a social entity (e.g., group, family, organisation), they will probably engage in citizenship behaviours towards that entity. Van Dyne and Pierce (2004) suggest that when employees feel that the organisation contributes to their basic needs, they reciprocate by making positive, proactive contributions to the organisation.

In their study, Van Dyne and Pierce found that psychological ownership of the organisation predicts organisational citizenship over and above the two most commonly researched predictors of citizenship, namely commitment and satisfaction. Olzer et al. (2008) reported that in their study, psychological ownership variables account for 31.8% of the changes in the organisational citizenship behaviours. VandeWalle et al. (1995) found a positive link between psychological ownership of the job and organisational commitment and citizenship behaviours. Avey et al. (2009) have found empirical

evidence between both types of organisational citizenship behaviours (individual and organisational) and psychological ownership.

Managerial implications

Pierce et al. (2001) suggest that organisations that want to encourage attitudes of job-related ownership among their employees should consider altering their working conditions, relaxing rigid supervision and control and promoting more employee participation, autonomy and personal control over their job performance.

- **Personal sacrifice and the assumption of risk**

According to Pierce et al. (2003), an important outcome of psychological ownership is that individuals are prepared to take personal risks or make personal sacrifice for a social entity. Normally these types of behaviour are typical of people employed in fire-fighting organisations, the military, police and rescue teams, but in that case they are necessary and also take place in situations where they are not compulsory. Members who are willing to come forward and “blow the whistle” (e.g., report illegal acts and unethical behaviour) are taking personal risks and making a sacrifice for the well-being of their organisations. Pierce et al. propose that this type of behaviour will be caused by feelings of ownership for the target (e.g., the organisation). According to Pierce et al. (2003, p. 29) “it is, after all, the situation where the target has been brought into the citadel of the self, and its impairment results in a diminution of the self”. Therefore, individuals will take on the risk of “blowing the whistle” when they become aware of events that are harmful to the welfare of their organisation.

- **Extra-role behaviour**

Extra-role behaviour is discretionary behaviour that is external to formal employment conditions and is undertaken with the belief that such behaviour will result in positive outcomes for the organisation (VandeWalle et al., 1995).

According to Mayhew et al. (2007), researchers have found evidence that psychological ownership produces increases in extra-role behaviours. The study conducted by VandeWalle et al. (1995) indicates that psychological ownership is a more potent antecedent of extra-role behaviour (constructive work efforts that benefit the organisation and go beyond the required work activities) than is satisfaction. According to them, the differential strengths of the relationship between psychological ownership and extra-role behaviour compared with those of satisfaction and extra-role behaviour suggest that managers might benefit by paying more attention to creating a sense of psychological ownership than trying to increase employee satisfaction.

On the basis of Van Dyne et al.'s (1995) typology of extra-role behaviour, Mayhew et al. (2007) propose that it is important to examine two specific dimensions of extra-role behaviour rather than a single global measure. Instead of focusing on prohibitive behaviours such as stewardship and whistle-blowing, Mayhew et al. (2007) decided to rather focus on the two types of positive behaviour, namely helping and voice, because they were more interested in the positive consequences of psychological ownership than the negative.

According to Van Dyne and LePine (1998), helping extra-role behaviour on the one hand refers to promotive behaviour that is supportive and facilitates working relationships, while voice extra-role behaviour on the other hand consists of constructive expression aimed at continuous organisational improvement. Mayhew et al. (2007) speculate that employees that feel ownership towards the organisation and their job might feel motivated to sustain cordial relationships and they might feel that they have the right to offer suggestions for change to make overall performance possible. Mayhew et al., however, found no relationship between job-based or organisation-based psychological ownership and helping or voice extra-role behaviour. Although previous research (VandeWalle et al., 1995) supported the relationship between organisation-based psychological ownership and general extra-role behaviour, Mayhew and colleagues found that the effects were not consistent when they examined the specific types of promotive discretionary behaviour of helping and voice extra-role behaviour.

According to Bernstein (1976), ownership encourages a sense of pride in employees and acts as a motivator for better performance. Numerous scholars have explored the effects of ownership on organisational performance, and contradictory results have been provided. For example, neither Conte and Tannenbaum (1978) nor Tannenbaum, Cook, and Lohmann (as cited in Pierce et al., 1991) found significant positive relationships between ownership and profitability. In contrast, Wagner and Rosen (as cited in Pierce et al., 1991, p. 136) found that “employee-owned companies did substantially better than similar non-employee-owned companies in terms of sales growth, operating margin, return and equity, and book value per share growth”. Marsh and McAllister (1981) and Rosen and Klein (1983) reported that organisations with employee stock ownership systems grew more quickly than their industrial averages. Berman (as cited in Pierce et al., 1991, p. 136) states that “the basis for cooperative success is the superior productivity of member-workers ... [in terms of] physical volume of output per man-hour, quality (grade and value of product), and economy of material and equipment used”. Although the existing literature offers mixed results, Blasi (1988, p. 231) points out that “there is no evidence that employee ownership hurts companies”.

Van Dyne and Pierce (2004) propose that when the three basic human motives (efficacy and effectance, self-identity, and having a place) are fulfilled in an organisational context, employees will be proactive in protecting and enhancing the target of their feelings of ownership. As a result, employees should be proactive in making behavioural contributions to the organisation. According to Gouldner (as cited in Van Dyne & Pierce, 2004), employees will be motivated to reciprocate when organisations provide them with a valued sense of efficacy and effectance, sense of self-identity, and sense of belonging. Van Dyne and Pierce found a significant positive relationship between organisational ownership and employee performance. Mayhew et al. (2007) also expected that psychological ownership would encourage employees to perform at high levels. According to Wagner et al. (2003), ownership beliefs are positively related to employees’ attitudes toward the organisation. On the basis of data from a large retail organisation, they found a positive correlation between ownership behaviours and financial performance. Thus it seems likely that employee ownership plans encourage employees to think and act like owners, and this enhances

organisational performance.

2.11.1.3 Self-concept

- **Organisation-based self esteem**

According to Pierce, Gardner, Cummings, and Dunham (1989), an important self-construct in organisations is organisation-based self-esteem. Organisation-based self-esteem is an individual's self-concept as a member of the work organisation. Pierce et al. (1989) state that it is a special sense of self that emerges from organisational experiences and that reflects employee evaluations of personal adequacy and self-worth within the organisational context.

The psychology of possession suggests that when individuals develop a sense of ownership of the organisation, these feelings of ownership become an extension of the self (Furby, 1978). According to Dittmar (1992) and Porteous (1976), possessions can symbolise the self and can show core values. Korman (2001) proposes that both tangible and intangible psychologically experienced possessions become positive expressions of the self and serve the basic needs for self-identity and self-enhancement. Van Dyne and Pierce (2004) hypothesise that when employees feel that the organisation is their personal psychological property, they will have positive self-assessments of themselves as members of the organisation. They empirically found that psychological ownership for the organisation significantly improved to the prediction of organisation-based self-esteem beyond the effects of organisational commitment and job satisfaction.

2.11.1.4 Attitudinal consequences

- **Organisational commitment**

Pierce et al. (2001) argue that feelings of ownership are pleasure-producing in and of

themselves, and as a result, organisational members will want to maintain their relationship with that which produces this positive affect. They further propose that as employee-owners develop feelings of ownership of the organisation, they become more and more integrated into the organisation. This integration reveals itself, in part, through an attachment to the organisation and the desire to maintain that relationship (VandeWalle et al., 1995).

O’Driscoll et al. (2006) suggest that psychological ownership leads to the type of organisational attachment that Meyer and Allen (1991) refer to as affective commitment. Affective commitment is based on a sense of identity with the organisation, its values and its goals, and is reflected in feelings of belongingness and wanting to be attached to the organisation.

VandeWalle et al. (1995) found a positive link between psychological ownership and organisational commitment. Van Dyne and Pierce (2004) examined the relationship between psychological ownership and organisational commitment in two organisations and reported that psychological ownership for the organisation increased variance in commitment. O’Driscoll et al. (2006), Mayhew et al. (2007) and Avey et al. (2009) have confirmed a strong association between affective organisational commitment and psychological ownership of the organisation. VandeWalle et al. (1995) reported that organisational commitment mediates the effects of psychological ownership on extra-role behaviour. Therefore, psychological ownership makes a difference because possessive feelings toward the organisation (psychological ownership) lead to an increase in organisational commitment; committed employees will engage in extra-role behaviour; and extra-role behaviour will contribute to higher performance

- **Job satisfaction**

Weiss and Cropanzano (1996) state that general satisfaction refers to the overall situation in the workplace, while job satisfaction is a more specific evaluation of a particular job. Van Dyne and Pierce (2004) propose that feelings of being an important

part of the organisation, thus psychological ownership, enhance general satisfaction and provide a context for job satisfaction. An employee who has a positive attitude towards the organisation and work experiences is more likely to report positive job satisfaction.

As we have seen, according to the theory of psychological ownership, a sense of possession directed toward the organisation satisfies three basic human motives, namely efficacy and effectance, self-identity, and having a place ('home') and produces positive evaluative judgments (Pierce et al., 2003). This is supported by possession research that demonstrates that people develop favourable evaluations of their possessions (Beggan, 1992) and judge owned objects more favourably than similar, un-owned objects (Nuttin, 1987). Therefore, Van Dyne and Pierce (2004) argue that when employees feel possessive toward the organisation (they have influence and control at work, intimate knowledge about the organisation, and feel they have invested themselves in their organisational roles), they should experience high levels of satisfaction, which in turn should influence job satisfaction. Pierce et al. (1991), Buchko (1993), VandeWalle et al. (1995), Van Dyne and Pierce (2004), Mayhew et al. (2007) and Avey et al. (2009) have provided empirical evidence of a positive relationship between psychological ownership and job satisfaction.

In their study, VandeWalle et al. (1995) proofed that psychological ownership is a more potent antecedent of extra-role behaviour than satisfaction and that psychological ownership therefore be considered as an important antecedent of extra-role behaviour. The differential strength between psychological ownership and extra-role behaviour and satisfaction and extra-role behaviour suggest that it might benefit managers more to pay more attention to creating a sense of psychological ownership than trying to increase satisfaction. The difference is consistent with the theoretical position of Pierce et al. (1991) that possession and the resulting sense of responsibility are core characteristics of psychological ownership that differentiates it from other constructs that concern the relationship between organisations and their members.

Managerial implications

Van Dyne and Pierce (2004) suggest that managers pay special attention to employee feelings of ownership when employee attitudes (commitment, job satisfaction, organisation-based self-esteem), and discretionary behaviours (such as organisational citizenship) are critical to work effectiveness. For example, a sense of ownership may be essential for supervisory employees with unrestricted responsibility for decision making and for service employees with direct customer contact. In these situations, managers may want to design work that allows employees the opportunity to exercise control, acquire knowledge, and personally invest in their work (Pendleton, Wilson & Wright, 1998; Pierce et al., 1991), hence facilitating positive feelings of possession.

2.11.1.4 Mixed effects

Feelings of ownership might have a number of negative as well as positive effects. For instance, they may lead to either promotion of or resistance to change.

- **Organisational change**

Dirks et al. (1996), in their psychological theory of change, argue that psychological ownership provides insight into why, and the conditions under which, individuals both promote and resist change. According to Dirks et al., there are three categorisations of change: self-initiated versus imposed; evolutionary versus revolutionary; and additive versus subtractive, each of which has different psychological implications. Depending on the strength of their feelings of ownership for the target of change, individuals may feel positive about some types of change and resist other types. When the change is self-initiated (because it supports the individual's need for control and efficacy), evolutionary (because it strengthens the individual's sense of self-continuity), and additive (because it contributes to the individual's need for control, self-enhancement, and feelings of personal efficacy), individuals will very probably promote change in a target towards which they feel ownership. However, individuals will almost certainly

resist change of a target of psychological ownership when the change is imposed (because it is seen as threatening the individual's sense of control), revolutionary (because it is a threat to self-continuity), and subtractive (because it takes away from or diminishes the core of that to which the individual has attached him/herself).

In sum, Pierce et al. (2001) propose that when change is self-initiated, evolutionary, and additive, employees' psychological ownership toward the organisation or organisational factors results in promotion of change; when change is imposed, revolutionary, and subtractive, employees' psychological ownership results in resistance to change.

Managerial implications

As proposed by Dirks et al. (1996), exceptionally high psychological ownership can instigate resistance to change and lead to low cooperation. Van Dyne and Pierce (2004), warned that during changeovers managers should be especially aware of psychological ownership and should put emphasis on overall shared ownership rather than individual feelings of possession for a specific job. Their research further suggests that managers should be aware that low psychological ownership can decrease discretionary behaviour. This may be particularly applicable to supervisory employees and service employees with direct customer contact and decision-making responsibility, since low psychological ownership may have negative repercussions for quality and customer satisfaction. In circumstances like this, managers may need to engage and relocate employees to different jobs, redesign jobs to place less emphasis on discretionary behaviour, or try to arrange the work in such a manner that there will be increased opportunities for employees to exercise control over different targets, to create intimate knowledge of the targets, to be in regular and close association with the targets, and to be able to make significant personal investments in the targets.

2.11.2 The dark side of psychological ownership

Unfortunately, psychological ownership may lead to other dysfunctional organisational

behaviours. According to Pierce et al. (2001), rather like an over-possessive child, an employee may resist sharing or be unwilling to share the target of ownership (tools, computers, work-space) with co-workers, or may want to retain exclusive control over the target. This type of behaviour, in turn, will probably impede teamwork and cooperation. Similarly, managers, for example, may resist interventions that empower their subordinates because they feel a high degree of ownership toward the management of the work unit. This may inhibit the implementation of employee involvement programmes, such as self-managed work teams or quality circles that require managers to delegate authority and to share information and control.

According to Robinson and Bennett (1995), deviant behaviours are another possible outcome of psychological ownership. This type of behaviour leads to violation of organisational norms and puts the well-being of the organisation and its members at risk. Individuals who are separated against their will from that for which they feel strong ownership (e.g., due to a restraining order, lay-offs, divorce), may engage in destructive acts such as sabotage, stalking, destruction, or physical harm to prevent others from gaining control, coming to know, or immersing themselves in the target of ownership. They further propose that psychological ownership may also be associated with personal functioning difficulties.

At times the feelings of ownership can cause an individual to feel devastated by the burden of responsibility. Bartunek (1993) suggests that when people witness extreme change in targets toward which they feel strong ownership, they may come to feel personal loss, frustration, and stress. According to James (1890, p. 178), the loss of possessions can lead to “the shrinkage of our personality,” or even to sickness and giving up the will to live in extreme cases (Cram & Paton, 1993).

According to Pierce et al. (2003), psychological ownership will not necessarily lead to dysfunctional effects, but it may lead to such effects, if certain conditions are in place. They also foresee that some of these conditions will be related to certain personality characteristics (e.g., high need for personal control, authoritarian personality), as well as to the combination of the particular motives and “routes” that have led to the feelings of ownership. Consider, for example, the attitudes held by an employee who feels

ownership for the organisation arrived at through involvement in the organisation's participative management system. Pierce et al. (2003) suggest that these attitudes will be more negative (dysfunctional) when the primary motive for experiencing ownership has been efficacy and effectance and the "route" to ownership has been control, than when the primary motive has been identity and the primary "route" has been intimate knowing (association).

2.11.3 Summary

Pierce and colleagues (2001) admit that in certain circumstances psychological ownership can work to the detriment of organisational goals. Possessive employees may, for instance hold onto authority to the extent of refusing to delegate and share information; obstruct moves towards participative management, teamwork, and cooperation, or even employ sabotage or show other deviant behaviour. The employees themselves may suffer from frustration, stress and alienation.

Management can probably in part forestall the expression of the "dark side" of psychological ownership by, according to Pierce et al. (2009), encouraging a possessive employee to "share" feelings of ownership jointly with a group of colleagues whom the individual trusts and with whom he or she has a close and mutually dependent working relationship. This shared ownership among interdependent co-workers may, according to Pierce et al.: (1) promote sharing of the owned object, thereby reducing "selfish and controlling behaviour"; (2) decrease an individual's fear that others will infringe on the owned target, and the jealousy and anger resulting from this fear; (3) cushion the individual from the disturbing effects of any loss, destruction, or change imposed upon the owned object; and (4) relieve the possessive individual of the burden of carrying assumed exclusive personal responsibility for the target of ownership.

2.12 AN INTEGRATED MOTIVATIONAL MODEL OF PSYCHOLOGICAL OWNERSHIP

A baseline motivational model as proposed by Roodt (2004) has been applied to this study for explaining the state of psychological ownership. According to this model, action (behaviour) is triggered by salient needs, followed by salient values and then by salient goals. All the components are moderated by cognitive processes (including instrumental perceptions), while goals and intentions are specifically influenced by emotional (affective) content. Therefore, specific instrumental actions would lead to salient need satisfaction and if successful, also to a positive emotional state. Positive emotions would act as feedback to assess future values and goals for their need satisfaction potential. All these will lead to a specific state/level of psychological ownership that will result in either positive or negative behaviours. The proposed model is displayed in Figure 2.9 and will be discussed briefly.

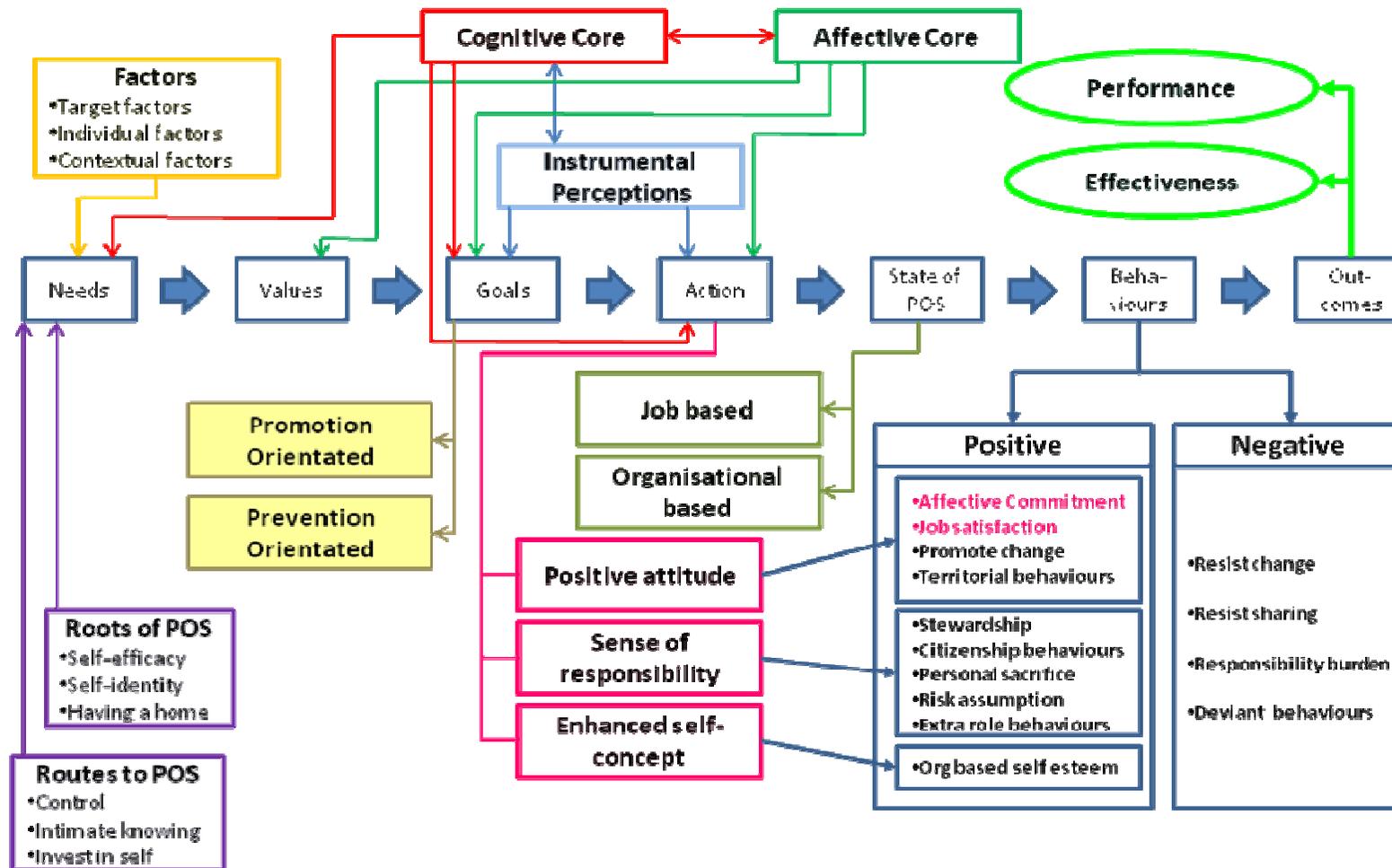
2.12.1 Needs

Psychological ownership exists because it satisfies three basic human needs: *efficacy and effectance*, *self-identity*, and *having a place*. Individuals can develop feelings of ownership for a variety of objects as long as these objects allow these motives to operate and be satisfied. These motives have been discussed in detail in paragraph 2.6.

2.12.2 Routes to psychological ownership

There are three major routes or paths through which feelings of ownership for a particular object emerge: *control over the target*, *intimate knowing of the target* and *investment of the self into the target*. Thus, when employees exercise greater amounts of control, intimately come to know, and invest themselves in the target of ownership a sense of responsibility takes root and possessive feelings develop. These “routes to” psychological ownership have been discussed in detail in paragraph 2.7.

Figure 2.9: Motivational Model for Psychological Ownership



(Author's own, based on Roodt, 2004)

2.12.3 The cognitive and affective core of psychological ownership

Pierce et al. (2003) have noticed that psychological ownership (the feeling that something is “*mine*” or “*ours*”) comprised of a cognitive and affective core. The cognitive aspect reflects individual’s awareness, beliefs and thoughts regarding the target of ownership. This cognitive state is coupled with an emotional or affective sensation. Feelings of ownership are said to be pleasure producing in themselves (Beggan, 1992; Furby, 1978; Porteous, 1976) and give the owner a feeling of efficacy and competence (White, 1959). Psychological ownership consists thus, in part, of an emotional attachment to the organisation that transcends the mere cognitive evaluation of the organisation.

2.12.4 Factors influencing psychological ownership

There are several factors that influence the emergence of psychological ownership. The potential for the development of psychological ownership resides in both the target and the individual, and its emergence and manifestation is also strongly influenced by situational forces. These factors have been discussed in detail in paragraph 2.8.

Target factors Viable targets whose attributes can facilitate the acts of controlling, coming to know, and or investing the self in the target (i.e., the “routes to” psychological ownership) will influence the degree to which an individual develops feelings of ownership of that target. Targets with characteristics such that they satisfy the motives of efficacy and effectance, self-identity, and/or having a place (i.e., the “roots of” psychological ownership) will also enhance feelings of psychological ownership.

Individual factors There will be differences as to the strength of the motives, both across individuals and within an individual over time, and personality will have an influence as well. Personality traits will affect how motives are expressed in behaviour. Personal values make certain objects more-or-less esteemed. Individuals are likely to

feel ownership over those objects considered to be most important according to their values.

Process factors The process by which psychological ownership emerges is thus associated with a complex interaction between the “roots”, the “routes”, target factors, and individual factors. The three roots of psychological ownership (i.e., efficacy and effectance, identity, and having a home) are not totally independent of one another. Ownership may emerge as the result of any one, or any subset, of these needs. The three routes to psychological ownership (i.e., control, intimate knowing, and investment of self) are also complementary, additive and distinct in nature. Any single route may result in feelings of ownership independently of the others.

Contextual factors Although a wide variety of contextual elements will have an effect on the emergence of psychological ownership, the main focus in this review was on two aspects namely, structural and cultural aspects. It was found that *structural aspects* of the context such as norms, rules, laws, and hierarchy may promote or prevent individuals from developing feelings of ownership, and that *cultural aspects* also have a significant influence on the phenomenon.

Therefore, the state of psychological ownership, while potentially latent within each individual, does not necessarily always occur and is not equally strong across individuals, targets and situations. Psychological ownership is determined by a complex interaction of a number of intra-individual, object-related, and contextual factors.

2.12.5 Goals

According to Liberman et al. (1999) theory distinguishes between two major categories of desired goals: those related to advancement and growth and those related to safety and security. People thus have two self-regulatory systems that are concerned with acquiring either nurturance or security. Individual’s self-regulation in relation to their hopes and aspirations (ideals) satisfies nurturance needs. The goal is accomplishment,

and the regulatory focus is promotion. On the other hand, Individual's self-regulation in relation to duties and obligations (oughts) satisfies security needs. The goal is safety, and the regulatory focus is prevention. Both promotion and prevention motivations are important for survival of the human being and the one approach is not necessarily more desirable than the other. These two approaches have been applied to examining psychological ownership by Avey et al. (2009). Psychological ownership comprise thus two forms: promotion-orientated and prevention-orientated psychological ownership. This has been discussed in more detail in paragraph 2.9.

2.12.6 Action (behaviours).

Positive attitudes toward the target, enhanced self-concept, and a sense of responsibility are the three fundamental outcomes associated with feelings of possession (Furby, 1978). Ownership is also frequently defined and experienced in terms of a "bundle of rights". Ownership is associated with the right to information about the target of ownership and the right to have a voice in decisions that impact the target. However, for every right of ownership, there is a balancing responsibility.

Van Dyne and Pierce (2004) suggest that this sense of possession (which allows individuals to satisfy their basic needs for efficacy and effectance, self-identity, and place) is key to work-related attitudes, self-concept, and behaviours. Psychological ownership, thus are associated with positive motivational, attitudinal and behavioural consequences.

2.12.7 State of Psychological ownership

Specific instrumental actions would lead to salient need satisfaction and if successful, also to a positive emotional state. Positive emotions would act as feedback to assess future values and goals for their need satisfaction potential. However, the inability of a particular focus to satisfy salient needs will result in low psychological ownership. Psychological ownership can be conceptualised as different levels on a continuum,

ranging from alienation to extreme psychological ownership that will result in either positive or negative behaviours.

Individuals might develop feelings of psychological ownership toward various organisational targets, such as organisations themselves, jobs, work space, work tasks, work tools and equipment, ideas or suggestions, and even team members. Two distinct types of psychological ownership: *organisation-based psychological ownership* and *job-based psychological ownership* have been identified (Mayhew et al., 2007). These two distinctive types have been discussed in detail in paragraph 2.10. The focus of this study will be on organisational psychological ownership.

2.12.8 Consequences of Psychological ownership

The outcomes of psychological ownership will result in either positive or negative behaviours. Psychological ownership has been associated with:

- greater commitment to the organisation (VandeWalle et al., 1995);
- greater accountability (VandeWalle et al.);
- greater job satisfaction (Avey et al., 2009; Buchko, 1993; Mayhew, et al., 2007; Pierce et al., 1991; VandeWalle et al.; Van Dyne & Pierce, 2004);
- better organisational performance (Van Dyne & Pierce; Wagner et al., 2003);
- better organisation-based self-esteem (Avey et al. ; VandeWalle et al.; Van Dyne & Pierce)
- more effort on the part of the individual to engage in organisational citizenship behaviours (Avey et al. ; VandeWalle et al.; Van Dyne & Pierce).
- increase in extra-role behaviour (VandeWalle, et al.) – meaning that individuals with higher levels of psychological ownership are more likely to engage in extra-role behaviour (constructive work efforts that benefit the organisation and go beyond the required work activities).
- intention to stay in the organisation (Avey et al., Buchko)

Scholars (e.g., Dirks, Cummings & Pierce, 1996; Kostova, 1998; Pierce et al., 2001) have further discussed the causal relationship between psychological ownership and resistance to organisational change, feeling of responsibility, and willingness to take personal risks and make personal sacrifices. Unfortunately, psychological ownership may lead to other dysfunctional organisational behaviours. Deviant behaviours are another possible outcome of psychological ownership that will lead to violation of organisational norms. However, according to Pierce et al. (2003) psychological ownership will not necessarily lead to dysfunctional effects, but it may lead to such effects, if certain conditions are in place. The consequences of psychological ownership have been discussed in detail in paragraph 2.11.

2.12.9 Outcomes

It is likely that employee ownership will encourage employees to think and act like owners and this will enhance organisational performance and effectiveness.

2.12.10 Summary

This baseline motivational model can therefore be applied for explaining psychological ownership because the model clearly distinguishes between the antecedents, the consequences of psychological ownership and the state of psychological ownership itself.

In order to develop a measuring instrument, the dimensions needed to define the construct of psychological ownership need to be identified. This will be discussed in the following section.

2.13 PSYCHOLOGICAL OWNERSHIP AS A MULTIDIMENSIONAL CONSTRUCT

2.13.1 Defining a multidimensional construct

According to Law et al. (1998, p. 741), a construct is multidimensional when it “consists of a number of interrelated attributes or dimensions and exists in multidimensional domains”. Thus, the dimensions of a multidimensional construct can be conceptualised under an overall concept. It is therefore theoretically meaningful and parsimonious to use this overall concept as a representation of the dimensions. A necessary condition for a concept to be defined as multidimensional in nature is that the relations between the overall construct and its dimensions must be clearly specified (Law et al., 1998). If these relations cannot be defined, the various dimensions are simply seen as a collection of related variables, and therefore there would be no need to label them as components of a multidimensional construct.

Law et al. (1998) propose a taxonomy of multidimensional constructs. They define three models of multidimensional construct: a *latent model*, an *aggregate model* and a *profile model*. Law and colleagues argue that these three models of multidimensional constructs should theoretically be determined by two evaluation criteria, namely *relational level* and *relational form*.

Relational level indicates whether the multidimensional construct exists at the same level as its dimensions, as a combination of its dimensions or whether it exists at a deeper level than its dimensions. Each dimension of the multidimensional construct is a different manifestation of the construct, which implies that the overall construct leads to the dimensions. Under this condition the multidimensional construct is classified as a higher-level construct underlying its dimensions. Multidimensional constructs in this category are labelled *latent models*.

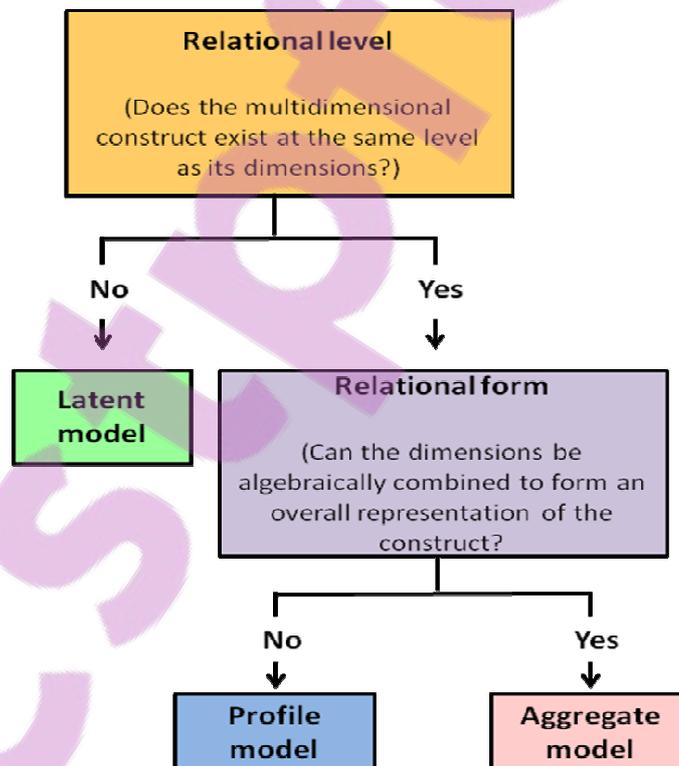
Relational form indicates whether the dimensions of the multidimensional construct can be algebraically combined to form an overall representation of the construct. The overall

construct is thus formed from its dimensions. Under this condition the multidimensional construct does not exist at a deeper conceptual level than its dimensions. Constructs that belong to this category are labelled *aggregate models*.

If levels of the multidimensional construct are determined by profiling levels of each of the dimensions, the constructs are labelled *profile models*. A profile multidimensional construct is not a single theoretical overall construct that summarises and represents all the dimensions, but it can be interpreted only as a set of profiled characteristics of the dimensions.

A diagrammatic representation of the two criteria and the three resulting models of multidimensional constructs are shown in Figure 2.10.

Figure 2.10 Proposed taxonomy of a multidimensional construct



Source: Law et al., 1998, p. 743

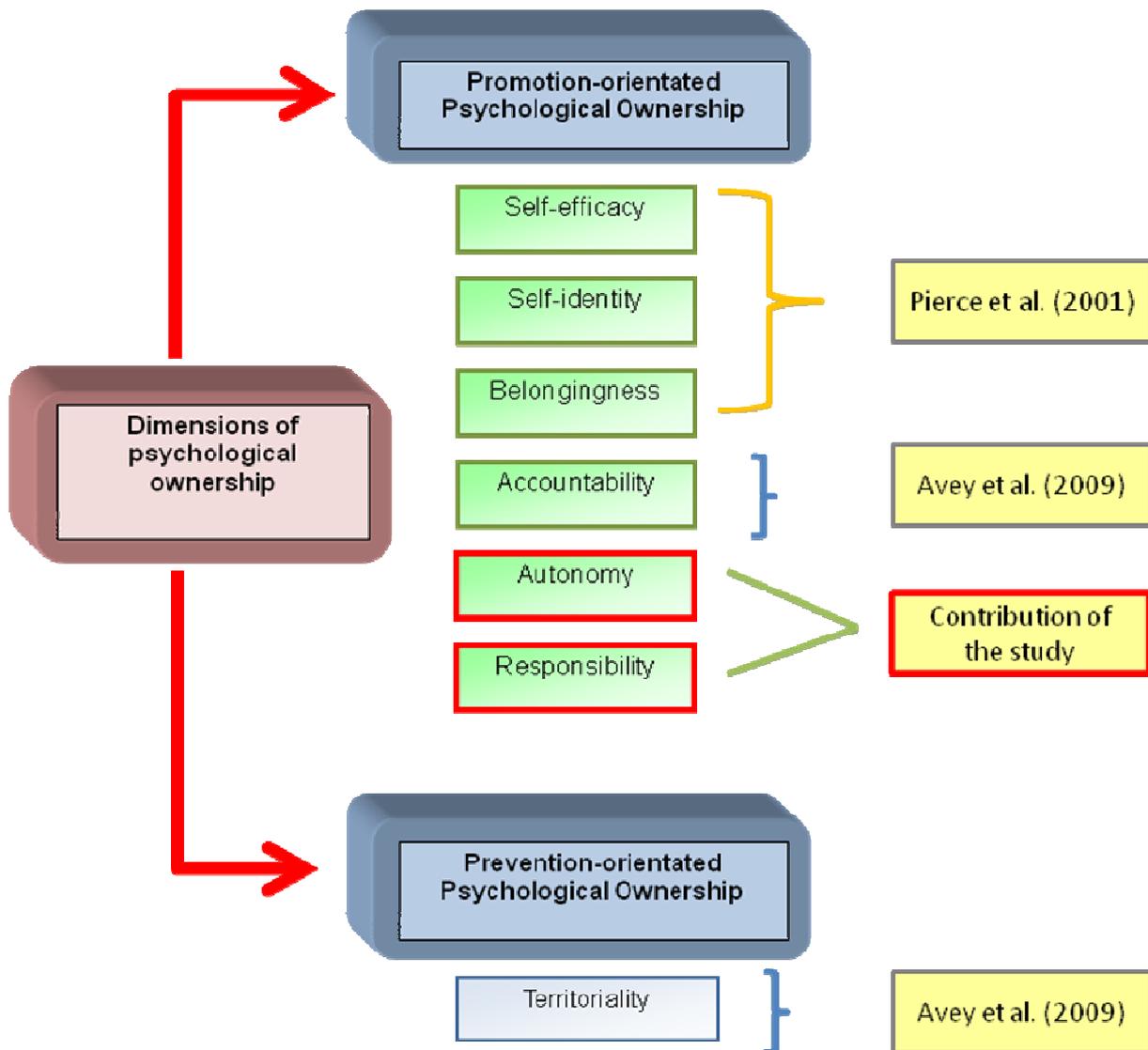
2.13.2 Psychological ownership as a multi-dimensional construct

Building on the three recognised dimensions of psychological ownership: *self-efficacy*, *self-identity* and *having a place* (belonging) of Pierce et al. (2001), Avey and colleagues (2009) posited two additional concepts of psychological ownership, *territoriality* and *accountability*, and developed a five-dimensional measure of psychological ownership. Avey et al. admit that a limitation of their instrument may be the comprehensiveness of the dimensions used to represent psychological ownership, and therefore the concepts of *responsibility* and *autonomy* are posited as additional aspects of psychological ownership.

Avey et al. (2009) also distinguish between two forms of psychological ownership, namely *promotion-orientated* and *prevention-orientated* psychological ownership. Promotion-orientated psychological ownership consists of four theory-driven components: self-efficacy, sense of belonging, self-identity with the target, and accountability. Territoriality was identified as a dimension of a preventative form of psychological ownership.

The multi-dimensional construct of psychological ownership and its proposed dimensions are displayed in Figure 2.11 and will be discussed in more detail.

Figure 2.11: Psychological and its proposed dimensions



(Author's own)

- **Promotion-orientated psychological ownership**

Self-efficacy, self-identity and sense of belonging Psychological ownership emerge because it satisfies both generic and socially generated motives of individual human beings. These motives are as follows:

(1) *Self-efficacy*: this means that it is important for an individual to be in control. The possibility of being in control, being able to do something with regard to the environment and being able to effect a desirable outcome of actions; these are important factors in creating psychological ownership.

(2) *Self-identity*: people use ownership for the purpose of defining and expressing their self-identity to others, which includes coming to know oneself, expressing the self to others, and maintaining continuity in the self.

(3) *Sense of belonging*: this motive arises from the need to have a certain own area, “a home”. This includes both actual places and objects. This familiar “area” of known targets becomes a part of the object’s identity.

These motives have been discussed in detail in paragraph 2.6.

Accountability A close relationship exists between experienced responsibility and feelings of stewardship, where individuals feel responsible as the caretakers of a property, even though they are not legal owners. Davis, Schoorman, and Donaldson (1997) propose that in certain situations where individuals feel like stewards, they will be motivated to act in the best interest of the principals rather than in their personal interests. Therefore, Pierce et al. (2003) suggest that when individuals feel psychological ownership, they may feel as though they are the “psychological principals” or stewards and may act accordingly. According to Fairholm (2001), accountability has been defined metaphorically as stewardship.

Lerner and Tetlock (1999, p. 255) define accountability as “the implicit or explicit expectation that one may be called on to justify one’s beliefs, feelings and actions to others”. Being prepared to account for one’s actions implies also the right to hold others accountable for theirs, which is consistent with Pierce et al.’s (2003) description of expected rights and responsibilities. According to Pierce et al., a side benefit that organisations experience from psychological ownership is that a member with high levels of such ownership will act as the conscience of others, so that all team members

make the required contribution in order to achieve their targets of ownership. Empirical evidence for this was found by VandeWalle et al. (1995).

According to Wood and Winston (2007), being “responsible” involves liability to be called to account as the primary cause, motive, or agent of a relationship or duty, or being the cause of or explanation for a given result. Accountability, on the other hand, has to do with accepting responsibility and showing voluntary transparency and answerability. Wood and Winston (2007) point out that it is possible for someone to be responsible without being accountable, because responsibility may be assigned, enforced, or even mistakenly applied to an individual or group by external force.

Autonomy According to Deci and Ryan (as cited in Chirkov et al., 2003), individuals are autonomous when their behaviour is experienced as willingly enacted and when they fully endorse the actions in which they are engaged. People are thus most autonomous when they act in accordance with their authentic interests or integrated values and desires. People who feel they have a measure of control over their working environment can achieve self-determination. In the work context, perceived control relates to employees’ belief that they have autonomy in their job and are allowed to play a part in making decisions on issues that affect their sphere of work (Ashforth & Saks, 2000). Organisations that wish to promote a sense of ownership in their employees should create a working environment that empowers individuals and enables them to exercise control over important aspects of their work (Pierce et al., 2004).

According to Ryan and Deci (2006, p. 1557), the term autonomy literally refers to “regulation by the self.” In 1967, Pfander provided a foundational phenomenology of autonomy. He distinguished self-determined acts (which he described as those reflecting the individual’s will) from other forms of striving or motivation. According to Pfander (1967, p. 20), acts of will are exclusively those experienced “precisely not as an occurrence caused by a different agent but as an initial act of the ego-centre itself”. Ricoeur (1966) supports this by arguing that such acts are those fully endorsed by the

self and therefore in accord with enduring values and interests. Ekstrom (2005) and Kernis and Goldman (2005), in their analyses of autonomy, state that an action is not autonomous unless the self completely identifies with the act and “owns” it. They stress that there must be some underlying unity and congruency to an individual’s actions if they are to be autonomous; they must emerge from the whole self. Finally, these authors state that autonomous acts are not necessarily free from external influences; the key is that the individual must agree to such influences or inputs. Ryan (as cited in Ryan & Deci, 2006) concludes that autonomy is not equivalent to independence.

According to self-determination theory (SDT), people are autonomous when their behaviour is experienced as willingly enacted and when they fully endorse the actions in which they are engaged and/or the values expressed by them (Deci and Ryan (as cited in Chirkov et al., 2003). People are thus most autonomous when the act is in accord with their authentic interests or integrated values and desires. Chirkov et al. state that people often experience a lack of autonomy when they are pressured to do something they do not believe in or to follow social norms with which they do not identify.

Autonomy has several implications. Amabile (1983) and Utman (1997) point out that undermining of autonomy results in a drop in performance, especially when such performance requires flexible, creative, or complex abilities. Promotion of autonomy, on the other hand, frees individuals to experience attachment and intimacy. Knee, Lonsbary, Canevello and Patrick (as cited in Ryan & Deci, 2006) found that the higher the autonomy in a relationship, the greater the satisfaction, relationship stability, and well-being for both partners. According to Ryan and Deci (2006), self determination theory considers autonomy to be a basic psychological need, one with pervasive effects on well-being. In their study, comparing culturally diverse samples from Turkey, South Korea, North America, and Russia, Chirkov et al. (2003) found that autonomous or volitional enactment of cultural practices was equally important in predicting well-being in these culturally diverse samples. Similarly, other studies done by Deci et al. (2001) and Downie, Koestner, ElGeledi and Cree (2004), among non-Western samples, showed the beneficial impact of autonomous motivation on well-being and adjustment outcomes.

Prelinger (1959) provides practical support for the proposition that control is coupled to the behaviour of bringing the controlled object into the domain of the self. He found that the more an individual feels that he or she has control over and can influence an object, the more likely it is that that object will be perceived as part of the self. As we have seen, Pierce et al. (2001) claim there are three major routes (controlling the target, coming to know the target intimately, and investing the self in the target) through which this psychological category is important within the organisational context.

Furthermore, as mentioned before, Deci and Ryan (as cited in Chirkov et al., 2003) argue that people have an intrinsic requirement for self-determination in the working environment, that is, the experience of choice in refusing others. In order to be self-determining, people must perceive that they have control in the working environment. In the work context, according to Ashforth and Saks (2000, p. 313, perceived control refers to “employees’ belief about the extent to which they have autonomy in their job (e.g., freedom to schedule work and determine how it is done) and are allowed to participate in making decisions on issues that affect their task domain”. Researchers (e.g., Parker, 1998; Spector, 1986; Yoon, Han, & Seo, 1996; O’Driscoll & Beehr, 2000) found that the extent to which employees believe they have control is a major determinant of their effective responses such as job satisfaction, work involvement and organisational commitment.

Empirical evidence supports the relationship between autonomy and control, control and psychological ownership, and autonomy and psychological ownership. For example, Brass (1985) observed that employees who were allowed high job-design autonomy felt that they exercised more influence and control than did their counterparts working with low autonomy. In their studies of self-regulated learning strategies, both Tanaka and Yamauchi (2000) and Yamauchi, Kumagai, and Kawasaki (1999) observed a linkage between autonomy and perceived control. Pierce, O’Driscoll et al. (2004) found a positive relationship between job design autonomy and experienced control and between experienced control and psychological ownership. Thus there is a positive relationship between autonomy and psychological ownership. Mayhew et al. (2007)

found that autonomy had both direct and indirect effects on psychological ownership. In accord with the findings of Pierce, O’Driscoll et al., Mayhew et al. (2007) found that because autonomy influences all work attitudes and behaviours, it is regarded as a significant factor in job-related psychological ownership. The unique ability of autonomy to predict organisational commitment, job satisfaction, in-role behaviour, and extra-role behaviour above any mediation effects accentuates the importance of considering autonomy when investigating employees in organisations.

Mayhew et al. (2007) also found that autonomy had direct and indirect effects on psychological ownership and work attitudes. According to Mayhew et al., organisation-based psychological ownership partially mediates the relationship between autonomy and organisational commitment, whereas job-based psychological ownership partially mediates the relationship between autonomy and job satisfaction.

According to O’Driscoll et al. (2006), a less structured work environment will provide employees with the opportunity to exercise control over their actions. These feelings of increased control will be associated with a greater sense of ownership for both the job and the organisation. In their study, O’Driscoll et al. found that lower levels of structure in the work environment were positively related with higher levels of employee-felt ownership for both the job and the organisation. Each of the work environment-structuring variables, namely autonomy, technology, and participative decision-making, had a positive and significant relationship with both dimensions of psychological ownership. They further found that job- and organisation-based psychological ownership had a positive association with affective commitment to the organisation. Therefore, *autonomy* is also posited as a promotion-orientated form of psychological ownership.

Managerial implications

According to Pierce, O’Driscoll et al. (2004), employees’ sense of ownership might be improved by creating and maintaining work settings that empower individuals and allow

them to exercise control over important aspects of their work arrangements, which might promote the manifestation of work-related attitudes (e.g., job satisfaction, organisation-based self-esteem) and behaviours (e.g., nurturing, protecting). Pierce and Gardner (2004) confirm a positive relationship between autonomy at work and positive attitudes and behaviours on the part of the employees.

Responsibility Beaglehole (1932) and Furby (1978) theorise that feelings of possession create a sense of responsibility that influences behaviour. Similarly, Pierce et al. (2001) theorise that feelings of ownership are accompanied by a felt responsibility for the target of ownership and further argue that the implicit right to control associated with ownership leads to a sense of responsibility.

According to Hall (1966), feelings of responsibility will include a responsibility to invest time and energy to advance the cause of the organisation, therefore being protective, caring and nurturing. When an individual's self is closely linked to the organisation, as in the case of psychological ownership, a desire to maintain, enhance and protect that identity results in an enhanced sense of responsibility for work outputs (Kubzansky & Druskat, as cited in Pierce et al., 2003). According to Pierce et al. (2001), several organisational effects, including stewardship, citizenship behaviours, personal sacrifice, and the assumption of risk on behalf of the target are seen as responsibilities and as the outgrowth of psychological ownership. According to Rogers and Freundlich (1998), employees who feel like owners of the organisation believe that they have the right to influence the direction of the organisation and that they have a "deeper responsibility" than those who do not feel ownership. Therefore, *responsibility* is posited as a promotion-orientated form of psychological ownership.

Pierce, Van Dyne and Cummings (as cited in Pierce et al., 2003) found a positive relationship between psychological ownership and experienced responsibility. Coghlan (as cited in Li, 2008) emphasises a positive association between felt responsibility and psychological ownership of the job. In their study, Paré, Sicotte and Jacques (2006) found that responsibility activities related positively to psychological ownership.

- **Prevention-orientated psychological ownership**

Territorial behaviours Organisational members can and do become territorial over tangibles such as physical space and possessions; intangibles, such as ideas, roles, and responsibilities; and social entities, such as people and groups. Brown, Lawrence and Robinson (2005, p. 578) define territoriality as “an individual’s behavioural expression of his or her feelings of ownership toward a physical or social object”. This definition of theirs includes behaviours for constructing, communicating, maintaining and, restoring territories around those objects in the organisation toward which individuals feel proprietary attachment.

This territorial model of Brown et al. (2005) is closely linked to the concept of psychological ownership. As they point out, the concept of territoriality complements the study of psychological ownership by demonstrating the social and behavioural dynamics to which it can lead. Psychological ownership refers to feelings of possessiveness toward a target (object), whereas territoriality refers to behaviours that often arise from such feelings, in order to construct, communicate, maintain or restore the individual’s attachment to such an object. The greater the individual’s psychological attachment to an object, the more the object fulfils the basic needs of efficacy, self-identity and having a place. The fulfilment of these needs means that the territory in question has stronger psychological value to the individual, motivating him or her to communicate it to others (through marking: placing, for example, physical symbols such as a nameplate on the door, pictures of his or her children on a computer screen, and using social markers such as titles or social rituals that convey belonging and access).

The individual will also seek to protect and keep the territory as his or her own (through defending it, by for example using anticipatory defences such as a “private” sign, locking a door, having a large security guard with a gun; and using reactionary defences such as glaring, expressing irritation, yelling and slamming doors, writing a letter of protest). Therefore, Brown and colleagues (2005, p. 580) suggest that “the stronger an

individual's psychological ownership of an object, the greater the likelihood he or she will engage in territorial behaviour toward that object”.

Brown et al. (2005) argue that territoriality has important positive consequences for organisational commitment and the reduction of process conflict. They also, however, note the potential for territoriality to affect organisations negatively by detracting from in-role performance and increasing the isolation among individual members.

Managerial implications

Territoriality is an inherent, inevitable, and prevalent element of organisational life. Brown et al. (2005) in fact suggest that managers, far from discouraging the expression of territoriality, should promote behaviour like marking (to make the boundaries of possession clear to others) and staking claim through personalisation, as these help the employees to feel they have a place in the organisation. This can reduce conflict and help employees to be willing to share resources more efficiently and remain focused on the job. The design and arrangement of physical space in organisations also has implications for territoriality. The recent trend towards open-plan offices with few partitions and little personal space or privacy may appear to save costs. However, the change may cost the organisation more in the end, through a lessening of employee commitment or a potential increase in conflict when employees feel that their personal space is threatened, usurped, or nonexistent. Finally, organisations might consider their policy with regard to workspace personalisation. Some organisations fear that allowing personal displays will compete with organisational identity. Organisations must recognise, however, according to Hogg and Terry (2000), that people will do their best to find a balance between inclusion in the group and individuality. Through marking, employees express themselves in territories and this enables them to participate in and belong to the organisation while maintaining their individuality. Wells (2000) supports this, stating that employees are generally happier if they are allowed to personalise. Therefore, according to Brown et al. (2005), norms and policies that suppress identity-orientated marking may lead to frustration and dissatisfaction of some employees.

2.13.3 Summary

Psychological ownership is therefore a multi-dimensional construct because it exists out of a number of interrelated dimensions. Psychological ownership is thus formed from its dimensions and is therefore labelled as an aggregate model.

2.14 PSYCHOLOGICAL OWNERSHIP AND RETENTION

Another contribution of this study is the role that psychological ownership will play in staff retention. Creating a sense of ownership among employees for the organisation has the potential to increase staff retention.

2.14.1 Retention defined

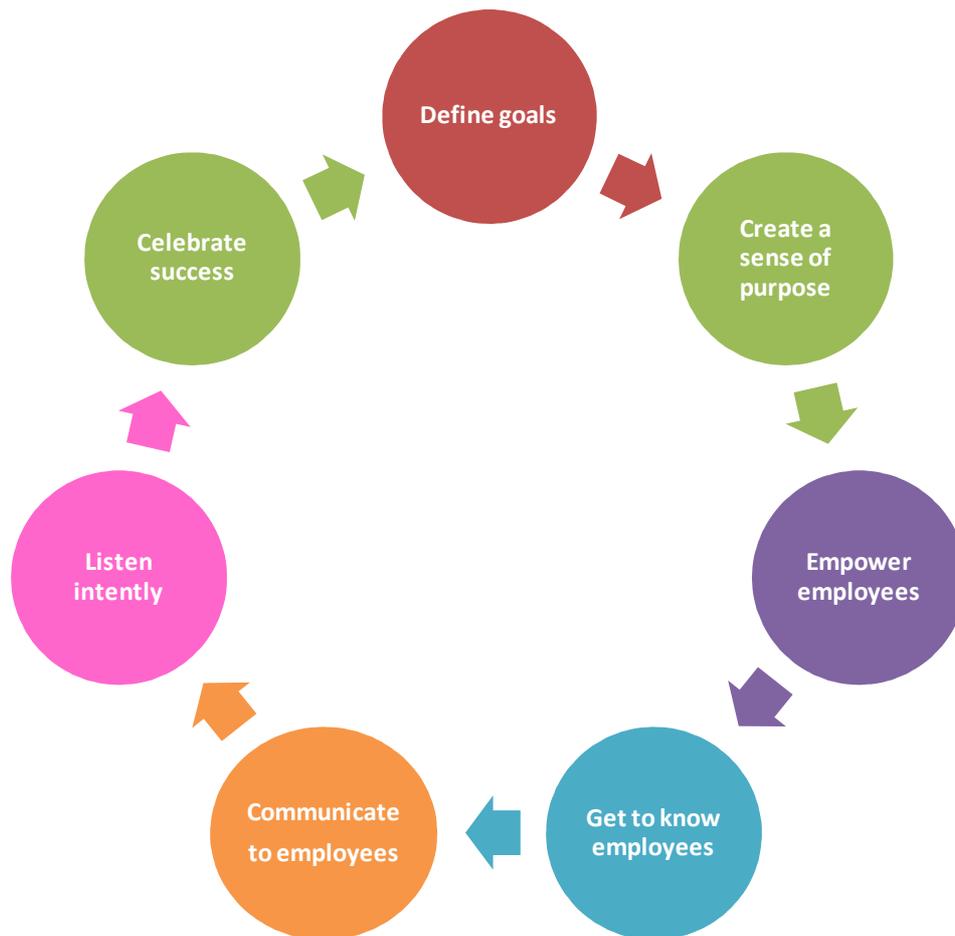
Bernthal and Wellins (2001) define retention as the organisation's ability to keep the employees it has already hired. Rossi (2000) suggests that the best method of filling vacancies in an organisation is to ensure that the current qualified employees remain in the organisation. The current employees are, after all, a known factor and they are familiar with the internal workings of the organisation. The current employees have already established the informal and formal networks that are required to help them to remain productive within the context of the organisation. Further, they have been trained in the use of the many systems and methods used by the organisation. There is also no recruitment costs associated with retaining a current employee. The role that retention has to play within organisations and the impact thereof have been discussed in detail in the background of this study in paragraph 1.1

There are plenty, of simple, cost-effective steps that an organisation can take in order to keep its talented employees and to avoid the costly recruitment and training expenses associated with hiring new employees. These tactics will be discussed, together with an indication of the role psychological ownership has to play within each scenario.

2.14.2 Retention strategies

The various retention strategies that will be discussed are illustrated in Figure 2.12.

Figure 2.12: Retention strategies



(Author's own)

2.14.2.1 Defining goals

According to Gupta-Sunderji (2004), all employees need well-defined goals that they can understand and accept. All employees need to know exactly what is expected of them. Goals and responsibilities should be constantly visible, and progress against

targets should be regularly tracked so that the employees can see what they are aiming at and how far they need to go to reach the goal. This is in line with what Pierce et al. (2001) suggest, namely that the ownership target must be visible and attractive to the individual so as to capture the individual's interest and attention. The target must also possess certain characteristics which fulfil the motives for efficacy and effectance, self-identity, and/or need for a place. To accomplish this, organisations could publish goals and expectations in the organisation's newsletter and display them on posters on corkboards in break rooms; exhibit the mission statement at every workstation; and regularly talk to employees on this subject. This will result in a dual benefit: when goals are established and monitored, employees see visible achievements and feel acknowledged and recognised.

Sartre (1943) states that the more information and the better knowledge an individual has about an object, the deeper the relationship between the object and the self, therefore the stronger the feeling of ownership toward it. Rousseau (1998) has noted that individuals establish, maintain, reproduce and transform their self-identity through interactions with intangibles such as an organisation, mission or purpose.

2.14.2.2 Creating a sense of purpose

Another characteristic of good leadership practices is helping employees to understand their significance in the big picture (Gupta-Sunderji, 2004). Any and all jobs have negative components to them; unless people have a sense of purpose, the negative components can be overwhelming, leading to de-motivation. Creating a sense of purpose promotes teamwork and instils a sense of pride. Gupta-Sunderji emphasises that it is important to help employees to understand the purpose of their jobs and why their positions are important to the organisation. Leaders (whether a formal supervisor or manager, informal mentor, head of a division or department) can start by asking employees such questions, and then help them to develop answers themselves. Once employees understand the purpose of their jobs and how the entire organisational structure works towards accomplishing the organisation's mission, not only will de-

motivators be reduced, but also motivators will be created. Pierce et al., (2001) suggest that the more individuals invest themselves in a target (investment of their own time; skills; ideas, and psychological, physical, and intellectual energies), the stronger their psychological ownership for that target will be and the more it will satisfy their motives for efficacy and effectance, self-identity, and having a place (home).

2.14.2.3 Empowering employees

When an organisation empowers its employees (Gupta-Sunderji, 2004), it will develop better relationships with them, and will allow them to take ownership for streamlining the organisation's operation and administration. When employees are authorised to take action, it gives them a sense of pride and ownership. Organisations should assign employees ownership of a task and attach all the responsibilities that go with getting the job done.

Gupta-Sunderji proposes another idea: when a problem is bothering an organisation or department, an e-mail could be sent to all the employees asking for suggestions on how to solve the problem. This involvement will give employees the feeling that they are part of a team and that their opinions are valued. An even better solution might be to let the person or department that comes up with the best solution implement it, offering them the freedom and resources needed to get the job done. Autonomy inspires self-motivation and reinforces self-worth. Allowing employees the opportunity to follow through on their ideas will give them a strong sense of accomplishment and will enhance job satisfaction.

Feelings of responsibility will include the responsibility of investing energy and time to advance the cause of the organisation, therefore being protective, caring, and nurturing. As has been noted, when an individual's self is closely linked to the organisation, as in the case of psychological ownership, a desire to maintain, enhance and protect that identity results in an enhanced sense of responsibility for work outputs (Kubzansky & Druskat, cited in Pierce et al. 2003). Pierce et al. and Coghlan (1997) found a positive

relationship between psychological ownership and experienced responsibility.

Researchers (e.g., O’Driscoll & Beehr, 2000; Parker, 1993; Spector, 1986; Yoon, Han, & Seo, 1996) found that the extent to which employees believe they have control is a major determinant of their effective responses such as job satisfaction, work involvement and organisational commitment. Empirical evidence (Brass, 1985; Pierce et al., 2004; Tanaka & Yamauchi, 2000; Yamauchi et al., 1999) supports the relationship between autonomy and control, control and psychological ownership, and autonomy and psychological ownership.

2.14.2.4 Getting to know employees

To build sound relationships with employees, leaders should get to know their employees in more depth than is obvious in the work environment. Employers need to take note about employees’ lives outside work – who they really are, the names and ages of their children, their hobbies, their interests when they are not at work. This does not mean that employers develop a relationship with their employees, but that they simply acquire more knowledge about them. Employers will not only understand their employees better, but will also build upon their self-esteem and self-worth, thus enhancing the feeling that they belong in the organisation. For example, one senior executive keeps a notebook in which he makes personal notes about each of his over 300 employees – when he sees the foreman on the shop floor, he can make an instant connection, remembering to ask how his son performed in the last hockey tournament. His over 300 employees are very fond of him, and even though they may not always agree with his decisions, they still respect him, since their relationships with him are based on more than just work.

Having a home or a place to dwell is a fundamental human need that goes beyond mere physical concerns and satisfies the pressing psychological need to belong (Porteous, 1976). Belongingness in terms of psychological ownership in organisations may be best understood as a feeling that one belongs *in* the organisation. According to

Avey et al. (2009), when employees feel like owners of the organisation, their need for belongingness is met by “having a place” in terms of their social and socio-emotional needs being met.

2.14.2.5 Communicating with employees

According to Gupta-Sunderji (2004), the reason why people view actions such as putting procedures in place to manage legitimate business functions as “red tape” is because they often do not understand the logic behind the decision and, just as often, this is because no one thought to communicate this information to them. It is important that each manager take the time to explain the reasons behind new rules to employees, because if managers do this, and if employees at least know why, irritation levels with this new rule will diminish.

When employers take the time to communicate and consult with employees, they will build better relationships with their employees. Another aspect of communication that generates positive results is offering timely and constructive feedback to employees (Gupta-Sunderji, 2004). People need to know how they are doing and they need to hear it more frequently than once or twice a year in the obligatory performance review meeting. Gupta-Sunderji suggests that an employee should get feedback (either positive or negative) within 24 hours of the event having occurred. Communication contributes to improved supervision, better relationships, and more streamlined administrative procedures. In other words, it decreases extrinsic de-motivators, while also increasing intrinsic motivators.

James (1890) suggested that individuals come to develop feelings of ownership for an object through a living relationship with that object. Beaglehole (1932) supports this by arguing that through intimate knowledge of an object, person, or place, a union of the self with the object takes place. Pierce et al. (2001) propose that by various processes of association, organisations can provide their members with a number of opportunities for getting to know potential targets of ownership, such as work, job, projects, and

teams. For example, when organisational members are given information about potential organisational targets of ownership (e.g., the mission of the organisation, its goals, and performance), they will feel that they know the organisation better and, consequently, may develop psychological ownership toward it. This will also satisfy their motive for self-identity (Rousseau, 1998).

2.14.2.6 Listening intently

Nothing builds rapport in relationships more than listening, in life and in dealings with employees. Therefore, “the reason you have two ears and one mouth is because you should listen twice as much as you speak” (Gupta-Sunderji, 2004, p. 40). In accordance with human nature, people often respond to what someone says (usually with the good intention of assisting); unfortunately, they would be better off if they just listened. Usually the individual is not looking for a solution to the problem or dilemma but merely seeking a responsive ear.

It is important for employers to listen intently. They should open their minds to their employees’ suggestions and, more importantly, encourage input from all areas. In this way employers will not only build relationships, but will also get valuable information about what is working or not, and what could work better within their department or organisation. When employers listen attentively, they will also get to know their employees better. Dittmar (1992, p. 86) states that it is through people’s interaction with their possessions (either tangible or intangible), coupled with a reflection upon their meaning that “our sense of identity, our self-definition, are established, maintained, reproduced and transformed”.

2.13.2.7 Celebrating success

Gupta-Sunderji (2004) suggests that it is very important for employers to celebrate the accomplishments in their organisations, because this creates positive workplace relationships. It is a good management practice, and if employers celebrate the

elimination of unnecessary work, it will encourage other people to come forward and make similar suggestions. It will reduce extrinsic de-motivators (e.g., poor quality of supervision, relationship with the supervisor, working conditions) and is also an intrinsic motivator, because it recognises employees' achievements. This could be done as simply as by saying "thank you", either verbally or in writing. At a team meeting, people could be given a one- or two-minute "brag moment" in which they can tell everyone one work-related thing that they are particularly proud of having accomplished. Other examples may include the following: create a celebration wall: a cork-board with pictures and goofy captions that celebrate something worth celebrating; order a pizza or sandwich lunch; bring muffins and doughnuts to celebrate the halfway point of an ongoing project. Celebrating does not have to involve a big budget.

The feelings of ownership toward both material (e.g., a reward) and immaterial (e.g., recognition) objects can not only shape identity (Belk, 1988; Dittmar, 1992), but can also affect behaviour (e.g., commitment and job satisfaction) (Isaacs, 1933).

In his study, Buchko (1993) found that ownership may influence employee behaviours, mainly through its effect on the intention of an employee to remain in the organisation. This effect is both direct and indirect, working through increased organisational commitment to tie the employee to the organisation and decrease the effect of turnover. Consistent with much of the previous research on turnover (Mobley, 1982), Buchko (1993) found that the effects of commitment on turnover are mediated by the intention to turn over. According to him, the direct and indirect effect of ownership is significant, since much previous research (French & Rosenstein, 1984; Klein, 1987; Long, 1989) has suggested that the effects of attitudinal variables on ownership are strong enough to influence turnover independently of the effect on turnover intention.

It is evident from the above that psychological ownership can form a key element of retention strategies in organisations. Creating a sense of psychological ownership among employees of the organisation and their jobs/work has the potential to increase staff retention and productivity.

2.15 CONCLUSION

In the literature review psychological ownership as a concept has been defined as a state in which individuals feel as though the target of ownership (material or immaterial in nature) or piece of it is “theirs”; the phenomenon exists regardless of whether or not there is legal ownership. Psychological ownership was differentiated from other work-related attitudes such as organisational commitment, organisational identification, internalisation, psychological empowerment, and job involvement because it describes a unique aspect of human experience in organisations. The feeling of possession is the core that differentiates psychological ownership from these other work-related attitudes.

The review discussed the motives or reasons for psychological ownership: *efficacy and effectance*, *self-identity*, and *having a place*. Efficacy and effectance means that it is important for an individual to be in control, and the possibility of being in control is an important factor in creating psychological ownership. People use ownership for the purpose of defining and expressing their self-identity to others, while the motive “having a place” arises from the need to have a certain area of one’s own, “a home”.

The review also identified the major routes or paths through which feelings of ownership for a particular object emerge, namely *controlling the target*, *coming to know the target intimately*, and *investing the self in the target*. Thus, when employees exercise greater amounts of control, intimately come to know, and invest themselves in the target of ownership a sense of responsibility takes root and possessive feelings develop.

The several factors that influence the emergence of psychological ownership have been discussed. The potential for the development of psychological ownership resides in both the target and the individual, and its emergence and manifestation is also strongly influenced by situational resources. The process by which psychological emerges is associated with a complex interaction between the “roots”, the “routes”, target factors, and individual factors. Psychological ownership is thus determined by a complex interaction of a number of intra-individual, object-related, and contextual factors.

Moreover, the review discussed two independent forms of psychological ownership: *promotion-orientated* and *prevention-orientated* psychological ownership. Individuals operating primarily within the promotion focus tend to be sensitive to the presence or absence of reward, are more concerned with accomplishments and aspirations and show more willingness to take risks, whereas individuals who operate primarily within the prevention focus tend to be more sensitive to the presence or absence of punishment and are more concerned with duties and obligations.

The chapter described two distinct types of psychological ownership: *organisation-based* and *job-based psychological ownership*. Organisation-based psychological ownership is related to individual's feelings of possession and psychological connection to the organisation as a whole, whereas job-based psychological ownership is concerned with individuals' feelings of possession toward their particular job.

Psychological ownership was associated with several positive behavioural and social-psychological consequences. It has been associated with greater commitment to the organisation, greater accountability; greater job satisfaction; better organisation-based self-esteem and more effort by the individual to engage in organisational citizenship behaviour. Psychological ownership was also positively related to extra-role behaviour. The chapter discussed the causal relationship between psychological ownership and attitude to organisation change, feelings of responsibility and willingness to take personal risks and make personal sacrifices.

A baseline motivational model has been applied to this study for explaining the state of psychological ownership.

It was argued that psychological ownership is a multidimensional construct consisting of promotion-orientated psychological ownership comprising six theory-defined dimensions: self-efficacy, self-identity, belongingness, accountability, autonomy and responsibility. Territoriality was defined as a preventative dimension of psychological ownership.

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The discussion highlighted the role that psychological ownership can play in staff retention, suggesting that creating a sense of ownership of the organisation among employees has the potential to increase staff retention.

The following chapter will discuss the research methodology and strategy that were followed in the study.

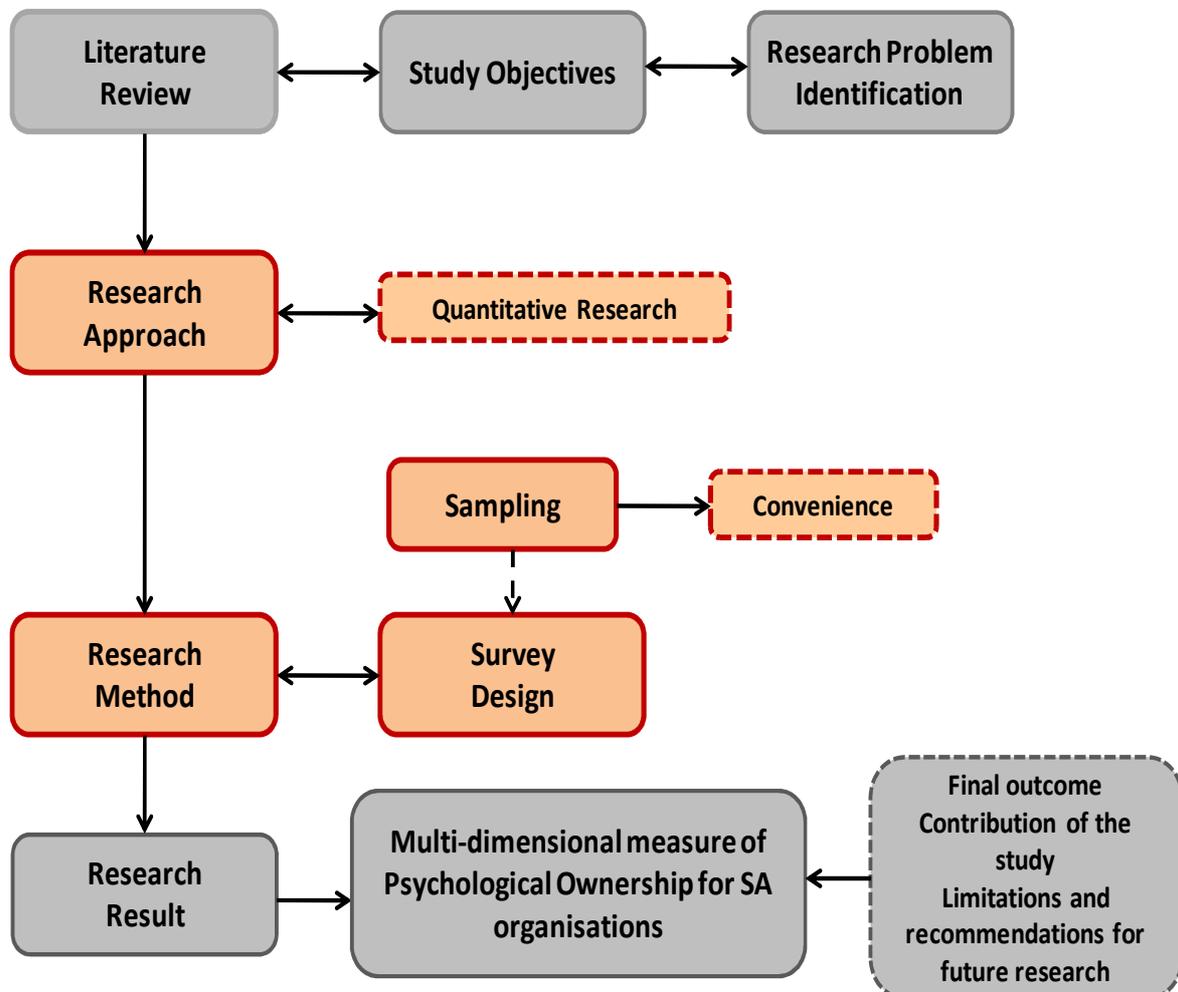
CHAPTER 3

RESEARCH DESIGN AND METHODS

If the map shows a different structure from the territory represented... then the map is worse than useless, as it misinforms and leads astray.

- Alfred Korzybski

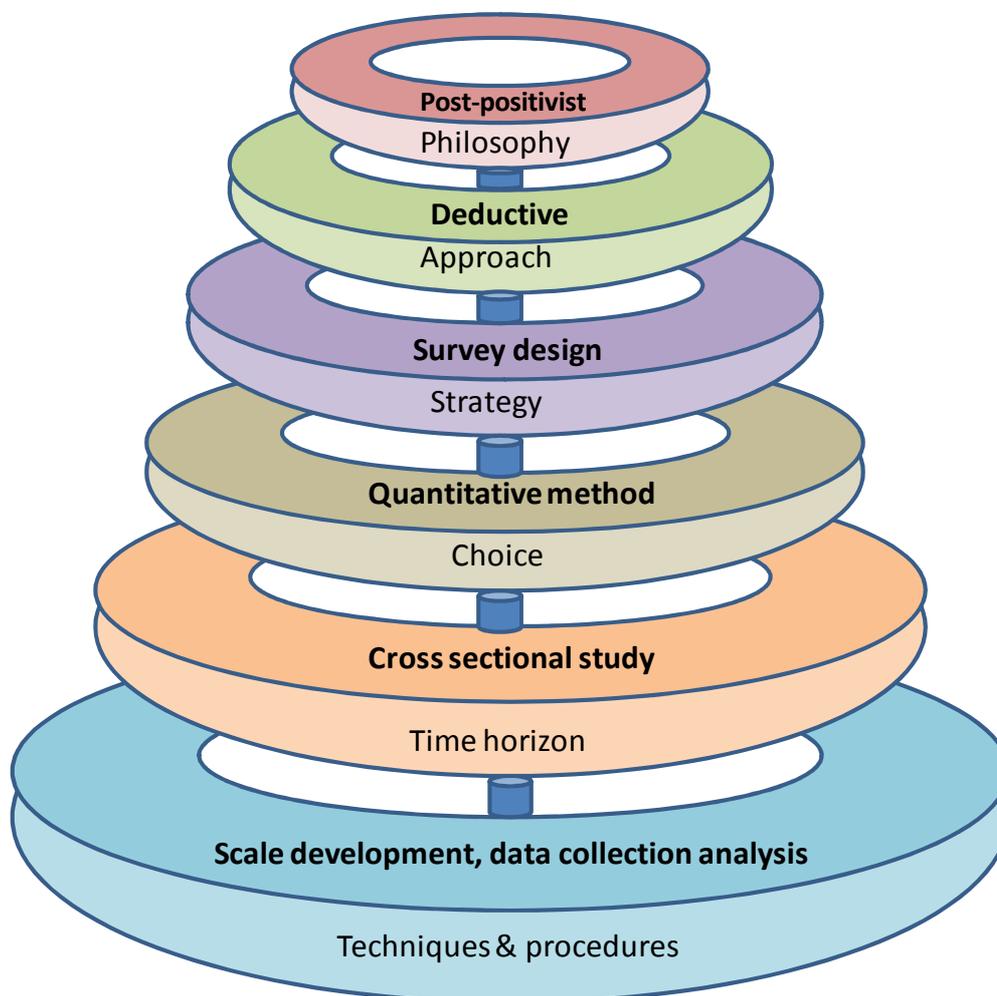
In this chapter...



3.1 INTRODUCTION

This study was conducted in order to develop a multi-dimensional measure whereby psychological ownership of employees could be measured in South African organisations. The purpose of this chapter is to explain the research methodology and strategy that were followed in the study, as displayed in Figure 3.1

Figure 3.1: Research methodology and strategy outline



Source: Adapted from Saunders, Lewis & Thornhill (2007)

3.2 THE THREE WORLDS FRAMEWORK

In order to describe and clarify research problems and other aspects of the logic of research, Mouton (2001) proposes that researchers should make use of a simple structure that he called the Three Worlds Framework. The framework is based on a distinction between three “worlds” in which research can be conducted:

- World 1: The world of everyday life
- World 2: The world of science
- World 3: The world of meta-science

3.2.1 World 1: The world of everyday life

Ordinary people spend most of their lives in World 1 – the ordinary social and physical reality that people exist in. This world consists of multiple worlds and in this world people produce and use knowledge of different kinds referred to as *lay knowledge*. Lay knowledge refers to knowledge that people use in everyday life, which enables them to cope effectively with their daily tasks (pragmatic coping). People apply their lay knowledge to solving problems.

In this study, the questions to be answered with regard to World 1 include the following:

- What is the binding force (apart from money) that keeps an employee with an organisation?
- How do organisations get their employees to stay in their organisations?

3.2.2 World 2: The world of science

In World 2, scientists select phenomena from World 1 and make them into objects of inquiry. The overriding goal of science is to search for the “truth” or “truthful knowledge”. Thus, the aim of science is to generate valid and reliable descriptions, models and theories of the world. Mouton (2001) refers to this as the *epistemic imperative*.

Researchers suggest that psychological ownership may be an integral part of the employee's relationship with the organisation. In this study, questions to be answered with regard to World 2 include the following:

- What is meant by the construct of psychological ownership?
- Why it is necessary to measure psychological ownership?
- What motivates psychological ownership?
- What are the constructs that influence and define psychological ownership?
- What are the consequences of psychological ownership?
- Are there any measures of psychological ownership available within the South African context?

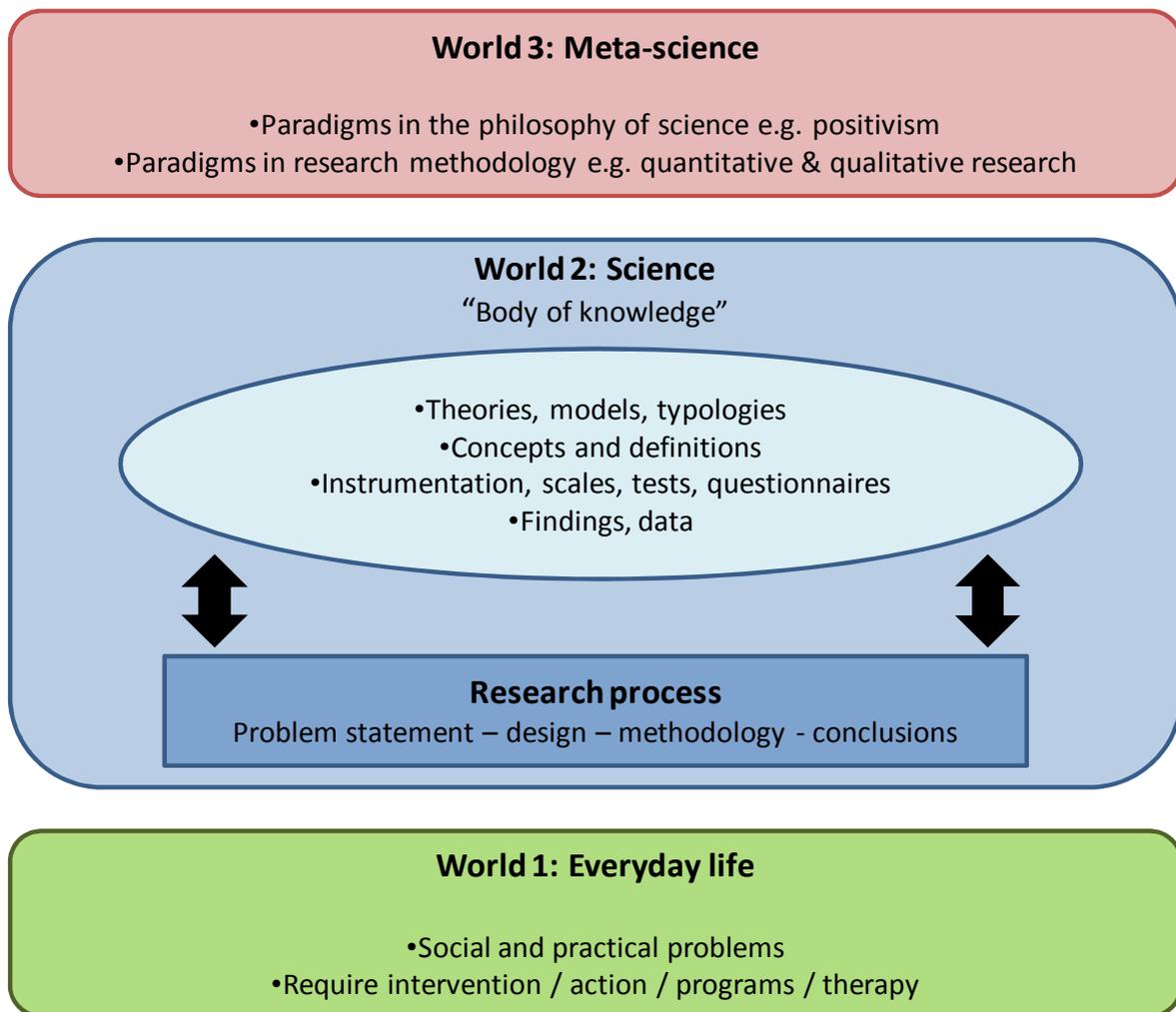
3.2.3 World 3: The world of meta-science

Throughout history scientists have critically reflected on science and scientific practices to develop their various *meta*-disciplines. Scientists have done this by laborious research and reflection to attain truthful and valid research results. Today this is reflected in the disciplines of philosophy and methodology of science, research ethics and the sociology and history of science. In this study the questions to be answered with regard to World 3 include the following:

- If measures of psychological ownership are available, are they comprehensive enough to represent psychological ownership, or is future theory building and research necessary to demonstrate a link between psychological ownership and other related concepts?
- Are these measures of psychological ownership valid and reliable within the South African context?
- If not, what are the steps that are necessary to develop an instrument that will be valid and reliable for the diverse South African context?

The relationship between meta-science, science, and everyday life knowledge is illustrated in Figure 3.2.

Figure 3.2: The relationship between meta-science, science and everyday life knowledge



Source: Mouton (2001, p.140)

3.3 RESEARCH PARADIGM/PHILOSOPHY

Saunders et al. (2007) refer to research philosophy as a term that relates to the development of knowledge and the nature of knowledge, thus the developing of knowledge in a particular field. Creswell (2009) refers to this philosophy/paradigm as a worldview. The researcher’s worldview is informed by his or her own assumptions

based on their own knowledge, experience and preferences. These elements in combination will influence the philosophy that the researcher will apply in formulating the strategy for a particular research topic.

According to Creswell (2009), there are four different worldviews: post-positivism, constructivism, advocacy/participatory, and pragmatism. The major elements of each position are presented in Table 3.1.

Table 3.1: Four worldviews

Post-positivism	Constructivism
<ul style="list-style-type: none"> • Determination • Reductionism • Empirical observation and measurement • Theory verification 	<ul style="list-style-type: none"> • Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Advocacy/Participatory	Pragmatism
<ul style="list-style-type: none"> • Political • Empowerment issue-orientated • Collaborative • Change-orientated 	<ul style="list-style-type: none"> • Consequences of actions • Problem-orientated • Pluralistic • Real-world practice orientated

Source: Creswell (2009, p. 6)

Positivism is a scientific method that involves the systematic observation and description of phenomena contextualised within a model or theory, the statement of a hypothesis, the implementation of a tightly controlled experimental study, the use of inferential statistics to test the hypothesis, and the interpretation of statistical results in the light of the original theory (Ponterotto, 2005).

The main difference between the positivist and the post-positivist views is that the former stresses “theory verification” and the latter “theory falsification” (Lincoln & Guba, as cited in Ponterotto, 2005, p. 129). Positivists on the one hand believe in an objective, anticipated reality, whereas post-positivists on the other hand admit an objective reality that is only inadequately anticipated. According to post-positivism, human intellectual mechanisms are defective and life’s phenomena are basically inflexible, and for this

reason, researchers can never fully capture a “true” reality. The primary goal of both a positivist and post-positivist enquiry is a clarification that will ultimately lead to forecasting and control of phenomena. Positivism and post-positivism form the foundation of quantitative research (Ponterotto, 2005).

Post-positivists are concerned about identifying and assessing the aspects that influence outcomes. Post-positivists base their knowledge on the observation and measurement of the objective reality that exists “out there” in the world. Therefore, it is important for a post-positivist to develop several measures of observations and to study individual behaviour. The world is regulated by specific theories and laws. These theories, however, need to be tested and improved so that people can understand the world. Post-positivists will pursue the following approach to research: firstly, they will start with a theory, secondly they will collect data that either supports or counters the theory, and lastly they will make the necessary adjustments before additional tests are made (Creswell, 2009). The main characteristics of post-positivism are presented in Table 3.2.

Table 3.2: The main characteristics of post-positivism

Definition	Post-positivism is a scientific method that involves systematic observation and description of phenomena contextualised within theory
Ontology (concerns the nature of reality and being)	There is one true reality that is apprehend able, identifiable, and imperfectly measurable (a position known as <i>critical realism</i>)
Epistemology (concerned with the relationship between the participant and the researcher)	The researcher, participant and topic are assumed to be independent of one another (dualism), although the researcher may have some influence on that being researched. By following rigorous, standard procedures, the participant and topic can be studied by the researcher without bias (objectivism)
Axiology (concerns the role of researcher values in the scientific process)	The researcher remains emotionally detached from the investigative inquiry – the values, hopes, expectations, and feelings of the researcher have no place in the scientific inquiry. The researcher eliminates or strictly controls any influence he or she might have on the participants or on the research process by using standardised, systematic investigative methods.
Methodology (refers to the process and procedures of the research)	Researchers attempt to simulate, as closely as possible, strict scientific methods and procedures where variables are carefully controlled or manipulated, and where the researcher’s emotional stance on the problem under study is irrelevant
Researcher’s role	The researcher remains objective, neutral and distant

Source: Adapted from Ponterotto (2005, p. 130-132)

3.3.1 Motivation for choice

The post-positivist paradigm was appropriate to this study because the researcher set out to explore and further define the construct of psychological ownership and was concerned with developing an objective, accurate measure for psychological ownership in South African organisations. To ensure that this instrument was valid, the researcher gathered scientific evidence, which corresponds with the positivist way of thinking. A positivist approach quantifies and measures the observable into scientific evidence. Therefore, the researcher made use of scientific methods that are standardised, valid, and reliable. The aim was to generalise findings from the sample to the population, while being an objective researcher. Quantitative methods were applied and results were presented in an objective manner.

3.4 RESEARCH APPROACH

According to Saunders et al. (2007), there are two approaches that could be followed when conducting research: a deductive or inductive approach. Following the deductive approach, the researcher develops a theory and/or hypothesis and designs a research strategy to test the hypothesis. Following the inductive approach, the researcher would collect data and develop a theory as a result of the data analysis.

3.4.1 Deduction

Deduction involves the development of a theory that is subjected to a thorough test. Deduction is the dominant research approach followed in the natural sciences, where theory presents the basis of explanation, allows the anticipation of phenomena, predicts their occurrence and thus permits them to be controlled (Saunders et al., 2007).

Saunders et al. (2007) list five chronological stages through which deductive research progresses:

- (1) A hypothesis (a testable proposition about the relationship between two or more concepts or variables) will be stated from the theory.
- (2) An indication will be given of how the concepts are to be measured, which proposes a relationship between two specific concepts or variables.
- (3) The hypothesis will be tested.
- (4) The specific outcome of the inquiry will be examined (it will either tend to confirm the theory or indicate the need for its amendment).
- (5) If necessary, the theory will be adjusted in the light of the findings.

According to Saunders et al. (2007), deduction should possess the following characteristics:

- (1) There is a search to explain causal relationships between variables.
- (2) Quantitative data is collected.
- (3) Controls are applied to ensure the validity of data.
- (4) A highly structured methodology is followed to ensure reliability.
- (5) The researcher is independent of what is being observed.
- (6) Concepts are operationalised in a way that will enable facts to be measured quantitatively.
- (7) Samples should be of sufficient numerical size to allow generalisation of conclusions.

3.4.2 Induction

Hinkin (1998) suggests that the induction approach should be followed when it is not easy to identify the conceptual basis of a construct. To get an understanding of the nature of the problem, it is sometimes better for the researcher to ask a sample of respondents to give, for example, descriptions of their feelings about their organisation or to describe some aspect of behaviour. The result of this would be the formulation of theory. According to Saunders et al. (2007), induction should possess the following characteristics:

- (1) The researcher tries to gain an understanding of the meanings attached by individuals to certain events.
- (2) A less structured approach is followed, which might reveal alternative explanations for the problem at hand.
- (3) The approach is likely to be particularly concerned with the context in which the events take place.
- (4) A smaller sample may be appropriate.
- (5) Researchers collect qualitative data.
- (6) Researchers may use a variety of methods to collect data.
- (7) Researchers are less concerned with the need to generalise their findings.

The major differences between deductive and inductive approaches to research are summarised in Table 3.3:

Table 3.3: Major differences between deductive and inductive approaches to research

Deduction emphasises	Induction emphasises
<ul style="list-style-type: none"> • Scientific principles • Moving from theory to data • The need to explain causal relationships between variables • The collection of quantitative data • The application of a control to ensure validity of data • The operationalisation of concepts to ensure clarity of definition • A highly structured approach • Researcher independence of what is being researched • The necessity to select samples of sufficient size in order to generalise conclusions 	<ul style="list-style-type: none"> • Gaining an understanding of the meanings humans attach to events • A close understanding of the research context • The collection of qualitative data • A more flexible structure to permit changes of research emphasis as the research progresses • A realisation that the researcher is part of the research process • Less concern with the need to generalise

Source: Adapted from Saunders et al. (2007, p. 120).

3.4.3 Application to this study

Hinkin (1998) suggests that if the theoretical foundation provides adequate information to generate the initial set of items, the deductive approach should be followed. This approach necessitates an understanding of the phenomenon to be investigated and a comprehensive literature review to develop the theoretical definition of the construct under examination. This definition should serve as a guideline for the development of items (Schwab, 1980).

In this study, a thorough review of the literature helped the researcher to explore and further define the construct of psychological ownership in order to develop a multi-dimensional measure of psychological ownership within the diverse South African context.

3.5 DESCRIPTION OF INQUIRY STRATEGY AND BROAD RESEARCH DESIGN

According to Creswell (2009), strategies of inquiry set out unambiguous procedures and guidelines for the research design. Strategies of inquiry are types of qualitative, quantitative, and mixed-methods design that provide specific direction for procedures in research design. A summary of the alternative strategies of inquiry is presented in Table 3.4:

Table 3.4: Alternative strategies of inquiry

Quantitative	Qualitative	Mixed methods
<ul style="list-style-type: none"> • Experimental designs • Non-experimental designs, such as surveys 	<ul style="list-style-type: none"> • Narrative research • Phenomenology • Ethnographies • Grounded theory studies • Case study 	<ul style="list-style-type: none"> • Sequential • Concurrent • Transformative

Source: Creswell (2009, p. 12)

According to Cresswell (2009), the strategies of inquiry associated with quantitative research are those that invoke the post-positivist worldview, as is the case in this

particular study. This study was based on a quantitative research method with a non-experimental research design. Babbie and Mouton (2001, p. 646) refer to quantitative research as the “numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect”. The main characteristics of quantitative research, as proposed by Neuman (1997), are as follows:

- The research tests the hypothesis or hypotheses that the researcher starts with.
- Concepts are in the form of well-defined variables.
- Measures are methodically constructed before data is collected and are standardised.
- Data is in the form of numbers from accurate measurement.
- Theory is mainly fundamental and is deductive.
- Standard procedures are followed, and replication is assumed.
- Analysis continues by means of statistics, tables, or diagrams and discussing how what they show relates to the hypothesis.

In this study, a self-administered questionnaire was compiled and data collected by means of distributing the questionnaire as part of a survey research design. A non-experimental, cross-sectional survey design was employed for this particular study.

This research project consisted of two distinct phases, the research design and the data collection. The researcher followed a deductive approach to test whether the theoretical or applied research problem could be supported by empirical measurement and data analysis. The researcher tested whether the variable could represent alternative explanations, and then through statistical analysis eliminated these alternative explanations by measuring them against the control variables. This process is called non-experimental research. On the basis of the theory, the researcher developed a survey questionnaire that was used for measuring psychological ownership. The detailed scale development process will be discussed in more detail below. After the planning phase, data was collected (Neuman, 1997).

This study collected and analysed primary data; thus it represents empirical research. Saunders et al. (2007) describe primary data as data that is compiled for a specific research project being undertaken. In this study empirical data was collected to address the research objectives. Therefore in this study basic research was undertaken to increase the scientific knowledge on psychological ownership experienced by employees in various organisations within the South African context.

In this study, a cross-sectional survey was chosen within the non-experimental design, as measurement occurred at a single time. Individuals were selected to provide a depiction of the overall psychological ownership experienced at a specific time. A cross-sectional method is usually deployed for descriptive studies, as is the case with this study.

The advantage of the cross-sectional design is that it avoids problems related to longitudinal designs, which include being costly and time-consuming, eventually making respondents less interested in taking part in the research. However, disadvantages of the cross-sectional design are that because research is only conducted at one point in time, changes over time are ignored.

A summary of the survey research design that was conducted in this study is presented in Table 3.5.

Table 3.5: Survey research design

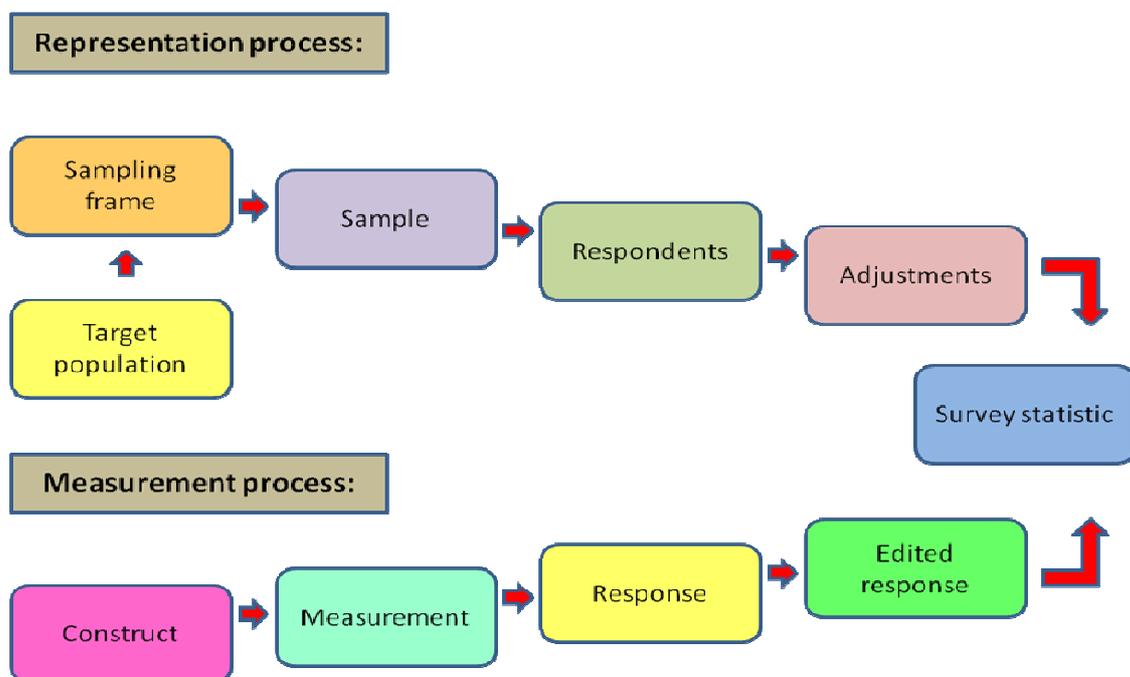
Description	It is quantitative in nature and aims to present a sample that is representative
Design classification	Empirical research was conducted that collects primary data that is numeric and allows the researcher medium control
Key research questions	The research was exploratory and descriptive
Design types	A cross-sectional survey was conducted in that data was only collected at one point in time
Application	The survey was conducted in various organisations within the South African context

Meta-theory	This approach is associated with the post-positivist meta-theory and variable analysis
Conceptualisation	The survey was theory-driven
Sampling	Non-probability sampling was used.
Mode of observation	Data was collected by means of structured electronic questionnaires that were e-mailed or delivered by hand
Analysis	Descriptive and inferential statistics were used
Sources of error	Sampling error; questionnaire error; high refusal rates; high non-response; respondent effects; data capturing error; use of inappropriate statistical techniques

Source: Mouton (2001:152)

Umbach (2005) notes that new technologies, such as the world-wide web and advanced scanning software, have made the use of surveys easy and inexpensive. Umbach views survey methodologies as a survey life cycle process. The survey life cycle is illustrated in Figure 3.3.

Figure 3.3: The survey life cycle



Source: Umbach (2005, p. 92)

In the measurement process, the researcher starts by identifying a construct (in this case psychological ownership) or understanding of what she wants to measure. The researcher then develops measurements (in this case the psychological ownership measure) and considers the concrete ways in which she will gather information about the constructs. Responses are the information provided by the survey participants (in this study, employees from various South African organisations) through the survey measurements. The researcher then edits such responses.

In the representation process, the researcher starts by identifying the target population from which the sample frame (units of analysis) and sample are to be drawn. In this study, employed individuals in various South African organisations were approached. Respondents are those participants from the sample who completed the questionnaires. Post-survey adjustments were made to the respondent data; frequent adjustments made to the data are weighting and imputation of missing data.

3.6 SAMPLING

The full data set that is gathered in the research project is called the research population. However, in order to test or verify the research theory, the researcher utilises a subset of information from the research population called the sample. Various sampling techniques exist in order to ensure that the sample group remains representative and valid for the total population.

3.6.1 Target population, context and unit of analysis

The target population concerns the population from which data will be gathered. The target population from which the sampling frame was chosen in this study consists of a diverse group of professional, high-skilled and skilled individuals employed in both the private and public sector. The reason for choosing employed individuals was that psychological ownership towards their organisation can only develop in individuals who are employed, and the research objective for the proposed study was to develop a

measure of psychological ownership. A skilled employee is defined as one who possesses some special skill, knowledge, or ability in his or her work. A skilled worker may have attended a university, college or technical school, or may have learned the skills on the job. A highly skilled worker is any worker who is capable of working efficiently, of exercising substantial independent judgment, of carrying out duties with responsibility and who usually efficiently supervises the work of skilled employees. A professional is defined as a individual who typically possess a large body of knowledge derived from extensive, specialised educational training (usually tertiary), who earns a comfortable salary, who usually exercises autonomy in the workplace, is frequently engaged in intellectually and creative challenging work, and is expected to make use of independent judgement and professional ethics in carrying out his or her responsibilities (Mattes & Richmond, 2000). Various organisations within the private and public sector were approached that allowed for the gathering of a diverse dataset. The criteria for the organisation were that it must have a diverse workforce from a broad range of occupations, and that the individuals should have access to electronic mail.

The unit of analysis for this study was therefore professional, highly-skilled and skilled individuals employed in various types of organisations in both the private and public sector from the South African population.

3.6.2 Sampling methods

There are two types of sampling techniques: probability and non-probability sampling. Probability sampling is a sampling technique in which the chance, or probability, of each case being selected from the population is known and is not zero. Probability sampling is often associated with survey and experiential research strategies. Non-probability sampling is a sampling technique in which the chance or probability of each case being selected is not known (Saunders et al., 2007). The different types of sample are illustrated in Table 3.6.

Table 3.6: Types of sample

Non-probability	Probability
<i>Convenient</i> : select anyone who is convenient	<i>Simple</i> : select people based on a true random procedure
<i>Quota</i> : select anyone in predetermined groups	<i>Systematic</i> : select every <i>n</i> th person (Quasi-random)
<i>Purposive</i> : select anyone in a hard-to-find target population	<i>Stratified</i> : randomly select people in predetermined groups
<i>Snowball</i> : select people connected to one another	<i>Cluster</i> : take multistage random samples in each of several levels

Source: Neuman (1997, p. 205)

This particular study employed non-probability sampling. The reason for this sample type being chosen is that the researcher was not aware of the probability of each case being selected. The specific type of non-probability sampling employed was heterogeneity sampling, which is a type of purposive sampling. Purposive sampling enables the researcher to use her judgment in selecting cases, or it selects cases with a specific purpose in mind (Saunders et al., 2005). In this particular study the purpose was to collect data from a diverse, employed South African sample. Heterogeneity sampling is concerned with getting data from a wide range of diverse individuals and allows the researcher to collect data about the key themes. The population from which data was to be obtained was employed professional, high-skilled and skilled individuals in various organisations in both the private and public sector. The population was accessible to the researcher and the researcher proposed to provide individuals with an equal opportunity to be selected for the survey. Non-probability sampling also has an advantage of convenience and economy. Due to an insufficient response rate, the researcher followed a form of *quota sampling* in that additional respondents were reached to ensure that the sample size was sufficient for quantitative research. The result was to create a somewhat representative sample that would increase the population validity.

3.6.3 Sample size

Hinkin (1998) recommends that the sample used for the subsequent data collection should be of ample size and be representative of the population of interest. According to Tabachnick and Fidell (2007), correlation coefficients tend to be less reliable when estimated from small samples. Correlation of the sample can only be reliably estimated if the sample size is large enough and representative of the research population. However, the size of the research population is a key factor in determining the size of the sample; similarly, the stronger the correlations, the smaller the allowable sample will be. The number of research factors has a similar impact on sample size.

Tabachnick and Fidell (2007) calculate that it is “comforting” to have at least 300 cases for factor analysis. Krzysofiak, Cardy and Newman (1988) suggest that if the initial sample is large enough, the sample could randomly be split in half and parallel analyses for scale development could be conducted, using exploratory and confirmatory factor analysis. According to Hinkin (1998), both exploratory and confirmatory factor analysis are particularly susceptible to sample size effects. It was the intention of the researcher to conduct both exploratory and confirmatory factor analysis as part of the scale development process.

3.6.4 Application to this study

For this study a non-probability convenience sample of 712 was collected from employed professional, high-skilled and skilled individuals in various organisations in both the private and public sector in South Africa. The sample was collected over a three-month period and sample selection came to an end when the researcher arrived at a sufficient sample. According to Tabachnick and Fidell (2007), at least 300 cases would be needed to perform the statistical methods described in this chapter. Following the recommendation made by Tabachnick and Fidell, an arbitrary criterion was set such that persons with 5% or more missing values were not included for further analysis. In a case where fewer than five missing values per respondent occurred, the missing value

was replaced with the mean of that particular respondent's responses to other items. Based on a suggestion made by Krzysofiaket al. (1988), the sample was randomly split in half, such that a sample of 356 respondents was used for the Exploratory Factor Analysis (EFA) and a sample of 356 for the Confirmatory Factor Analysis (CFA)

Detailed information about the demographic characteristics of the sample is presented in Table 3.7

Table 3.7: Demographic information on the respondents

Variable	Category	Frequency	Percentage	Cumulative percentage
Gender	Male	287	40.59	40.59
	Female	420	49.41	100
	Total	707		
	Omitted data	5		
Ethnic group	African	226	32.19	32.19
	Coloured	24	3.42	35.61
	Indian	34	4.84	40.45
	White	418	59.54	100
	Total	702		
	Omitted data	10		
Age	Younger than 29	137	19.2	19.1
	30-39	213	28.87	49.07
	40-49	240	33.66	82.73
	50+	122	17.13	100
	Total	712		
Education	Grade 12	60	8.6	8.6
	Diploma	223	31.95	40.55
	Bachelor's degree	135	19.34	59.89
	Postgraduate degree	280	40.11	100
	Total	698		
	Omitted data	14		

University of Pretoria – C Olckers (2011)

Variable	Category	Frequency	Percentage	Cumulative percentage
Sector in which organisation operates	Financial services	103	14.84	14.84
	Chemical/Petroleum	186	26.80	41.64
	Government	172	24.78	66.42
	Manufacturing and production	110	15.86	82.28
	Other	123	17.72	100
	Total	694		
	Omitted data	18		
Operating level in organisation	Operational level	221	31.94	31.94
	Junior management	150	21.68	53.62
	Middle management	201	29.05	82.66
	Senior management level	120	17.34	100
	Total	692		
	Omitted data	20		
Years working in current organisation	Less than 5 years	307	43.67	43.67
	6-10 years	138	19,35	63.02
	11-20 years	163	22.44	85.46
	21+ years	104	14,61	100
	Total	712		
Years working in current job	Less than 5 years	471	66.06	66.06
	6-10 years	102	14.31	80.37
	11-20 years	99	13.88	94.25
	21+ years	40	5.62	100
	Total	712		
Registered at Professional Body	Yes	324	47.58	47.58
	No	357	52.42	100
	Total	681		
	Omitted data	31		

The sample consisted of 40.59% ($n = 287$) males and 49.41% ($n = 420$) females. Of the sample, 59.54% ($n = 418$) were White respondents, 3.42% ($n = 24$) were Coloureds, 4.84% ($n = 34$) were Indian and 32.19% ($n = 226$) were Africans. Of the respondents,

19.2% ($n = 137$) were younger than 29 years of age, 28.87% ($n = 213$) were between 30 and 39 years of age, 33.66% ($n = 240$) were between 40 and 49 years of age and 17.13% ($n = 122$) were above 50. Many respondents in the sample had obtained a postgraduate degree, representing 40.11% ($n = 280$) of the sample. The least represented category was respondents who had obtained Grade 12, only 8.6% ($n = 60$) respondents falling in this category. Employees who had obtained a diploma constituted 31.95% ($n = 223$) of the sample, while employees who obtained a bachelor's degree represented 19.34% ($n = 135$) of the sample.

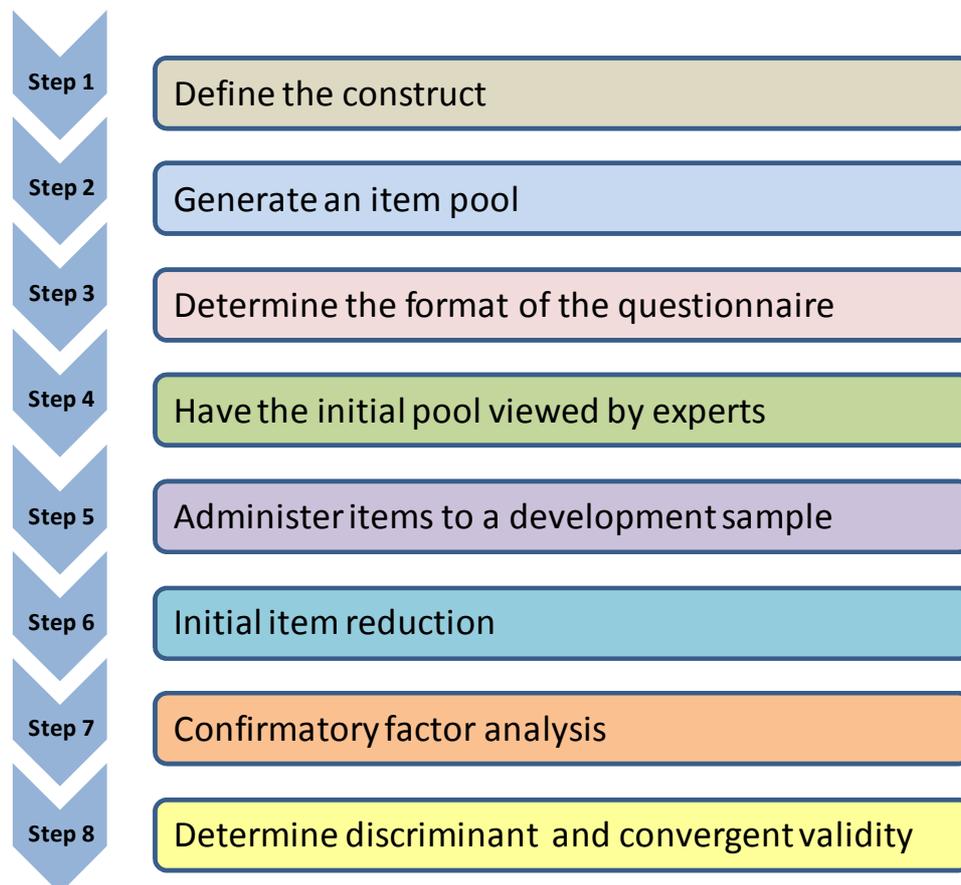
Of the sample, 14.84% ($n = 103$) respondents were employed in the financial service sector, 26.8% ($n = 186$) in the chemical/petroleum industry, 15.86 ($n = 110$) in manufacturing and production, and 17.72% ($n = 123$) in "other" sectors, which include for example professional services, information technology and telecommunications. Of the respondents, 31.94% ($n = 221$) are functioning on operational level, 21.68% ($n = 150$) on junior management level, 29% ($n = 201$) on middle management level, and 17.34% ($n = 120$) on senior management level.

Table 3.17 also indicates that most of the sample respondents, 43.67% ($n = 307$) had been working in their current organisation for less than 5 years, with 19.35% ($n = 138$) having worked between 6 and 10 years, 22.44% ($n = 163$) between 11 and 20 years, while 14.61% ($n = 104$) of the respondents had been working in their current organisation for more than 21 years. The majority of the respondents, 66% ($n = 471$) had worked in their current job for less than 5 years, 14.31% ($n = 102$) between 6 to 10 years, 13.88% ($n = 99$) between 11 and 20 years, and 5.62% ($n = 40$) had worked in their current job for more than 21 years. There were 324 (47.58%) respondents registered with a professional body, but 52.42% ($n = 357$) respondents were not registered with any professional board or body.

3.7 SCALE DEVELOPMENT

As Spector (1992) points out, researchers use various factors to formulate summated rating scales. The factors included in the scales in this study are emotional state, personality, personal needs and job description. According to DeVellis (2003), researchers achieve their goal by quantifying specific phenomena through scale development. In this study, a measure of psychological ownership was developed by using a combination of the steps suggested by DeVellis (2003), Hinkin (1998), and Spector (1992), as indicated in Figure 3.4.

Figure 3.4: Steps in the scale development process



Source: Adapted from DeVellis (2003), Hinkin (1998), and Spector (1992)

3.7.1 Step1: Defining the construct

DeVellis (2003, p. 60) states that clarifying exactly what the scale is intended to measure seems “deceptively obvious.” Spector (1992, p. 7) argues that: “This may seem to be a simple-minded requirement, but it is at this step that many scale development efforts go astray”. DeVellis adds that theory is a great aid to clarity and recommends that social science theories should always be considered before developing a scale. If there is no theory available to guide the research, a conceptual framework must be developed before developing the scale instrument.

In contrast to this, Du Plessis and Hoole (2006) suggest that a tentative theoretical model be developed with a specific set of defined measures that the researcher has applied his or her mind to. This is not a process of trial and error, but a process wherein the researcher has taken an active view on the number of dimensions, the content domains, the population being researched and applicable environmental factors. The old adage of less is more is proposed, whereby the researcher is firm as to what is within the scope of the research and what is not. DeVellis (2003, p. 62) supports this by stating that “Scale developers should ask themselves if the construct they wish to measure is distinct from other constructs”. Therefore, researchers should make sure that the underlying construct is well defined and is focused on the main purpose.

3.7.2 Step 2: Generating an item pool

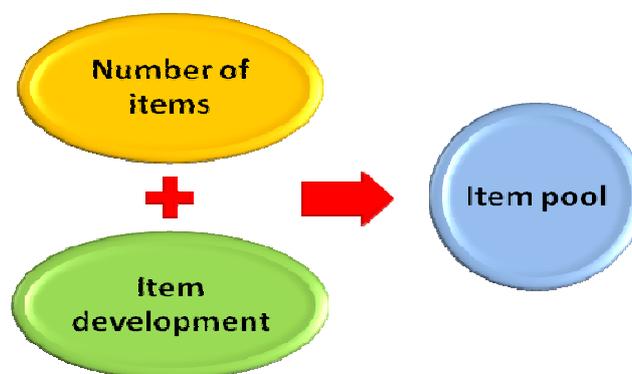
The key to successful item generation, according to Hinkin (1998), is a well-articulated theoretical underpinning, specifying the content area for the new measure. The aim of the researcher, at this point, is to develop items that will result in measures that sample the theoretical area of interest to reveal content validity. Ghiselli, Campbell, and Zedeck (1981) emphasise that the sample of items drawn from the potential items should adequately represent the construct under examination. DeVellis (2003) supports this by stating that each content area must be well represented in the initial item pool. He also

suggests that multiple items will constitute a more reliable test than individual items, but each must still be sensitive to the true score of the latent variable.

Hinkin (1998) suggests that if the theoretical foundation provides enough information to generate the initial set of items, the deductive approach should be followed. This approach requires an understanding of the phenomenon to be investigated and a thorough review of the literature to develop the theoretical definition of the construct under examination. This definition is then used as a guide for the development of items (Schwab, 1980).

Hinkin (1998) discusses several advantages and disadvantages of the deductive approach. An advantage of the deductive approach to scale development is that if properly conducted, it will help to assure content validity in the final scales. Through the development of adequate construct definitions, items should capture the domain of interest. The disadvantages of the deductive approach are that it is very time-consuming and requires that researchers have a working knowledge of the phenomena under investigation. In most situations in which theory does exist, the deductive approach would be most appropriate. The two aspects that need to be taken into consideration when generating the item pool, namely the number of items and the item development process, are displayed in Figure 3.5

Figure 3.5: Generation of the item pool



(Author's own)

- **Number of items**

Worthington and Whittaker (2006) state that scale development studies sometimes include as many as three to four times the number of items that will eventually end up on the instrument. However, Schmitt and Stults (1985) and Schriesheim and Eisenbach (as cited in Hinkin, 1998) state that limiting the number of items in the instrument reduces response bias caused by boredom and fatigue. Additional items result in more analysis and increase the analytics applied to the instrument, while not adding more to scale reliability (Carmines & Zeller, 1979). Harvey, Billings, and Nilan (1995) suggest that at least four items per scale are needed to test the homogeneity of items within each latent construct. Cook, Hepworth, and Warr (1993), however, found that reliable internal consistency can still be achieved with fewer than four items for each latent construct. Churchill (1979) posits that it is essential to ensure that the research domain has been sufficiently sampled, as inadequate sampling is a major source of measurement error. Thurstone (1947) points out that scales should possess simple structure, or parsimony. Not only should any one measure have the simplest possible factor structure, but any scale necessitates the contribution of a minimum number of items that adequately tap the domain of interest. These findings would suggest that the ultimate goal will be the retention of four to six items for most constructs, but the final determination must be made only with accumulated evidence in support of the construct validity of the measure.

- **Item development**

Hinkin (1998) and DeVellis (2003) provide scale developers with a number of guidelines that they should follow in writing items. Statements should be simple and as short as possible. Scale developers should avoid using exceptionally lengthy items, as length usually increases complexity and diminishes clarity. The language used should be familiar to target respondents. Items that determine behaviour and items that determine affective responses should not be combined, therefore all items should be kept uniform in terms of perspective (Harrison and McLaughlin, 1993). Items should focus on a single

issue; a “double-barrelled” item may lead to misunderstanding on the part of the respondents because it represents two constructs. Little variance will be generated if items are structured in such a manner that respondents answer the items in the same way, therefore these types of question should be avoided as well. Avoid leading questions, as they may lead to biased responses. The reason for wording items both positively and negatively (reversed-score items) within the same scale is usually to avoid an affirmation, acquiescence or agreement bias (i.e., a respondent’s tendency to agree with items, irrespective of their content). Some researchers, such as Price and Mueller (1986) argue that the use of reversed-score items may reduce bias in responses. Others, such as Harrison and McLaughlin (1993), however, have found that the use of a few of these items randomly interspersed within a measure may have a detrimental effect on the psychometric properties of the measure. Reversals in item polarity may be confusing to respondents, so if the researcher does choose to use reversed-score items, they must be very carefully worded, and careful attention should be paid to factor loadings and communalities at the factor analytical stage of scale development (Schriesheim, Eisenbach & Hill, 1989).

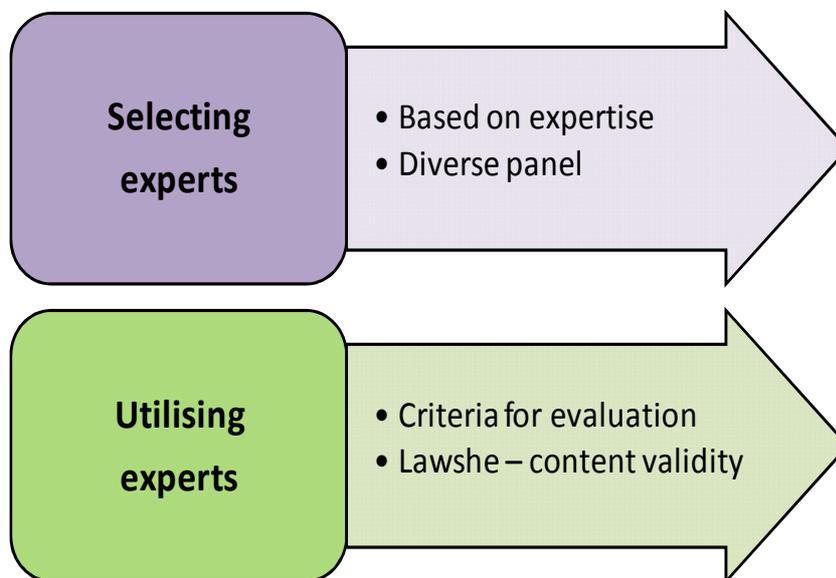
3.7.3 Step 3: Determining the format for measurement

Stone (1978) argues that the effectiveness of statistical analysis is a direct result of the variance among the respondents in a research population. Scaling techniques have been extensively developed by writers such as Guttman, Thurstone, and Likert. DeVellis (2003) points out that Likert-type scales are the most frequently used in instruments measuring opinions, beliefs, and attitudes. They are also most suitable for use in factor analysis. Six possible responses are frequently included, such as *strongly disagree*, *moderately disagree*, *mildly disagree*, *mildly agree*, *moderately agree* and *strongly agree*. The use of this five-point scale increases reliability to a certain point before it starts to level off, according to Lissitz and Green (1975). However, mid-range options can result in respondents’ choosing the middle options, whereas equal number options can result in respondents’ falling on one side.

3.7.4 Step 4: Having the initial item pool reviewed by a pool of experts

After items have been generated, they should be subjected to an assessment of content validity. The validity of research content is a critical element in the development of instrument measurement, according to Grant and Davis (1997). Hinkin (1998) states that this process serves as a pre-test, permitting the deletion of items that are deemed to be conceptually inconsistent. This judgment quantification process entails asking a specific number of experts to evaluate the validity of items individually, as well as the entire instrument. Grant and Davis state that it is important to report on the characteristics and qualifications of the experts as well as on the process they are asked to use to assess validity. According to them, the soundness of the validation process is significantly influenced by how content experts are chosen and utilised for instrument development. The two aspects that play an important role in this step, namely, how to select the panel of content experts and how to utilise them, are displayed in Figure 3.6.

Figure 3.6: Panel of experts



(Author's own)

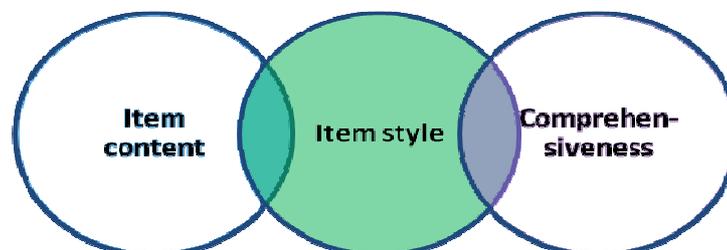
- **Selecting a panel of content experts**

Grant and Davis (1997) stipulate the necessity for content experts to have the relevant training, qualifications, and experience. According to Grant and Kinney (1992), the following could serve as criteria in selecting content experts: publications in refereed journals, national presentations, and research on the phenomenon of interest. Davis (1992) suggests that if a clear theoretical basis for the instrument is provided, panel members might be selected based on their expertise related to the conceptual framework. It is often difficult to find individual content experts who meet all criteria. Therefore, various content experts should be asked to judge the instrument on the different aspects. Authorities differ on the number of content experts needed for a panel. According to Lynn (1986), a minimum of three content experts are needed, but others (Gable & Wolf, 1993; Waltz, Strickland, & Lenz, 1991) recommend from two to twenty panel members.

- **Utilising the panel of experts**

Experts should be provided with the conceptual theoretical basis for the instrument. The relevant dimensions of the constructs to be used in the instrument should be included in the conceptual definitions. Grant and Davis (1997) suggest that the pool of experts validate the initial pool of items in terms of the criteria displayed in Figure 3.7.

Figure 3.7: Expert evaluation criteria



(Author's own)

Item content Experts should judge how representative individual items are of the content area and whether the content area sufficiently measures all dimensions of the construct. Lynn (1986) suggests that content experts should be asked to suggest amendments of items that are not consistent with conceptual definitions or are not representative of the content.

Item style Experts can be asked to evaluate the items' clarity and conciseness. The content of an item may be relevant to the construct, but respondents may provide incorrect data because directions for using the instrument, the items, or response scale are ambiguous. Reviewers could be asked to indicate complex or confusing items and should suggest substitute wordings.

Comprehensiveness Lastly, the panel of experts should be asked to evaluate the total instrument for comprehensiveness. If the instrument is comprehensive, all the dimensions of the desired content area of the concept will be included. In judging the whole instrument, the panel of experts evaluate whether the entire set of instrument items is sufficient to represent the total content area. This will allow the scale developer to identify items needed to be added to the content area, or deleted since they do not present the content area.

Lawshe's (1975) quantitative approach to the content validity of items will be applied in this study. The judgment of content experts is regarded as the highest authority to test the alleged content validity of an instrument.

The content validity ratio (CVR) is an item statistic that is functional in the rejection of specific items from the initial item pool and the calculation of the content validity index (S-CVI/Ave – the mean of the CVR values retained in the test) for the entire item pool. Polit, Beck and Owen (2007) recommend that unless only minor revisions are needed based on the first round results, a second round of expert review should be conducted. A smaller group of experts (3-5) can be used to evaluate the relevance of the revised set of items in the second round. According to Lynn (1986), these second round of

experts can be drawn from the same pool as in the first round, or they can also be a new panel.

3.7.5 Step 5: Administering items to a development sample

Items should then be presented to a sample representative of the actual population of interest. The goal should be to analyse how well the items confirm the psychometric property expectations of the newly developed measure. Hinkin (1998) suggests that it is important to examine the relationship between the newly developed scale and other established measures to assess the “nomological network”. Therefore, the newly developed instrument should be administered along with other existing measures. Theory should serve as a guideline, indicating those variables which the new measures should correlate with, or which they should be independent of. These other measures will be employed later in successive analyses to provide initial evidence of criterion-related, convergent, and discriminant validity, and thus the construct validity of the new scales.

- **Sample size**

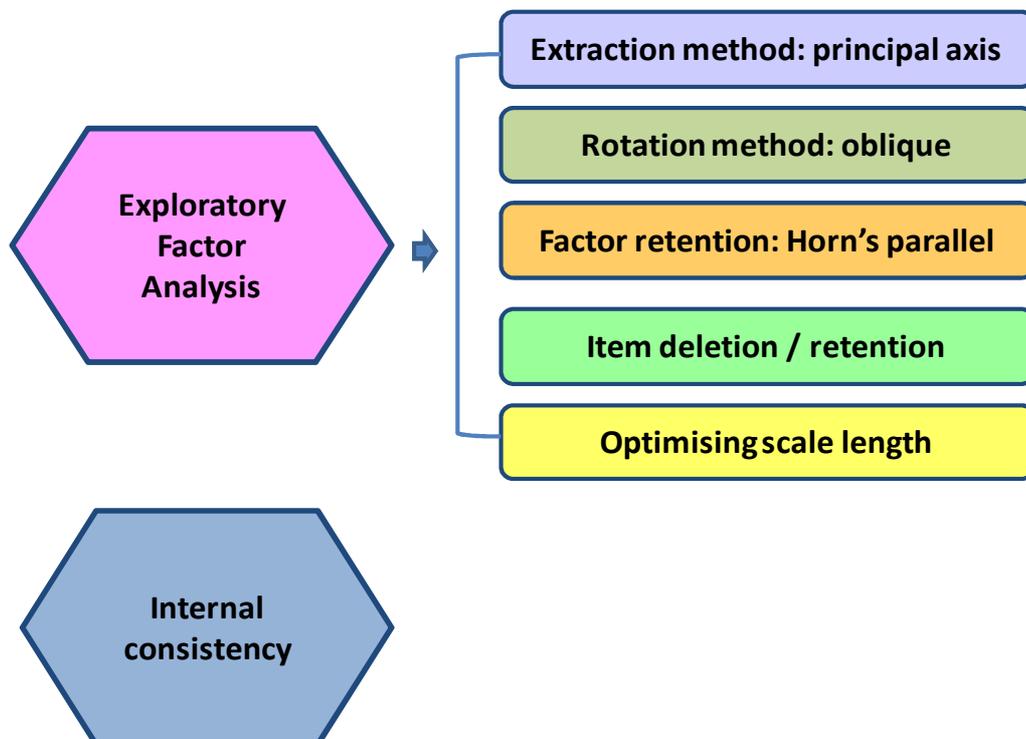
The selection of a suitable sample is crucial, to guarantee enough variance in responses and prevent the effects of an irregular context. Hinkin (1998) recommends that the sample used for the subsequent data collection should be of ample size and be representative of the population of interest. This sample should also be clearly described. According to DeVellis (2003), there are risks involved when using too small a sample. Firstly, patterns of covariance may not be stable, as likelihood may considerably influence correlations between items when the ratio of participants to items is fairly low; and secondly, the development sample may not adequately represent the intended population. Worthington and Whittaker (2006) offer the following guidelines with regard to sample size:

1. Sample sizes of at least 300 are usually sufficient in most situations.
2. Sample sizes between 150 and 200 are expected to be sufficient with data sets containing communalities higher than .50, or with 10:1 items per factor with loadings at around .4.
3. Smaller samples may be sufficient if all communalities are .60 or greater, or with at least 4:1 items per factor and factor loadings greater than .6.
4. Sample sizes of less than 100 or fewer than 3:1 participant-to-item ratios are normally insufficient.

3.7.6 Step 6: Initial item reduction

The two aspects that play an important role in item reduction, namely exploratory factor analysis (EFA) and internal consistency are displayed in Figure 3.8.

Figure 3.8: Initial item reduction



(Author's own)

- **Exploratory factor analysis**

Exploratory factor analysis (EFA) is associated with theory development. According to Worthington and Whittaker (2006), EFA is a technique used to identify a smaller number of factors from a large number of observed variables (or items). EFA is used to assess the construct validity of an instrument during the initial development phase. After the development of an initial set of items, EFA is employed to explore the underlying dimensionality of the item set. This will allow researchers to group a large item set into meaningful subsets that measure different factors. EFA allows items to be related to any of the factors underlying examinee responses. Consequently, this allows the scale developer to identify items that do not measure an expected factor or that simultaneously measure multiple factors, in which case they could be poor indicators of the desired construct and should be eliminated from further consideration (Worthington & Whittaker, 2006).

EFA is particularly susceptible to sample size effects. Bartlett's (1950) test of sphericity can be utilised to estimate that correlations in a matrix are zero. However, according to Tabachnick and Fidell (2007), because of its sensitivity and dependence on sample size, this test is likely to be significant for large samples with relatively small correlations. Therefore, they recommend using this test only if there are fewer than about five cases per variable. Worthington and Whittaker (2006) recommend that researchers provide additional evidence for scale factorability in studies with cases-per-item ratios higher than 5:1.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is also useful for evaluating factorability. This measure of sampling adequacy shows the degree to which a correlation matrix in fact contains factors or simply chance correlations between a small subset of variables. Values of 0.60 and higher are required for good factor analysis (Tabachnick & Fidell, 2007).

Extraction methods The two most commonly known and studied factor-extraction methods are principal-components analysis (PCA) and common-factors analysis (FA). The purpose of PCA is to reduce the number of items while retaining as much of the original item variance as possible. FA assesses the latent factors of constructs that are indicative of the shared variance between items. Therefore, Worthington and Whittaker (2006) suggest that the purpose of FA is more closely aligned with the development of new scales. There are several techniques of FA, including principal-axis factoring, maximum likelihood, image factoring, alpha factoring, and unweighted and generalised least squares. Gorsuch (1997) recommends principal axis factoring.

Criteria for determining rotation method There are two types of FA rotation methods, namely orthogonal and oblique. Orthogonal rotations are used when the set of factors underlying a given item set are assumed or known to be uncorrelated. Oblique rotations are used when the factors are assumed or known to be correlated (Worthington & Whittaker, 2006). Byrne (2005) provides three reasons why oblique rotation is considered preferable to orthogonal rotation. Firstly, in psychological research overall, the constructs and/or their multiple dimensions are expected to be correlated based on theoretical and empirical grounds. As such, a simple structure based on oblique rotation will yield inter-factor relations that are more practical than those from one based on orthogonal rotation. According to Byrne (2005), a factor analytic solution that is based on orthogonal rotation when, in fact, total independence among the factors is unnecessary, will cause estimates that are rigorously deceptive. Secondly, Floyd and Widaman (1995) suggest, given that an optimally derived sample structure shows that the factors are truly orthogonal, an oblique rotated factor solution will still reflect these independent factor relations. Thirdly, as mentioned by Fabrigar, Wegener, MacCullum, and Straham (1999), the information generated by oblique rotations is broader than is the case for orthogonally rotated solutions, given that oblique rotations routinely generate factor correlation estimates. Furthermore, Byrne (2005) notes that evidence of such factor correlations suggest the possibility of one or more higher-order factors. Since factor solutions based on orthogonal rotation do not

yield factor correlation estimates, they are unable to reveal the possibility of a hierarchical factor structure.

Criteria for factor retention According to Hinkin (1998), the two components for determining the number of factors to be retained must include underlying theory and qualitative results. The theory will examine the loading on latent factors which will confirm the researcher's expectations. The most widely known approaches for estimating the number of factors for a given item set were recommended by Kaiser (1960) and Cattell (1966) on the basis of the eigenvalues, which will determine the importance of a factor and indicate the amount of variance in the entire set of items accounted for by a given factor. Kaiser believed that eigenvalues of less than 1.0 reflect potentially unstable factors, because the variance that each standardised variable contributes to principal component extraction is 1.0. According to Ledesma and Valero-Mora (2007) and Zwick and Velicer (1982), the K1 method proposed by Kaiser (1960) demonstrated a tendency to often overestimate the number of factors.

Cattell's scree test (1966) estimates the correct number of factors to be examined during factor analysis. This is done by using the descending value of eigenvalues to establish a change in the size of eigenvalues prior to horizontal levelling. According to researchers (Hayton, Allen & Scarpello (2004); Ledesma & Valero-Mora (2007); Zwick & Velicer (1982)), the scree test is criticised for its subjectivity and ambiguity, given that there is no objective definition of what the cut-off points between the important and insignificant factors should be. The graph may be difficult to interpret, especially if cases present various drops and possible cut-off points (Ledesma & Valero-Mora, 2007).

Velicer (as cited in Ledesma & Valero-Mora, 2007)), suggests the MAP (Minimum Average Partial) test – a method based on the partial correlations matrices. In this method the EFA concept of "common" factors is employed to determine the number of components to extract. The method seeks out what components are common, and is proposed in general to find the best factor solution, rather than to find the cut-off point for the number of factors. According to Zwick and Velicer (1986), although the MAP has

proved to be accurate under many conditions, under certain conditions it seems to reveal a tendency to underestimate the number of factors.

Zwick and Velicer (1986) compared the five different methods (Bartlett's Chi-Square test, Kaiser's greater-than-one rule, Cattell's Scree, Velicer's MAP and Horn's parallel analysis) for determining the number of factors to retain, and came to the conclusion that Horn's parallel method was the most accurate (92% of the time) of the five methods evaluated. Therefore, the researcher decided to employ Horn's parallel analysis (1965) for the purposes of this study. This method randomly orders the participants' item scores and conducts a factor analysis on both the original data set and the random ordered scores. The number of factors to retain is determined by comparing the eigenvalues determined in the original data set and in the randomly ordered data set. A factor should be retained if the original eigenvalue is larger than the eigenvalue from the random data.

Worthington and Whittaker (2006) suggest that researchers should retain a factor only if they can interpret it in a meaningful way, no matter how solid the evidence is for its retention, based on the empirical criteria earlier stated.

The larger the number of items on a factor, the more confidence the researcher will have that it will be a reliable factor in future studies. Tabachnick and Fidell (2007) counsel against retaining factors with fewer than three items. According to them, it is possible to retain a factor with two items only if the items are highly correlated (i.e., $r > .70$) and relatively uncorrelated with other variables.

Criteria for item deletion or retention Parsimony and simple structure are desired for scales; therefore, researchers should only retain those items that clearly load on a single appropriate factor. According to Hinkin (1998), the objective is to identify those items that most clearly represent the content domain of the underlying construct. Hair, Black, Babin, Anderson, and Tatham (2006) suggest that factor loadings of .30 to .40 are minimally acceptable, but that values greater than .50 are generally

considered necessary for practical significance. Worthington and Whittaker (2006) suggest that researchers should delete items with factor loadings of less than .32, or items with cross-loadings less than a .15 difference from an item's highest factor loading. In addition, items that contain absolute loadings higher than a certain value (e.g., .32) on two or more factors should also be deleted. Hinkin (1998) suggests that it is also important to report the percentage of the total variance that is explained; the larger the percentage the better. According to Hayton et al. (2004), as many common factors as possible should be kept to explain at least 50% of the variance in the data set. At this stage, items with inappropriate loadings were deleted, and the analysis repeated, until a clear factor structure matrix that explained a high percentage of total item variance was obtained.

Optimising scale length According to DeVellis (2003), a scale's alpha is influenced by two characteristics, namely the extent of covariation among the items and the number of items in the scale. Longer scales tend to be more reliable, but Converse and Presser (1986) recommend that questionnaires take no longer than 50 minutes to complete. Worthington and Whittaker (2006) notice that scales that take longer than about 15 to 30 minutes to complete might become problematic, depending on the respondents, the intended use of the scale, and the respondents' motivation regarding the purpose of administration. Shorter scales are good in the sense that they place less of a burden on respondents. Maximising one of these assets reduces the other. Scale developers must try to optimise the length of subscales by deleting items that have low factor loadings or high cross-loadings. Similarly, items that contribute little to internal consistency should also be removed. The challenge in scale development optimisation is not to degrade the quality of the factor structure, inter-correlations, loadings and cross-loadings. A final EFA must be performed to confirm factor solution has not changed due to the deleted items.

- **Internal consistency assessment**

Kerlinger (1986) defines reliability as the accuracy or precision of a measuring instrument that is a necessary condition for validity. Gerbing and Anderson (1988) suggest that the reliability of a measure should be assessed after unidimensionality has been established. There are a number of ways of calculating reliability, but the most appropriate accepted measure in field studies is internal consistency reliability using Cronbach's alpha (Price & Mueller, 1986). Cortina (1993) recommends the use of this statistic, especially when used in conjunction with factor analysis. Hair et al. (2006) argue that items with an alpha correlation of .70 and higher are viewed as acceptable, but indicate that alpha correlations of .60 are also acceptable in exploratory research. Hinkin (1998) suggests that since the unidimensionality has been confirmed, the researcher can remove items that do not contribute to, or devalue the reliability of the developed scales. The sensitivity of alpha to the number of items in the measure, according to Cortina, will remain high, regardless of the low inter-correlation and multi-dimensionality. In contrast to Hair et al., Cortina suggests that an alpha correlation of .70 should serve as an absolute minimum for newly developed measures, and that through appropriate use of factor analysis, the internal consistency reliability should be considerably higher than .70. According to Hinkin, reporting of internal consistency should be considered necessary.

3.7.7 Step 7: Confirmatory factor analysis

Confirmatory factor analysis (CFA) is often used during the scale development process to help support the validity of a scale following an EFA. A CFA should be performed in the first place to confirm that observed variables sort themselves into factors corresponding to the latent variables and in the second place to examine in general the quality of the solution and the specific factor loadings that represent the measurement model (Kelloway, 1998). Hinkin (1998) recommends that CFA from an independent sample should be conducted using the item variance-covariance matrix computed from data collected from the independent sample. Krzysowiak et al. (1988) suggest that if the

initial sample was large enough, the sample could randomly be split in half and parallel analyses for scale development could be conducted, using exploratory and confirmatory factor analysis. The purpose of the analysis is twofold. Firstly, the analysis assesses the goodness of fit of the measurement model, comparing a single common factor model with a multi-trait model with the number of factors equal to the number of constructs in the new measure (Jöreskog & Sörbom, 1989). The multi-trait model restricts each item to load only on its appropriate factor. Secondly, the analysis examines the fit of individual items within the specified model using the modification indices and *t* values.

The chi-square statistic allows the assessment of fit of a specific model as well as the comparison between two models. The smaller the chi-square, the better the model fit. Carmines and McIver (1981) suggest that an acceptable chi-square is two to three times as large as the degrees of freedom, but the fit is considered better the closer the chi-square value is to the degrees of freedom for a model. However, Ullman (2001) suggests that two or less reflects good fit, while Kline (1998) notes that three or less is acceptable. A non-significant chi-square is desired. This will indicate that differences between the model-implied variance and covariance and the observed variance and covariance are small enough to be due to sampling fluctuation. Chi-square is very sensitive to sample size, with the result that a model with a large chi-square may still have a good fit if the fit indices are high. Therefore, the chi-square statistic must be used with caution, and other multiple-fit indices should be used to assess a model's goodness-of-fit. Bentler (2007) proposes that the standardised root mean square residual (SRMR) should be reported, accompanied by at most two other indices of fit, such as the comparative fit index (CFI).

Values for the SRMR less than .10 are generally indicative of acceptable fit. Values for the root mean square error of approximation (RMSEA) at or less than .05 indicate close model fit, which is customarily considered acceptable (Hu & Bentler, 1999). Brown and Cudeck's (1993) general guideline for RMSEA values states that a result of .05 and smaller confirms that the model developed and the research data have an acceptable correlation. The CFI values should be equal to or greater than 0.95, according to Hu

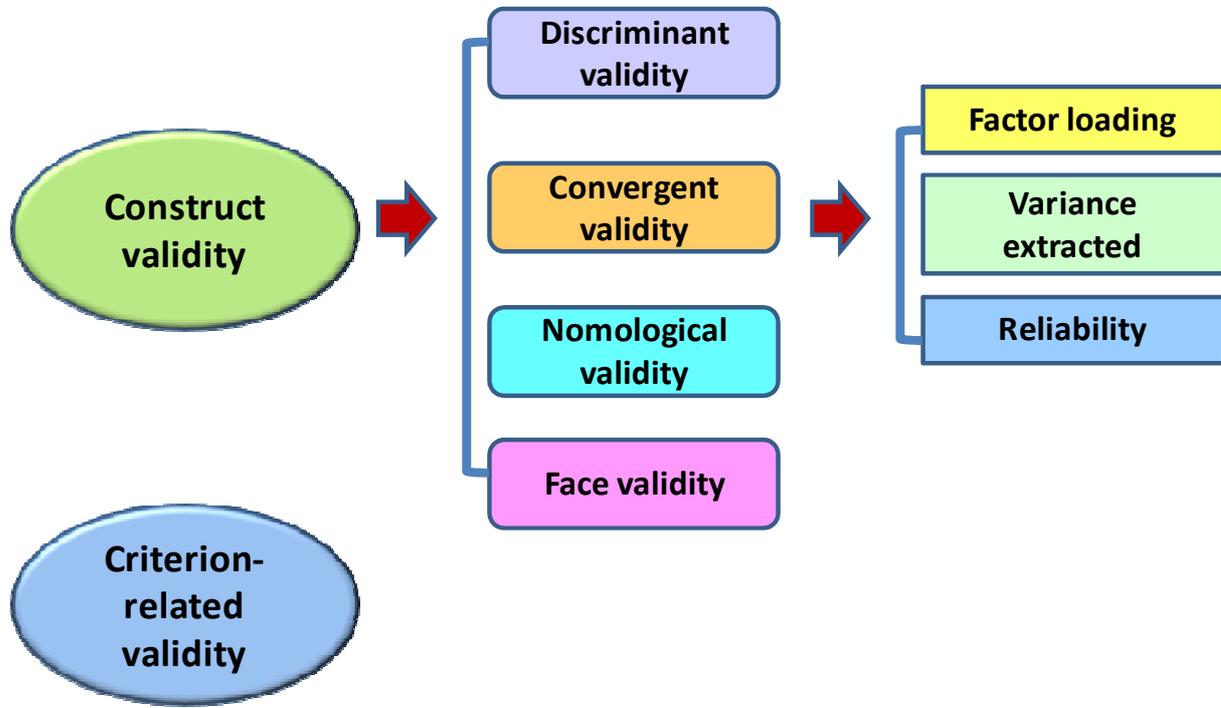
and Bentler (1999), for the model to be accepted. RMSEA and CFI are less sensitive to sample size; however, SRMR tends to be lower due to larger sample size (Garson, 2002).

In summary, CFA allows the researcher to quantitatively assess the quality of the factor structure, providing further evidence of the construct validity of the new measure. Results should include at the minimum the chi-square value and the associated degrees of freedom, and the recommended goodness-of-fit indices used for each competing model. One of the biggest advantages of CFA is its ability to assess the construct validity of a proposed measurement theory. The CFA must not only provide acceptable fit, but must also show evidence of construct validity (Hair et al., 2006).

3.7.8 Step 8: Convergent and discriminant validity

Construct validity indicates the degree to which a set of measured items truly represents the theoretical latent construct those items are designed to measure. According to Hair et al. (2006), construct validity is made up of four important components, namely convergent validity, discriminant validity, nomological validity and face validity, which are displayed in Figure 3.9.

Figure 3.9: Construct validity and criterion-related validity



(Author's own)

Convergent validity The items that are indicators of a specific construct should share a high proportion of variance, known as convergent validity. The relative amount of convergent validity among item measures can be estimated by studying the factor loadings, the amount of variance extracted and reliability.

According to Garson (2002), it is important to take the size of the factor loading into account. In the case of high convergent validity, high loadings would indicate that the items meet at some common point. Standardised loadings should be .5 or higher, ideally .7 or higher.

With CFA, the average percentage of variance extracted (VE) among a set of construct items is a summary indicator of convergence (Fornell & Larcker, 1981). VE should be .5 or greater to suggest adequate convergent validity.

Reliability is also an indicator of convergent validity. In this study, the most common form of internal consistency reliability, Cronbach's alpha, was used to ascertain the reliability, as recommended by Gregory (2004). Reliability should be .7 or higher to indicate adequate convergence or internal consistency. Reliability between .6 and .7 may be acceptable, provided that other indicators of a model's construct validity are good (Hair et al., 2006). In order to improve the reliability coefficients of the analysis and to prevent cancelling out variables with positive and negative loadings, a reversal of original negative items was done.

Discriminant validity Discriminant validity is the extent to which a construct is truly distinct from other constructs. In this particular study, discriminant validity was determined by comparing the variance-extracted percentages for any two constructs with the square of the correlation estimate between those two constructs. If the variance extracted estimates were greater than the squared correlation estimate (Fornell & Larcker, 1981), discriminant validity was illustrated.

Face validity Face validity is an evaluation of the extent of equivalence between the items selected to form a summated scale and their conceptual definition (Hair et al., 2006). According to Hair et al., when CFA is done, face validity must be established prior to any theoretical testing. A measurement theory cannot be correctly specified without a clear understanding of each item's content or meaning. This content validity was already established in step 4 of the scale development process, where the items were subjected to the scrutiny of a pool of experts.

Nomological and criterion-related validity According to Hair et al. (2006, p. 138), nomological validity "determines whether the scale demonstrates the relationships shown to exist based on theory or prior research". Cronbach and Meehl (1955) suggest that the relationships between the newly developed scale and other measures with which they could be hypothesised to relate to develop a nomological network should be examined and criterion-related validity should be established. These relationships

should be based on existing theory and may be examined using correlation or regression analysis. Evidence of criterion-related validity will be provided if the hypothesised relationships attain statistical significance. In this study, psychological ownership will be correlated with organisational commitment, job satisfaction and intention to stay. Empirical evidence for a positive relationship between psychological ownership and job satisfaction were found by Buchko (1993), Vande Walle et al. (1995), Van Dyne and Pierce (2004), Mayhew et al. (2007) and Avey et al. (2009). O’Driscoll et al. (2006), Mayhew et al. (2007) and Avey et al. (2009) have confirmed a strong association between affective organisational commitment and psychological ownership of the organisation. Avey et al. (2009) found a positive relationship between psychological ownership and employees’ intention to stay in the organisation.

Construct validity To further investigate evidence of construct validity independent sample *t*-tests and the analysis of variance (ANOVA) technique were conducted to assess whether employees varying in biographical variables (age, gender, ethnic group, education, the sector in which their organisation operates, level in the organisation and registration with a professional board) differ significantly with regard to their feelings of psychological ownership for the organisation, as well as with regard to the specific dimensions underlying the concept of psychological ownership. Independent sample *t*-tests were used to test whether significant differences exist between the means of two groups, and where several independent variables were compared, the analysis of variance (ANOVA) technique was used.

Thompson (as cited in Vacha-Haase & Thompson, 2004, p. 473) states that statistical testing cannot evaluate result importance, although statistical significance “evaluates the probability or likelihood of the sample results, given the sample size, and assuming that the sample came from a population in which the null hypothesis is exactly true”. Lately, more emphasis has been placed on the reporting of effect-sizes. According to Vacha-Haase & Thompson (2004), the fifth edition of the *Publication Manual* of the American Psychological Association, 2001, accentuates the fact that researchers should provide readers not only with information about statistical difference but should

also give adequate information to calculate the size of the observed effect of the relationship. Therefore, it is important to report effect-sizes, which will give an indication of the practical significance of study results.

In this study, effect-sizes were measured by calculating Cohen's d (1992) for two independent groups, and the most widely-used effect-size measure for ANOVA, partial eta-squared, was calculated. Cohen's d (1992) is defined as the difference between the means divided by the standard deviation of either group. Partial eta-squared is described by Pierce, Block and Aguinis (2004) as the proportion of total variation in the dependent variable accounted for by the variance between groups formed by the independent variables. Partial eta-squared values range from 0 to 1. Cohen (1992) provided the following regression benchmark for effect-sizes: $d = .20$ is a minimal solution and therefore has a small effect; $d = .50$ is a medium effect; anything equal to or greater than $.80$ is a large effect-size.

In sum, according to Cronbach and Meehl (1955), the demonstration of construct validity of a measure is the ultimate objective of the scale development. Therefore, attempts to demonstrate convergent, discriminant, nomological, face, and criterion-related validity should be sufficiently and clearly reported.

3.8 DATA COLLECTION

Data was obtained by means of self-administered questionnaires. According to Babbie and Mouton (2001, p. 646), a questionnaire is a document that contains “questions and other types of items designed to solicit information appropriate to analysis”. After the compilation of a measure for psychological ownership, it was electronically distributed to the participants via the organisation's intranet or e-mailed to employees. In some instances, questionnaires were administered on hard copy to maximise the response rate. This survey method of collecting data was deemed appropriate because it is relatively inexpensive, it is not too time consuming, it eliminates the need for assistants, and data entry is automated (Saunders et al., 2005). An additional benefit of

electronically self-administered questionnaires is that respondents can easily be reached via electronic communication, regardless of their geographical position, and they can be sent, completed and returned immediately. This electronically self-administered questionnaire allowed respondents to complete the questionnaire anonymously. The questionnaire was developed with Lime Survey software and respondents were provided with a web-link to complete the questionnaire via the internet. The completed questionnaire was saved on the web-provider server without their e-mail addresses, thus ensuring respondents' anonymity. Anonymity will increase participants' honesty, and the researchers' bias based on the respondents' personal information will be eliminated. The features of the electronically self-administered questionnaire are described in Table 3.8.

Table 3.8: Features of an electronic self-administered questionnaire

Feature	Internet and intranet questionnaire
Population's characteristics for which suitable	Computer-literate individuals who can be contacted by e-mail or intranet
Confidence that right person has responded	High if using e-mail
Probability of contamination or distortion of respondent's answer	Low
Size of sample	Large, can be geographically dispersed
Feasible length of questionnaire	Fewer 'screens' seems to be better
Likely response rate	Variable, 30% reasonable within organisations/via intranet
Suitable question types	Closed, but not too complex questions that are of interest to the respondent
Completion time	2-6 weeks from distribution
Financial resource implications	Low costs
Role of interviewers or field workers	None
Data input	Usually automated

Source: Saunders et al. (2005, p. 358)

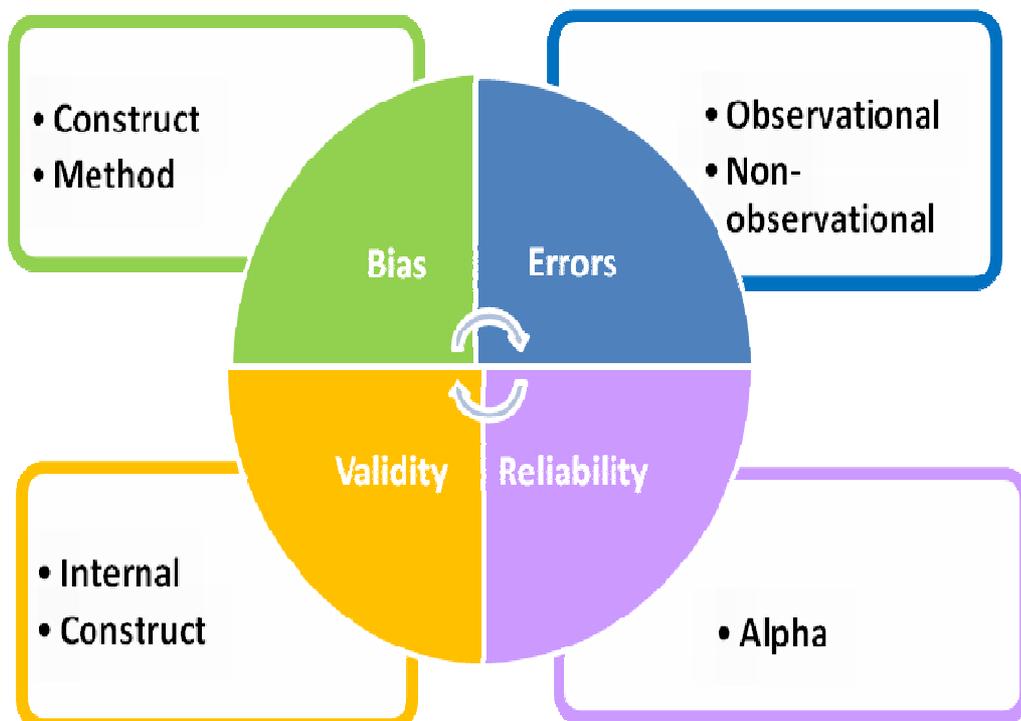
Some disadvantages of this approach are that the researcher is not available to implement quality control relating to the answering of questions or the quality of the

responses presented. Other potential limitations are that the questionnaire should be carefully designed, that the asking of open questions is usually not practical and that the possibility of prompting and exploring issues in further detail is not possible (Saunders et al., 2005).

3.9 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE RESEARCH DESIGN

The research process should be correctly described and transparent, to demonstrate that rigour is present and that the research results are accurate and that they can be generalised. This section will subsequently describe the various aspects of bias, errors in human inquiry, validity and reliability that were taken into consideration when conducting the research, as illustrated in Figure 3.10.

Figure 3.10: Rigour of the research design



(Author's own)

3.9.1 Bias

Bias is described as any form of influence, condition or set of conditions that separately or mutually influence the credibility of data (Van de Vijver & Tanzer, 1996). Bias can occur unnoticed and attacks the truthfulness of the results and findings of the research study. Three kinds of bias can be distinguished, namely: *construct bias*, *method bias* and *item bias*.

- **Construct bias**

According to Van de Vijver and Leung (1997), when the construct does not have the same meaning across cultural groups and when only a partial overlap in the definitions of the constructs across cultures exists, construct bias will probably be present. Construct bias can also occur due to poor sampling of all relevant behaviours associated with the construct. Bias in terms of construct validity probably exists when an instrument measures different attributes for one group than for the other, or when the instrument is measuring the same attribute but with different degrees of accuracy. The employment of factor analysis, followed by target rotation and an evaluation of the factorial agreement across the samples, could determine the presence of construct bias in this study. Tucker's coefficient of agreement (Tucker's phi) is most frequently employed where values larger than .90 are often taken to indicate equivalent factors.

- **Method bias**

There are three types of method bias that can occur: *sample*, *administration* and *instrument bias*.

Sample bias According to Van de Vijver and Tanzer (1996), sample bias occurs when the samples used differ in a variety of relevant characteristics other than the target constructs. Sample bias may be caused by a lack of comparability of samples or differential stimulus familiarity.

Administration bias All source of bias that is caused by the form of administration is called administration bias (Van de Vijver & Tanzer, 2004). Different situations can lead to administration bias, including differences in physical conditions, social conditions, environment administration conditions, differential expertise of administrators, ambiguous instructions for respondents, communication problems between the respondent and the tester, and halo effects of the tester. The researcher tried here to limit administration bias by using electronically distributed questionnaires. The researcher ensured that all the instructions were clear and concise. Respondents were asked for their consent (the consent form can be viewed in Annexure B). The questionnaire was set in such a manner that the respondents should respond to all the items.

Instrument bias Predictive validity is one of the most crucial forms of validity in relation to instrument bias. According to Van de Vijver and Tanzer (2004), instrument bias may be caused by differential awareness of stimulus material, response procedures and differential response styles. The researcher aimed to limit instrument bias by consulting a diverse group of experts.

3.9.2 Errors in human inquiry

Groves (as cited in Umbach, 2005) classifies errors into two general categories: observational and non-observational. Observational errors occur in the measurement process of the survey life cycle and are deviations in a respondent's answers from the true values on a measure; they include measurement error and processing error. Non-observational errors occur in the representation process of the survey life cycle and arise when survey researchers do not take measurements on the part of a population. There are four types of non-observational error in survey research, namely coverage, sampling, non-response and adjustment error. The types of error that occur are summarised in Table 3.9.

Table 3.9: Error in survey research

Type of error	Definition	Suggestions for reduction
Observational error		
Measurement error	When a respondent's answer to a survey question is inaccurate, imprecise, or cannot be compared in any useful way to other respondents' answers. Often the result of poor wording of questions and construction of questionnaires	<ul style="list-style-type: none"> • Have a defined objective • Pay attention to question wording • Evaluate the survey questions by consulting with experts and pre-testing the questionnaire
Processing error	Is introduced after the data has been collected and prior to the analysis. Most common ones are coding, data entry, and outliers	<ul style="list-style-type: none"> • Avoid open-ended questions • Search for outliers
Non-observational error		
Coverage error	Occurs when the sampling frame does not match the population because some members of the population did not have a chance to be included in the sample	<ul style="list-style-type: none"> • Maintain good data • Take careful consideration in the mode of selection
Sampling error	Arises when the sample does not match the sample frame. Is present in every sample survey because statistics calculated on the survey data are only a subset of the population	<ul style="list-style-type: none"> • Determine an appropriate sample size • Report confidence intervals
Non-response error	<i>Unit non-response</i> : when a member of the sample does not respond to the survey <i>Item non-response</i> : when the respondent does not answer one or more survey questions	<ul style="list-style-type: none"> • Use multiple contacts • Draw a sample • Know the population • Ensure respondents match the population • Keep the questionnaire short
Adjustment error	Arises from efforts to reduce errors of non-observation (coverage, sampling, and non-response). Similar to processing error	<ul style="list-style-type: none"> • Consider the use of weights • Be thoughtful in the handling of missing data

Source: Adapted from Umbach (2005, p. 94)

Umbach (2005) notes that no survey study is error free therefore researchers must be conscious of the possibility of error and bias at every stage of the survey life cycle and consider ways to reduce and eliminate them without incurring large costs. The researcher in this study aimed at increasing the credibility and integrity of the study at each step of the research process.

It is also necessary for the researcher to consider aspects of validity and reliability pertaining to the study, to analyse and determine the appropriateness of the proposed research design and methods. This will be discussed in the subsections to follow.

3.9.3 Validity

Validity is defined as the extent to which an empirical measure accurately reflects the concept it is intended to measure. The researcher needs to verify to what extent the development measurement reflects the concepts being measured. It is not an exact science but rather a measure of relative validity. A summary of the different types of validity is given in Table 3.10.

Table 3.10: Different types of validity

Type of validity	Definition	How determined
Construct validity	“Extent to which a set of measured items actually represents the theoretical latent construct those items are designed to measure” p.707	Estimated by looking at convergent validity, discriminant validity, nomological validity and face validity.
Convergent validity	“Extent to which a set of measured variables actually represents the theoretical latent construct those variables are designed to measure” p. 137	Estimated by looking at the factor loadings, the amount of variance extracted and reliability.
Discriminant validity	“Extent to which a construct is truly distinct from other constructs” p. 138	Comparing the variance-extracted percentages for any two constructs with the square of the correlation estimate between these two constructs. The variance extracted estimates should be greater than the squared correlation estimate.
Nomological validity	“Determines whether the scale demonstrates the relationships shown to exist based on theory or prior research” p. 138	Looking at the correlations between the factor scores for each construct. Constructs should positively relate to one another.
Face or content validity	“Extent to which the content of the items is consistent with the construct definition” p. 771	A specific number of experts should be asked to evaluate the validity of items individually as well as the entire instrument.
Criterion-related validity	Examines the relationship between existing measures and the newly developed scales. Theory should dictate those	Evidence of criterion-related validity will be provided if the hypothesised relationships attain statistical significance.

Type of validity	Definition	How determined
	variables with which the new measures should correlate or be independent	
External validity	Concerned with the generalisability of results	Generating similar relationships with different samples

Source: Hair et al. (2006)

- **Internal validity**

Threats to internal validity for the proposed study could include the following: history, selection bias, and other third variable problems (Creswell, 2009). The aforementioned threats to internal validity are defined and described in Table 3.11, along with the researcher’s proposed counter actions according to each threat.

Table 3.11: Threats to internal validity

Type of threat	Description	Counter actions
History	Events may affect the dependent variable. Participants could be influenced by uncontrolled variables e.g., respondents present themselves better	The rationale of the study were explained and the fact that there are no right or wrong answers was emphasised
Selection bias	Participants with certain characteristics are selected which influence results and findings	A diverse pool of participants was selected
Third variable problems	Nuisance/intervening variables that influenced the proposed research	The researcher tried to determine the possible external third variables that might influence results and considered action plans to establish control over such variables

Source: Creswell (2005, p. 163)

- **Construct validity**

According to Hair et al. (2006), construct validity is the extent to which a set of measured items actually represents the theoretical latent construct those items are designed to measure. Threats that have been identified that may have a possible influence on the study include the subject effect and the experimenter effect (Welman, Kruger & Mitchell, 2005).

The subject effect Participants may act differently and change their behaviour because they are aware that the researcher is assessing their perceptions and experiences, in this case with regard to psychological ownership. In this study, to counter the subject effect the researcher emphasised that the participants should be as honest as possible, and assured them that their responses were anonymous and would be treated as confidential.

The experimenter effect The researcher verified formulated expectation of the research results by testing the hypothesis through data analysis, manipulation and interpretation. The researcher counteracted the experimenter effect by taking cognisance of the influence of personal characteristics, by selecting objective data collection and data analysis methods, and by keeping in mind the research objectives of obtaining diverse data and providing an objective picture of the data and results of the study.

3.9.4 Reliability

Kerlinger (1986) defines reliability as the accuracy or precision of a measuring instrument, which is a necessary condition for validity. In this study reliability was determined by means of Cronbach's alpha (Price & Mueller, 1986). As has been mentioned, Hair et al. recommend that items with an alpha correlation of .70 and higher are viewed as acceptable, but indicate that alpha correlations of .60 are also acceptable in exploratory research. According to Cortina (1993), alpha is very sensitive to the number of items in a measure, and alpha can be high in spite of low item inter-correlations and multidimensionality. As already mentioned, in contrast to Hair et al., Cortina suggests that an alpha correlation of .70 should serve as an absolute minimum for newly developed measures, and that through appropriate use of factor analysis, the internal consistency reliability should be considerably higher than .70. According to Hinkin (1998), reporting of internal consistency should be considered absolute necessary and therefore this was determined in the study.

3.10 ETHICAL CONSIDERATIONS

Approval from the University of Pretoria’s ethical committee was sought before the commencement of the study. Saunders et al. (2007) define research ethics as the researcher’s appropriateness in terms of his or her behaviour regarding the rights of human beings affected by the work of the researcher. For a research study to be ethical, the research design should be methodologically sound and morally acceptable for the people who are involved.

Researchers should thoroughly consider the ethical implications of the study they propose to conduct, especially when the focus of investigation of the research involve human beings. In this particular study respondents were asked to fill out a questionnaire that measured their psychological ownership toward their organisation.

The Health Professions Council of South Africa, along with the Professional Board of Psychology, requires that any research conducted should be in compliance with and guided by the “Ethical Code of Professional Conduct” (Babbie & Mouton, 2001). This “Ethical Code of Professional Conduct” specifies what is deemed acceptable and unacceptable conduct, from the research planning phase through to the publication of research findings.

Based on the International Research Test Commission’s Guidelines for Test Use (2000), fair assessment practices could be defined as entailing:

- The appropriate, fair, professional, and ethical use of assessment measures and assessment results
- Taking into account the needs and rights of those involved in the assessment process
- Ensuring that the assessment conducted closely matches the purpose to which the assessment results will be put

- Taking into account the broader social, cultural, and political context in which assessment is used and the ways in which such factors might affect assessment results, their interpretation and the use to which they are put (Foxcroft & Roodt, 2001).

There are several very important ethical issues in the research that were attended to in the study, displayed in Figure 3.11. Each issue will be discussed in greater detail.

Figure 3.11: Ethical issues in the research



(Author's own)

- **Informed consent** According to Babbie and Mouton (2001), the anticipated consequences, rights and responsibilities as well as the nature and purposes of the research should be communicated as fully as possible to the individuals likely to be affected. Applicants should be totally informed about all the features of the research project that might influence their decision to participate. Informed consent can be

ensured by telling participants what the researcher wishes them to do and asking them for their written permission (See Appendix A).

- **Anonymity** Anonymity refers to the principle that the identity of a participant should be kept secret. Participants have the right to remain anonymous. Neither the names nor any identifiable background information of participants may be disclosed. Information on (in this case) their psychological ownership is of a private nature and not for public information and should be respected and regarded as such by ensuring that the information provided by the participants cannot be personally linked to them (Mouton, 2001). Anonymity was ensured due to the fact that respondents completed the questionnaire via the internet using a web-link. The completed questionnaire was saved on the web provider server without respondents' revealing their e-mail addresses.
- **Confidentiality** Researchers are responsible for protecting the security and confidentiality of obtained information. The researcher should not discuss or share any personal information related to the participants without their consent. If conducting survey research, the researcher should ensure that the data collected will be used only for the stated purposes of the specific study (Mouton, 2001). (See Annexure B)
- **Privacy and voluntary participation** Participation in survey research should be voluntary and participants may refuse to reveal certain information about themselves and may have the opportunity to withdraw from the research study at any time. The researcher made every effort to reiterate that participation was entirely voluntary and that participants had the right to withdraw their consent at any time (See the cover letter in Annexure B).
- **Accountability** Researchers may be held accountable for the manner in which survey data is used and interpreted as well as for protecting the confidentiality and security of obtained information (Voskuijl & Evers, 2007).

- **Harm** It will be unethical for researchers to expose participants to unnecessary physical or psychological harm. According to Babbie and Mouton (2001), researchers need to take cognisance of the impact their research will have on participants so as not to expose them to any unreasonable risks and harm to their emotional well-being. In this study a pilot test was done with a small group of participants with whom the experience of participating in the research was discussed, and changes were made to the questionnaire to limit potential unreasonable risks. Participants also had the opportunity to communicate via email with the researcher if they had any concerns resulting from their participation in the research. The researcher also minimised the possibility of harm to participants by explaining that this was not a test with any right or wrong answers, and that no judgements would be made about them as individuals, nor could the results in any way be linked to them.
- **Research conducted in a socially responsive and responsible manner** The researcher ensured that participants were treated in a socially responsive and responsible manner by consulting numerous published journal articles and taking note of how research in similar contexts had been conducted. Voskuijl and Evers (2007) advise researchers to treat participants with respect and consideration, to acknowledge them as persons in specific contexts with specific needs, to protect them from possible negative consequences of the research, and to demand of them only to produce relevant and reasonable information.
- **Plagiarism** Plagiarism is a concern that needs to be prevented at all cost and researchers have to ensure all references have been properly documented and listed throughout the research report.
- **Ethical reporting** It is the responsibility of the researcher not to falsify, distort or leave out any findings. The researcher attempted to report results in an honest and accurate manner. Results that contradicted previous research or which were in conflict with predominant literature were reported and linked to the body of literature.

3.11 CONCLUSION

In this study a post-positivist paradigm was followed because the researcher explored and further defined the construct of psychological ownership and was concerned with the development of an objective, accurate measure of psychological ownership in South African organisations. The study was based on a quantitative research method with a non-experimental, cross-sectional survey design. The research group represented a non-probability convenient sample consisting of 712 professional, highly-skilled and skilled respondents employed in various types of South African organisations in both the private and public sectors.

The chapter set out the various steps to be followed in scale development. These steps have been followed and will be explained in detail in the next chapter; they resulted in a questionnaire that could measure the psychological ownership of employees in organisations. Data was collected by means of an electronically self-administered questionnaire; in some cases hard copies were employed. The chapter described the various aspects of bias, errors in human inquiry, validity and reliability that were taken into consideration when conducting the research to demonstrate that rigour was present. It described several important ethical issues that are applicable to the study. The following chapter will describe the application of the chosen methods and the resultant statistical findings.

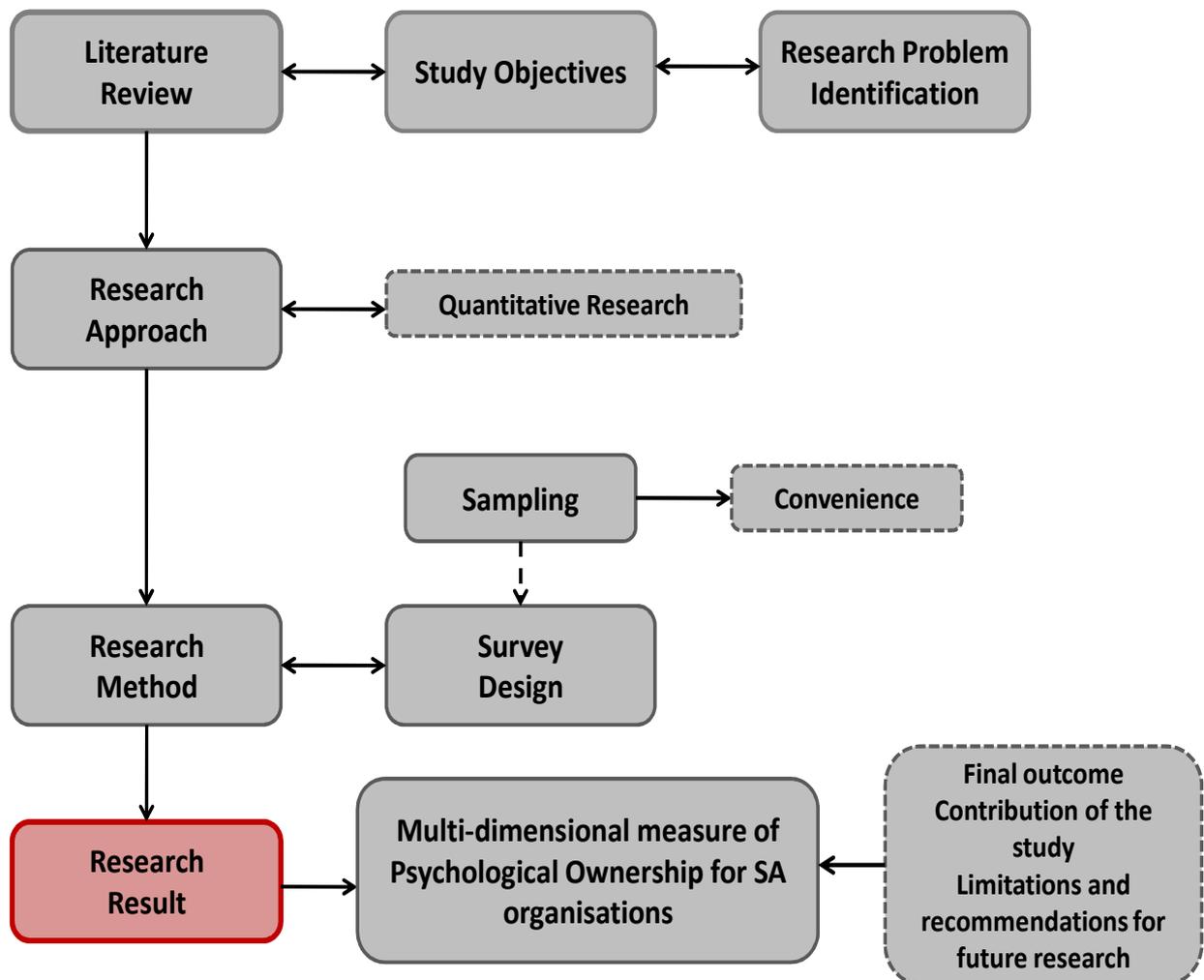
CHAPTER 4

RESEARCH RESULTS AND FINDINGS

If we knew what it was we were doing, it would not be called research, would it?

- Albert Einstein

In this chapter...

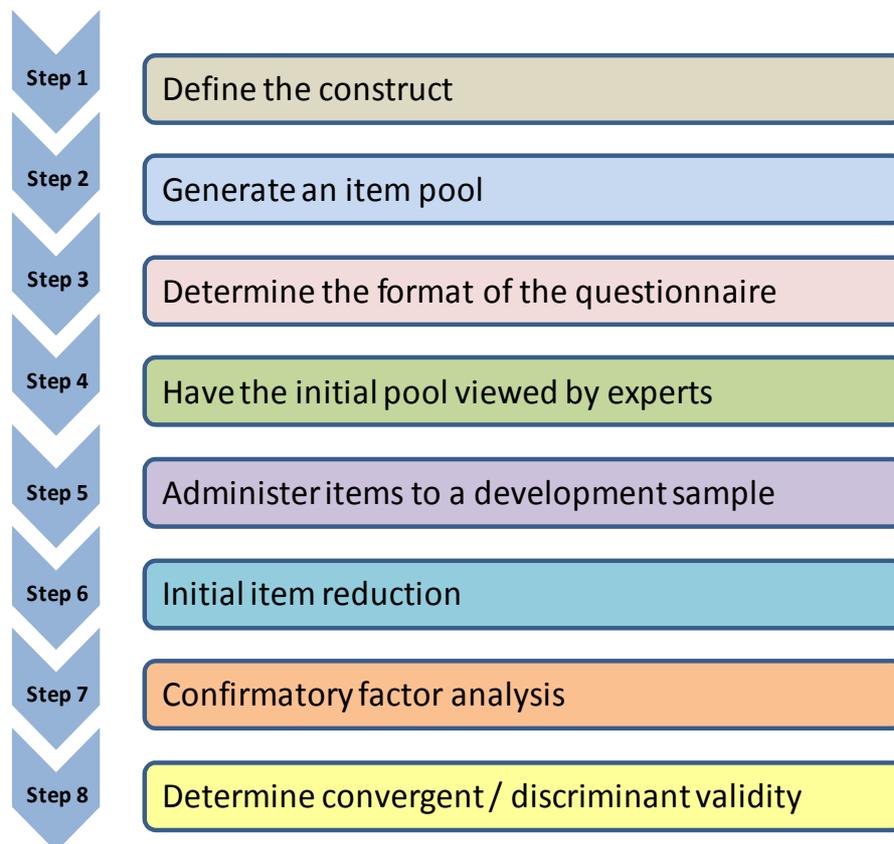


4.1 INTRODUCTION

In this chapter the research methodology, strategy and research methods used to develop a multi-dimensional measure of psychological ownership of employees within the South African context will be documented and explained.

As explained in Chapter 3, in this study a measure of psychological ownership was developed by following a combination of steps as suggested by DeVellis (2003), Hinkin (1998), and Spector (1992). The various steps in the scale development process that were followed are outlined in Figure 4.1 and are further described.

Figure 4.1: Steps in the scale development process



Source: Adapted from DeVellis (2003), Hinkin (1998), and Spector (1992)

4.2 STEPS TO BE FOLLOWED IN SCALE DEVELOPMENT

4.2.1 Step 1: Defining the construct

Building on the five recognised dimensions of psychological ownership: *self-efficacy*, *self-identity*, *having a place* (belonging), *accountability*, and *territoriality* of Avey and colleagues (2009), and after a comprehensive review of the literature, the concepts of *responsibility* and *autonomy* were posited as additional aspects of psychological ownership. These concepts have been clearly defined and described in Chapter 1 and in the literature review in Chapter 2.

The definition of each concept in the organisational context is summarised in Table 4.1.

Table 4.1: Definitions of key concepts in the organisational context

Concept	Definition
Psychological ownership	A state in which individuals feel as though the target of ownership (material or immaterial in nature) or piece of it is ‘theirs’ (i.e. ‘It is <i>mine!</i> ’) and it exists irrespective of legal ownership (Pierce et al., 2001)
Efficacy and effectance	Individuals’ judgement about their capability to perform across a variety of situations (Bandura, 1977)
Self-identity	A personal cognitive connection between an individual and an object (e.g. organisation). The individual’s perception of oneness with the target (e.g. the organisation) (Porteous, 1976).
Having a place (belonging)	The extent to which an individual feels “at home” in the organisation (Porteous, 1976).
Accountability	The implicit or explicit expectation of the perceived right to hold others and oneself accountable for influences on one’s target of ownership (Lerner & Tetlock, 1999)
Territoriality	An individual’s behavioural expression of his/her feelings of ownership toward a physical or social object (Brown et al. ,2005)

Concept	Definition
Autonomy	The regulation of the self and the extent to which a person needs or is eager to experience individual initiative in performing in the organisation (Ryan & Deci, 2006).
Responsibility	The state of cognitive and emotional acceptance of responsibility (Cummings & Anton, 1990).

4.2.2 Step 2: Generation of an item pool

For item generation the deductive process was used (Hinkin, 1998). Item generation was thus initiated by a thorough review of the literature on possessiveness, psychological ownership, and related terms as reported in Chapter 2. The definitions as given in Table 4.1 were used as a guide for the development of items. Items to be included in the measure were generated from the review of literature and expanded on the instrument developed by Avey et al. (2009). The six theory-driven domains determined to best constitute the dimensions of ***promotive or promotion-orientated psychological ownership*** include *self-efficacy*, *self-identity* with the target, *sense of belonging*, *accountability*, *autonomy* and *responsibility*. *Territoriality* was identified as the seventh dimension, belonging to ***preventative or prevention-orientated psychological ownership*** (Avey et al., 2009). The researcher generated 54 items representing these seven theory-driven dimensions of psychological ownership. The number of items representing each construct is indicated in Table 4.2:

Table 4.2: Items per dimension

Dimension	Items
Self-efficacy	7
Self-identity	8
Sense of belonging	7
Accountability	6
Territoriality	9
Autonomy	10
Responsibility	7
Total	54

A detailed theoretical verification of each item included under the seven descriptive dimensions of psychological ownership in the questionnaire has been provided in Table 4.3.

Table 4.3: Theoretical verification of each item per dimension

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
A.	Self-efficacy Def: Individuals' judgment about their capability to perform across a variety of situations (Bandura, 1977)	
1.	I am confident that I can make suggestions about ways to improve the working of my work unit.	According to Parker (1998, p. 835), "self-efficacy concerns the extent to which people feel confident that they are able to carry out a broader and more proactive role".
2.	I have the confidence to suggest doing things differently in my work unit.	According to Bandura (as cited in Parker, 1998), perceived control is a critical determinant of self-efficacy. Andrisani (1976) argues that a high level of perceived control relates positively to personal confidence, initiative, and innate ability.
3.	I am confident that I can design new procedures for my work unit/area.	Adapted from Parker's (1998) Role Breadth Self-efficacy instrument. Original item: "How confident would you feel making suggestions to management about ways to improve the working of your section?"
4.	I am confident that I am able to analyse a long-term problem to find a solution.	Adapted from Parker's (1998) Role Breadth Self-efficacy instrument. Original item: "How confident would you feel analysing a long-term problem to find a solution?"
5.	I am confident that when I make plans that will benefit the organisation, I can make them work.	Bandura (as cited in Parker, 1998) suggests that one of the four categories that are used in the development of self-efficacy is enactive mastery, or repeated performance success.
6.	I am confident that I have the ability to act within the responsibilities of my job.	According to Bandura (1995), p. 193), "An efficacy expectation is the conviction that one can successfully execute the behaviour required to produce outcomes."
7.	I am confident that I can meet my performance expectations that were agreed with me upfront.	Brockner (as cited in Parker, 1998) states that self-efficacy is a judgement about specific task capability.
B.	Self-identity Def: A personal cognitive connection between an individual and an object (e.g. organisation). The individual's perception of oneness with the target (e.g. the organisation) (Porteous, 1976).	
8.	I personally experience the successes and failures of the organisation as my successes and failures.	"...the tendency of individuals to perceive themselves and their groups or organisations as intertwined, sharing common qualities and faults, successes and failures, and common identities" (Mael & Tetrick, 1992, p. 813). Adapted from Mael and Ashforth (1992). Original item: "This school's successes are my successes."

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
9.	I feel that by identifying with the characteristics of the organisation it helps me develop a sense of who I am.	According to Pierce et al. (2003), people use ownership to define themselves, to express their self-identity to others and to maintain the continuity of the self across time.
10.	I feel the need to be seen as a member of the organisation.	"...the individual defines him or herself in terms of the organisation in which he or she is a member" (Mael & Ashforth, 1992, p104).
11.	It is important to me that others think highly of my organisation.	"...an individual may feel proud to be part of a group" (O'Reilly & Chatman, 1986, p. 493).
12.	My personal values and that of the organisation are aligned and cared for.	"...the values of the individual and the group or organisation are the same" (O'Reilly & Chatman, 1986, p. 493).
13.	It is important to me to defend my organisation to outsiders when it is criticised.	According to Lee, (1971, p. 215) cited in Edwards, 2005) where identification with the organisation is in the form of loyalty, this will relate to attitudes and behaviours that include "defending the organisation to outsiders".
14.	It is important to me to support my organisation's goals and policies.	"The organisation's goals become the individual's goals, and those who identify strongly are more likely to be motivated to work hard to help achieve these goals" (Edwards, 2005, p. 207).
15.	I am proud to say to every person I meet that this is my organisation.	"...an individual may feel proud to be part of a group" (O'Reilly & Chatman, 1986, p. 493) and according to Lee, as cited in Edwards, 2005, p. 215) where identification with the organisation is in the form of loyalty, this will relate to attitudes and behaviours that include "taking pride in the tenure in the organisation".
C.	Sense of belongingness Def: The extent to which an individual feels "at home" in the workplace (Porteous, 1976).	
16.	I think about this organisation as MY organisation.	Adapted from the original five-item measure of psychological ownership originally developed by Pierce, Van Dyne and Cummings (1992, cited in Van Dyne & Pierce, 2004).
17.	I perceive myself to be psychologically intertwined with the fate of the organisation.	"...the process by which the goals of the organisation and those of the individual become increasingly integrated or congruent" (Hall et al., 1970, p. 176).
18.	I feel that I belong in this organisation.	"...the perception of oneness with or belongingness to an organisation" (Mael & Ashforth, 1992, p. 104). Taken from Avey et al. (2009) Psychological Ownership Questionnaire. Original item: "I feel I belong in this organisation".
19.	I feel "at home" in this organisation.	According to Porteous (1976), it is those possessions in which an individual finds a strong sense of identification that come to be regarded as "home" – my place.
20.	This organisation cares for me as a person and looks after me.	According to Pierce et al. (2003), people become psychologically attached to a variety of objects of material and immaterial nature and in many of these possessions they find a special place that is familiar and provides some form of personal security.

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
21.	There is a strong relationship between me and my team.	“...Organisational identification is seen as a key psychological state reflecting the underlying link or bond that exists between the employee and the organisation” (Edwards, 2005, p. 201).
22.	I give and receive affection from my colleagues and this bonds us with the organisation.	According to Lee (as cited in Edwards, 2005, p. 214), belongingness results from common goals shared with other employees who feel that their function fulfils their personal needs.
D.	Accountability Def: The implicit or explicit expectation of the perceived right to hold others and oneself accountable for influences on one’s target of ownership (Lerner & Tetlock, 1999).	
23.	I will hold management accountable for their decisions.	According to Pierce et al. (2003), individuals who experience high levels of psychological ownership expect to be able to call others to account for influences on their target of ownership.
24.	I have the right to hold myself and others accountable for organisational performance.	Lerner and Tetlock (1999, p. 255) refer to accountability as “the implicit or explicit expectation that one may be called on to justify one’s beliefs, feelings, and actions to others”.
25.	It is important to me to have the right to information about the organisation, such as performance and projection and about my personal and team performance.	According to Pierce et al. (2001) individuals have the right to information about the target of ownership.
26.	In my organisation we are allowed to make mistakes and own up to it.	“Accountability requires a level of ownership that includes: making; keeping; and proactively <i>answering for personal commitments</i> ” (Wood & Winston, 2007, p. 168).
27.	In my organisation I accept responsibility and take the consequences of these decisions.	According to Kouzes and Posner (1993, cited in Wood & Winston, 2007) accountability has to do with the acceptance of responsibility, voluntary transparency and <i>answerability</i> .
28.	I work in an open environment where everyone is allowed to challenge a decision or strategy as long as it is done constructively.	Kubzansky and Druskat (as cited in Pierce et al., 2001) state that the right to information about the target of ownership and the <i>right to have a voice in decisions that impact on the target</i> are frequently associated with ownership. Adapted from Avey et al. (2009) Psychological ownership questionnaire. Item: “I would challenge the direction of my organisation to assure it’s correct”.
	Territoriality Def: An individual’s behavioural expression of his/her feelings of ownership toward a physical or social object (Brown et al., 2005)	

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
29.	It is important to me that my organisation allows me to personalise my work space.	According to Wells, (2000) employees are generally happier if they are allowed to personalise; Brown et al. (2005, p. 581) came to the conclusion that “personalizations are an important type of marking that allow a person to express his or her identity and foster a sense of belonging to the organization”.
30.	It is important to me to defend my work space from others in the organisation.	Porteous (1976) states that control over space per se is a satisfaction that is derived from ownership, and that people use control-orientated marking to persuade others not to attempt to gain access to their marked territory (Brown et al., 2005).
31.	It is important to me to have a work space or work area of my own.	Porteous (1976) has argued that individuals have an inherent territoriality need, that is, a need to possess a certain space.
32.	It is important to me to protect my belongings from others in the organisation.	According to Belk (1988) and Dittmar (1992), possessions can play such a dominant role in the owner’s identity that they become part of the extended self, with the result that the loss of possessions will, according to James (1890, p. 178), lead to “shrinkage of our personality, a partial conversion of ourselves to nothingness”. Item adapted from Avey et al. (2009) Psychological ownership questionnaire. Original item: “I feel I need to protect my property from being used by others in my organisation.”
33.	It is important to me that people I work with do not invade my work space.	According to Brown et al. (2005), control-orientated marking communicates to others that a territory has been claimed so as to discourage access, usage, and infringement attempts by others. Item taken from Avey et al. (2009) Psychological ownership questionnaire.
34.	It is important to me to protect my ideas from being used by others in the organisation.	According to Locke, (1690, cited in Pierce et al., 2001) people own their labour and, therefore, they often feel that they own that which they created, shaped or produced. Item adapted from Avey et al. (2009) Psychological ownership questionnaire. Original item: “I feel I need to protect my ideas from being used by others in my organisation.”
35.	It is important to me to discourage others from attempting to enter my work space.	According to Brown et al. (2005, p. 586) “Behaviors, such as marking and defending, that increase the sense one has a place of one’s own will increase the rootedness and sense of belonging an individual member has with the organisation.”
36.	It is important to me to know and have access to all policies and procedures of the organisation.	According to Pierce et al. (2001) “when employees are given information about potential targets of ownership (e.g., the mission of the organisation, its goals, and its performance), they feel that they know the organization better and, as a result, may develop psychological ownership toward it”.
37.	Every person in our organisation knows the boundary of acceptable and unacceptable behaviour.	Through intimate knowledge of an object, place, or person, a union of the self with the object takes place (Beaglehole, 1932). Weil (1952) supports this by stating that people can feel that something is theirs by virtue of being associated and familiar with it.

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
	<p>Autonomy Def: Refers to the regulation of the self and is the extent to which a person needs or is eager to experience individual initiative in performing a job (Ryan & Deci, 2006).</p>	
38.	My job gives me the freedom to schedule my work and determine how it is done.	Autonomy reflects “the degree to which the job provides <i>substantial freedom</i> , independence, and <i>discretion to the employee in scheduling the work</i> ” (Hackman and Oldham, 1975, p. 162).
39.	My job allows me to have control over my working environment.	According to Ashforth and Saks (2000, p. 313), people must perceive that they have control in the working environment.
40.	My job allows me to participate in making decisions that affect my task domain.	Perceived control refers to “employees’ belief about the extent to which they have autonomy in their job and are allowed to participate in making decisions on issues that effect their task domain” (Ashforth & Saks, 2000, p. 313).
41.	My job allows me the opportunity for independent thought and action.	Autonomy reflects “the degree to which the job provides substantial freedom, <i>independence</i> , and discretion to the employee in scheduling the work” (Hackman and Oldham, 1975, p. 162).
42.	My job allows me to do my work independently.	Mayhew et al. (2007) suggest that organisations should provide their employees with opportunities to control facets of their employment by allowing them the freedom and flexibility to plan and perform their workloads.
43.	My job allows me to use my personal initiative and judgment in carrying out my work.	Adapted from Hackman and Oldham’s (1975) Job Diagnostic survey. Original item: “The job gives me a chance to use my personal initiative and judgment in carrying out the work.”
44.	My job gives me the freedom to do pretty much what I want in my job.	Deci and Ryan (1985) refer to autonomous actions as those actions that are regulated and endorsed by the self and that are accompanied by a sense of psychological freedom and violation.
45.	My job gives me the freedom to act morally for the purpose of doing good for my organisation independently of incentives.	Adapted from Hackman and Oldham’s (1975) Job Diagnostic survey. Original item: “The job gives me considerable opportunity for independence and freedom in how I do the work”.
46.	My job allows me to apply informed consent to my activities that I deem necessary to action my task domain.	Adapted from Hackman and Oldham’s (1975) Job Diagnostic survey. Original item: “The job gives me considerable opportunity for independence and freedom in how I do the work.”
47.	My autonomy to act is restricted by the policies and procedures of the organisation but does not inhibit my ability to deliver the tasks required.	Prelinger (1959) found that the more an individual feels that he or she has control over an object, the more likely it is that that object will be perceived as part of the self.
	<p>Responsibility Def: The state of cognitive and emotional acceptance of responsibility (Cummings & Anton, 1990).</p>	

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Element/Items	Theoretical verification
48.	I accept full responsibility for my actions within the organisation.	Mackin (as cited in Pierce et al. 2001) states that for “every right of ownership which ... an owner may feel ... there is a commensurate or balancing responsibility”.
49.	I accept ownership for the results of my decisions and actions.	Adapted from a leader accountability instrument developed by Wood and Winston (2007). Original item: “The leader accepts responsibility for his/her actions within the organisation.”
50.	I strive to contribute as much as possible to the effectiveness of the organisation.	Pierce et al. (2001) propose that a positive and causal relationship exists between the extent to which an individual employee invests himself or herself in the potential target of ownership and the degree of ownership the employee feels toward that target.
51.	I feel personally responsible for the work I do in my organisation.	Dipboye (as cited in Pierce et al., 2003, p. 29) states that “When an individual’s sense of self is closely linked to the target, a desire to maintain, protect, or enhance that identity will result in an <i>enhanced sense of responsibility</i> .”
52.	I feel I should personally take the credit or blame for the results of my work in the organisation.	Rodgers (as cited in Pierce et al., 2001, p. 303) argues that “the right to participate in decision making is balanced with an active right and responsible voice”.
53.	The buck stops with me and I ensure that the task/complaint is resolved successfully every time.	Adapted from Hackman and Oldham’s (1975) four item <i>Sense of responsibility</i> for the job instrument. Original item: “It is hard, on this job, for me to care very much about whether or not the work got done right.”
54.	If I cannot deliver on a task for whatever reason, I maintain the responsibility to find an alternative resource or solution.	Adapted from Hackman and Oldham’s (1975) four item <i>Sense of responsibility</i> for the job instrument. Original item: “Whether or not this job gets done right is clearly my responsibility.”

From Table 4.3 it is evident that the origins of the items included in the seven dimensions of the questionnaire are as follows:

- **Self-efficacy:** Based on the self-efficacy scale developed by Parker (1998), seven *self-efficacy* items were developed. Parker (1998) found an alpha coefficient of .96 for his ten-item Role Breadth Self-Efficacy scale that was submitted to 669 employees from a glass manufacturing company in the United Kingdom (UK). Two of the items of Parker’s self-efficacy scale were adapted. Central key words of the original items were retained but rephrased to fit the structure of the newly developed questionnaire (please refer to Table 4.3). The remaining five items were developed by the researcher, based on the theoretical verification as displayed in Table 4.3.

- **Self-identity:** Eight items were developed for the measuring of self-identity. One of these items was based on the work done by Mael and Ashforth (1992). They measured “Organisational identification” with a six-item scale and reported coefficient alphas from .87 to .89 in two samples of US Army squad leaders. The remaining seven items were developed by the researcher, based on the theoretical verification presented in Table 4.3.
- **Sense of belonging:** Seven *sense of belonging* items were compiled. One of the items measuring *sense of belonging* was taken from the existing Psychological Ownership Questionnaire developed by Avey and colleagues (2009). They found an alpha coefficient of .92 for this particular dimension. One item, namely, “this organisation is **my** organisation” was adapted from the seven-item measure of psychological ownership developed by Van Dyne and Pierce (2004). This item was rephrased, although the key words of the original item were retained. Cronbach’s coefficient alpha showed acceptable internal consistency reliability respectively of .87, .90 and .93 for three US samples. The remaining five items were developed by the researcher, based on the theoretical verification as presented in Table 4.3.
- **Accountability:** Six *accountability* items were compiled. One item measuring *accountability* was adapted from the existing Psychological Ownership Questionnaire developed by Avey and colleagues (2009). An alpha coefficient of .86 was reported for this particular dimension. This item was rephrased and rewritten to form a newly developed item that would fit the structure of the newly developed questionnaire. Based on the theoretical verification for items displayed in Table 4.3, the researcher compiled the remaining five items.
- **Territoriality:** Nine items for the measuring of *territoriality* were compiled. Three items measuring territoriality were adapted from the existing Psychological Ownership Questionnaire developed by Avey and colleagues (2009). Cronbach’s coefficient alpha showed acceptable internal consistency reliability of .83 for this dimension. The researcher compiled the remaining six items based on the

theoretical verification for items displayed in Table 4.3

- **Autonomy:** Ten items for the measuring of *Autonomy* were compiled. Three items from the Revised Job Diagnostic Survey of Hackman and Oldham (1975) were adapted because they proved to be reliable items – an alpha coefficient of 0.72 for the autonomy dimension was reported by Buys et al. (2007) on a South African sample comprising 677 respondents from various organisations. However, although some of the key words of the original items remained, these three items were rephrased and rewritten to form three new items to fit the flow and structure of the newly developed questionnaire. Seven additional items were compiled by the researcher based on the theoretical verification provided in Table 4.3.
- **Responsibility:** Seven *Responsibility* items were compiled. Two items for the measuring of responsibility were adapted from Hackman and Oldham's four-item Sense of Responsibility instrument (cited in Li, 2008). Li reported a coefficient alpha for sense of responsibility of .79. The sample comprised 162 volunteers from various non-profit organisations in the Waikato region of New Zealand. However, these items were rephrased and rewritten to form two newly developed items. One item from Wood and Winston's (2007) Responsibility Scale was also adapted. A sample comprising 148 employees from the US completed their questionnaire and a remarkably high coefficient alpha score of .97 was reported. Although some of the key words of the original item remained, the item was rephrased to fit the current structure of the newly developed questionnaire. Four additional items were developed by the researcher (see the theoretical verification provided in Table 4.3).

4.2.3 Step 3: Determining the format of the questionnaire

A Likert-type rating scale with an equal 1-6 agreement format was chosen, where:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Slightly disagree
- 4 = Slightly agree
- 5 = Agree
- 6 = Strongly agree

The Likert-type scale was chosen above a typical dichotomous “yes-no or true-false” scale because Likert-type scales are most frequently used in survey questionnaire research and are most useful in behavioural research, according to Hinkin (1998). The Likert-type scale allows respondents to indicate their degree of agreement with the particular statement (DeVellis, 2003). A desirable quality of a measurement scale is to generate sufficient variance among respondents for subsequent statistical analyses. It was noted that an equal number of options could result in respondents’ falling to one side; however, the mid-range option of three in the scale could lead to respondents choosing the middle option.

4.2.4 Step 4: Having the initial pool reviewed by a panel of experts and pilot study

According to De Vos (2002), content validity is concerned with the sampling adequacy or representativeness of the content of an instrument, thus: “Does the instrument address whether items on an instrument adequately measure a desired domain of content?” (Grant & Davis, 1997) In order to determine the content validity of the psychological ownership measure, which assisted in the retention or rejection of certain items, Lawshe’s (1975) content validity technique was applied. This judgement-quantification process entails asking a specific number of subject matter experts to

evaluate the validity of items individually, as well as the entire instrument. The experts had to meet a predetermined set of five criteria in order for them to be regarded as Subject Matter Experts for the purpose of this study. He or she must

- have at least a three-year degree in the fields of industrial psychology or psychology, human resource management or related field
- have at least five years' work experience and expertise in applied psychology or related fields
- have had at least one article published in a refereed journal or have presented a paper at an international conference
- be registered with a professional body such as the Health Professions Council of South Africa (HPCSA), South African Board of People Practice (SABPP) or equivalent
- be regarded as an expert in the field of applied psychology or related fields by his or her colleagues and clients.

Questionnaires were distributed to the group of experts and they were requested to indicate whether or not a measurement item in a set of other measurement items was essential to the functionality of the construct. They were also asked to provide biographical information such as: their highest qualification, work experience in applied psychology or related fields, whether or not they were registered with a professional board, the number of their publications in refereed journals and papers presented at international conferences and their age. This information was used to determine whether or not each respondent did fill the criteria for a subject matter expert that had been set for the purposes of this study. Table 4.4 indicates how the respondents met such qualifying criteria.

Table 4.4: Subject matter expert criteria

Respondent No	Minimum 3-year degree in HR/ Industrial Psych/ Psych or related	Minimum 5 years' work experience	Registered with professional body or equivalent	Regarded as expert by clients/ colleagues	Publications in refereed journals /	Age	Meet SME criteria?
1	DPhil (Industrial Psychology)	38	HPCSA SABPP	Yes	31	64	Yes
2	PhD (HRM)	30	SANRF B-rated researcher	Yes	30	62	Yes
3	DPhil	28	HPCSA	Yes		51	Yes
4	PhD (Organisational Behaviour)	25	SABPP	Yes	6	53	Yes
5	PhD (Organisational Behaviour)	25	Chairperson: Centre of I/O Psychology advisory committee (UNISA)	Yes	8	49	Yes
6	MA (Research Psychology)	8	HPCSA	Yes	0	32	Yes
7	D Com (HRM)	15	HPCSA SABPP	Yes	13	50	Yes
8	MPhil (HRM)	7	Academy of Management	Yes	1	33	Yes
9	MA (Counselling Psychology)	35	HPCSA	Yes	10	62	Yes

It is clear from the information in Table 4.4 that all of the subject matter experts are indeed experts in evaluating the construct, as nine had obtained a minimum of a Master's degree in the field of industrial psychology, human resource management or related field. Six have doctoral degrees, whereas two of the three with Master's degrees are currently enrolled as doctoral students in organisational behaviour. Six of the experts have at least 25 years of work experience and the remaining three a minimum

of seven years. They are all registered with a professional body such as the Health Professions Council of South Africa (HPCSA) as psychologists or industrial psychologists or at the South African Board of People Practice (SABPP) as Master Human Resource Practitioners. One of the respondents is registered as a B-rated researcher at the South African National Research Foundation (SANRF). The remaining two serve as either a chairperson or member on various other human resource related committees. They are all regarded as experts in the field of applied psychology by their clients and colleagues. With an average age of 51, the assumption can be made that the experts are a very experienced group of people. With the exception of one, all these experts had had numerous articles published in refereed journals. Although one of the respondents did not have any articles published in a refereed journal, eight papers had been presented at international conferences. All of these experts are experienced in the field of scale development and quite a number of them have developed a measuring instrument as part of their study for their doctoral thesis. Thus, all nine of the respondents met the predetermined criteria that had been set and qualified as a subject matter expert.

The panel was asked not only to judge each item related to the specific dimension of psychological ownership, but to indicate the clarity of each item as well as to comment on the comprehensiveness of the entire instrument and addition of items.

Item content: the experts were provided with the conceptual definition of *psychological ownership* and the relevant dimensions of psychological ownership: *self-efficacy, self-identity, sense of belongingness, accountability, territoriality, autonomy and responsibility* (Addendum A).

Lawshe's (1975) quasi-quantitative approach to content validity was also used to facilitate the retention or rejection of specific items. The Content Validity Ratio (CVR) for each item was computed by making use of the following formula:

$$CVR = \frac{ne - \frac{N}{2}}{\frac{N}{2}}$$

Where:

ne = number of subject matter experts who indicated the item as essential;

N = the total number of subject matter experts on the panel

The CVR formula takes on values between -0.1 (where none of the experts think that the particular item is essential) and +0.1 (where all the experts regard that particular item as essential). A CVR-value of 0 (CVR=0), indicates that 50% of the experts in the selected panel of size N (N = number of experts) believe that the measurement item is essential. A CVR of > 0.0 will thus indicate that more than half of the subject matter experts believe that the particular item is essential.

The CVR is negative if fewer than half of the experts indicate that an item is essential and positive when more than half of the experts indicate it is essential. Hence the more experts over 50% that perceive the item as essential, the greater the degree of its content validity. A guideline to use as minimum CVR for different panel sizes based on a one-tailed test at the $\alpha = .05$ significance level was established by Lawshe (1975).

A total of nine subject matter experts completed the questionnaire. The minimum CVR values, according to the panel size, for an item to be retained as part of the content validity testing (Lawshe, 1975) was .78. All items with a CVR value of less than .78 should be rejected. Lawshe's content validity results are presented in Table 4.5.

Table 4.5: Lawshe’s content validity results

	DIMENSIONS and descriptive elements of psychological ownership	Endorsement of statements				CVR	Retain (yes / no)
		<i>Not essential</i>	<i>Essential</i>	<i>Item is clear</i>	<i>Item is unclear</i>		
	Element						
A.	Self-efficacy Def: The individual’s judgment about their capability to perform across a variety of situations.						
1.	I am confident that I can make suggestions about ways to improve the working of my work unit.	1	8	8	1	.78	Yes
2.	I have the confidence to suggest doing things differently in my work unit.	1	8	9	0	.78	Yes
3.	I am confident that I can design new procedures for my work unit/area.	1	8	8	1	.78	Yes
4.	I am confident that I am able to analyse a long-term problem to find a solution.	3	6	5	4	.33	No
5.	I am confident that when I make plans that will benefit the organisation, I can make them work.	1	8	9	0	.78	Yes
6.	I am confident that I have the ability to act within the responsibilities of my job.	2	7	9	0	.56	No
7.	I am confident that I can meet my performance expectations that were agreed with me upfront.	0	9	9	0	1	Yes
B.	Self-identity Def: A personal cognitive connection between an individual and an object (e.g. organisation). The individual’s perception of oneness with the target (e.g. the organisation).						
8.	I personally experience the successes and failures of the organisation as my successes and failures.	0	9	9	0	1	Yes
9.	I feel that by identifying with the characteristics of the organisation it helps me develop a sense of who I am.	1	8	6	3	.78	Yes
10.	I feel the need to be seen as a member of the organisation.	0	9	8	1	1	Yes
11.	It is important to me that others think highly of my organisation.	0	9	9	0	1	Yes
12.	My personal values and that of the organisation are aligned and cared for.	2	7	5	4	.56	No
13.	It is important to me to defend my organisation to outsiders when it is criticised.	0	9	8	1	1	Yes
14.	It is important to me to support my organisation’s goals and policies.	0	9	8	1	1	Yes
15.	I am proud to say to every person I meet that this is my organisation.	0	9	8	1	1	Yes
C.	Sense of belongingness Def: The extent to which an individual feels ‘at home’ in the work place.						

	DIMENSIONS and descriptive elements of psychological ownership	Endorsement of statements				CVR	Retain (yes / no)
		<i>Not essential</i>	<i>Essential</i>	<i>Item is clear</i>	<i>Item is unclear</i>		
	Element						
16.	I think about this organisation as MY organisation.	0	9	8	1	1	Yes
17.	I perceive myself to be psychologically intertwined with the fate of the organisation.	1	8	5	4	.78	Yes
18.	I feel that I belong in this organisation.	0	9	9	0	1	Yes
19.	I feel 'at home' in this organisation.	1	8	9	0	.78	Yes
20.	This organisation cares for me as a person and looks after me.	2	7	9	0	.56	No
21.	There is a strong relationship between me and my team.	3	6	6	3	.33	No
22.	I give and receive affection from my colleagues and this bonds us with the organisation.	4	5	4	4	.111	No
D.	Accountability Def: The implicit or explicit expectation of the perceived right to hold others and oneself accountable for influences on one's target of ownership.						
23.	I will hold management accountable for their decisions.	2	7	4	5	.56	No
24.	I have the right to hold myself and others accountable for organisational performance.	0	9	4	5	1	Yes
25.	It is important to me to have the right to information about the organisation, such as performance and projection and about my personal and team performance.	1	8	4	5	.78	Yes
26.	In my organisation we are allowed to make mistakes and own up to it.	2	7	8	1	.56	No
27.	In my organisation I accept responsibility and take the consequences of these decisions.	0	9	7	2	1	Yes
28.	I work in an open environment where everyone is allowed to challenge a decision or strategy as long as it is done constructively.	3	6	8	1	.33	No
E.	Territoriality Def: An individual's behavioural expression of his/her feelings of ownership toward a physical or social object.						
29.	It is important to me that my organisation allows me to personalise my work space.	2	7	7	2	.56	No
30.	It is important to me to defend my work space from others in the organisation.	2	7	7	2	.56	No
31.	It is important to me to have a work space or work area of my own.	1	8	7	2	.78	Yes

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	DIMENSIONS and descriptive elements of psychological ownership	Endorsement of statements				CVR	Retain (yes / no)
		<i>Not essential</i>	<i>Essential</i>	<i>Item is clear</i>	<i>Item is unclear</i>		
	Element						
32.	It is important to me to protect my belongings from others in the organisation.	4	5	7	2	.11	No
33.	It is important to me that people I work with do not invade my work space.	2	7	7	2	.56	No
34.	It is important to me to protect my ideas from being used by others in the organisation.	2	7	6	3	.56	No
35.	It is important to me to discourage others from attempting to enter my work space.	4	5	5	2	.11	No
36.	It is important to me to know and have access to all policies and procedures of the organisation.	3	6	8	1	.33	No
37.	Every person in our organisation knows the boundary of acceptable and unacceptable behaviour.	2	7	8	1	.56	No
F.	Autonomy Def: Refers to the regulation of the self and is the extent to which a person needs or is eager to experience individual initiative in performing a job.						
38.	My job gives me the freedom to schedule my work and determine how it is done.	0	9	7	2	1	Yes
39.	My job allows me to have control over my working environment.	1	8	6	3	.78	Yes
40.	My job allows me to participate in making decisions that affect my task domain.	1	8	6	3	.78	Yes
41.	My job allows me the opportunity for independent thought and action.	0	9	7	2	1	Yes
42.	My job allows me to do my work independently.	1	8	7	2	.78	Yes
43.	My job allows me to use my personal initiative and judgment in carrying out my work.	0	9	7	2	1	Yes
44.	My job gives me the freedom to do pretty much what I want in my job.	1	8	6	3	.78	Yes
45.	My job gives me the freedom to act morally for the purpose of doing good for my organisation independently of incentives.	3	6	6	3	.33	No
46.	My job allows me to apply informed consent to my activities that I deem necessary to action my task domain.	5	4	2	4	-.11	No
47.	My autonomy to act is restricted by the policies and procedures of the organisation but does not inhibit my ability to deliver the tasks required.	1	8	5	4	.78	Yes
G.	Responsibility Def: The state of cognitive and emotional acceptance of responsibility.						

	DIMENSIONS and descriptive elements of psychological ownership	Endorsement of statements				CVR	Retain (yes / no)
		Not essential	Essential	Item is clear	Item is unclear		
48.	I accept full responsibility for my actions within the organisation.	0	9	9	0	1	Yes
49.	I accept ownership for the results of my decisions and actions.	0	9	9	0	1	Yes
50.	I strive to contribute as much as possible to the effectiveness of the organisation.	3	6	6	3	.33	No
51.	I feel personally responsible for the work I do in my organisation.	1	8	9	0	.78	Yes
52.	I feel I should personally take the credit or blame for the results of my work in the organisation.	0	9	9	0	1	Yes
53.	The buck stops with me and I ensure that the task / complaint is resolved successfully every time.	1	8	8	1	.78	Yes
54.	If I cannot deliver on a task for whatever reason, I maintain the responsibility to find an alternative resource or solution.	0	9	9	0	1	Yes
Average number of endorsements		1.315	7.593			.72	

According to the results, the majority of measurement items with regard to each dimension were valid, since their CVR values were greater than or equal to .78 at a significance level of $\alpha = .05$, except for the dimensions of *Sense of belonging* (where 3 out of the original 6 items had to be rejected) and *Territoriality* (where 8 out of the original 9 items had to be rejected).

Rejection of such a large number of the *Territoriality* items could be due to the fact that the experts experience territoriality as negative and as a potential threat to psychological ownership. The researcher purposefully did not disclose to the experts that territoriality is a preventative form of psychological ownership. Their response to these items is a confirmation of the researcher's view that territoriality is a preventative form of psychological ownership. In their study, Brown et al. (2005. p. 580) focused on the territoriality concept as being behavioural and proposed that "the stronger an individual's psychological ownership of an object, the greater the likelihood he or she will engage in territorial behaviours". Although Pierce et al. (2001) argue that psychological ownership is a cognitive-affective construct, Avey et al. (2009) focus heavily on the cognitive aspects (versus behavioural displays) of territoriality as a

preventative form of psychological ownership. This also applies to this study. Although territoriality may lead people to become too preoccupied with their “objects of ownership” at the expense of their performance or other pro-social behaviours (Avey et al., 2009), the possibility exists that feelings of territoriality may promote positive organisational outcomes. If individuals believe that by protecting their territory they are doing what is right (Altman, as cited in Avey et al., 2009), territoriality may lead to increased retention and performance. Scholars such as Porteous (1976) have suggested that individuals exercise control by the “marking” of objects, which contributes to their attachment to the object and experienced psychological ownership. This type of behaviour may cause the individual to feel more secure and “at home” and they may feel that they discover themselves in the marked object. This study supports the viewpoint of Avey et al. (2009) that territorial psychological ownership with its typically negative implication may have a positive side.

A total of 20 items were rejected because the CVR values were less than .78. Although item 4 (part of *self-efficacy* dimension), item 12 (part of *self-identity* dimension) and item 23 (part of the *accountability* dimension) had CVR values of less than .78, it was decided to retain these three items since quite a few experts indicated that these items were unclear and that if the questions could be rephrased, they could be retained. The valid items from each dimension were retained. The number of items retained after the application of Lawshe’s (1975) technique was 34. Table 4.7 gives a summary of the original number of items compared with the number of items retained after the application of Lawshe’s (1975) technique.

Table 4.6: Comparison between the original number of items and items retained after the application of Lawshe’s technique

Dimension	Original number of items	Items retained
Self-efficacy	7	5
Self-identity	8	7
Belonging	7	4
Accountability	6	3
Territoriality	9	1
Autonomy	10	8
Responsibility	7	6
Total	54	34

Item style: The subject matter experts were also asked to evaluate each item’s clarity and conciseness. Unclear (vague) items were indicated, as can be seen in Table 4.6. In some cases the experts suggested alternative wordings of the questions. Items were reworded and clarified accordingly, as can be seen in Table 4.8.

Comprehensiveness: The panel of experts were also asked to evaluate the total instrument for comprehensiveness. The panel all agreed that all the dimensions of the desired content domain of the psychological ownership concept had been included. However, in judging the entire instrument, the panel of experts suggested that additional items should be added in order to represent the total content domain. The inclusion of additional items in the questionnaire would also help in determining the validity of the final scale, as suggested by Worthington and Whittaker (2006). Idaszak et al. (1988) support this by stating that an instrument should have at least four to six items per scale because this will increase the likelihood that a factor analysis will accurately reflect the true underlying structure of the item pool. Therefore, in the second round of items derived from the literature study 24 additional items as per Table 4.7 were added to each one of the dimensions to better represent the total content domain.

Table 4.7: Additional items as per seven dimensions

SEVEN DIMENSIONS AND DESCRIPTIVE ELEMENTS OF PSYCHOLOGICAL OWNERSHIP		
	Additional Elements / Items	Theoretical verification
A.	Self-efficacy Def: The individuals' judgement about their capability to perform across a variety of situations (Bandura, 1977)	
1.	I am confident in my ability to execute the required tasks of my job.	According to Bandura (1977, p. 193), "An efficacy expectation is the conviction that one can successfully execute the behavior required to produce outcomes".
2.	I am confident that I can implement policies and procedures in my work environment.	According to Bandura (1977, p. 193), "An efficacy expectation is the conviction that one can successfully execute the behavior required to produce outcomes".
3.	I feel that I can represent my work environment with all internal / external stakeholders.	Adapted from Parker's (1998) Role Breadth Self-efficacy instrument.
4.	I am confident to act as an expert in my field for my work environment.	According to Bandura (1986, cited in Parker, 1989), perceived control is a critical determinant of self-efficacy. Andrisani (1976) argues that a high level of perceived control relates positively to personal confidence, initiative, and innate ability.
B.	Self-identity Def: A personal cognitive connection between an individual and an object (e.g. organisation). The individual's perception of oneness with the target (e.g. the organisation) (Porteous, 1976).	
5.	I act to the benefit of my organisation.	Having a membership that shares the organisation's goals and values can ensure that individuals act instinctively to benefit the organisation" (O'Reilly & Chatman, 1986, p. 493).
6.	I feel part of the larger organisational entity.	"...individuals perceive themselves to be part of a larger organisation" (Rousseau, 1998, p. 217).
7.	I feel a strong linkage between me and my organisation.	"...the individual ... see him or herself as psychologically intertwined with the fate of the group" (Mael & Ashforth, 1992, p 105).
C.	Sense of belongingness Def: The extent to which an individual feels "at home" in the work place (Porteous, 1976).	
8.	I feel totally comfortable being in the organisation.	According to Brown, (1969, cited in Edwards, 2005) the basic components of organisational identification are: attraction to the organisation, consistency of organisational and individual goals, loyalty, and reference to the self to organisational membership.

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9.	I feel that this organisation is part of me	“...the perception of oneness with or belongingness to an organisation” (Mael & Ashforth, 1992, p. 104) and according to Rousseau (1998) the organisation becomes a part of the individual’s self-concept.
10.	I feel I have a considerable emotional investment in my organisation.	“...the process by which the goals of the organisation and those of the individual become increasingly integrated or congruent” (Hall et al., 1970, p. 176).
11.	I feel I have a strong bond with the organisation.	“...Organisational identification is seen as a key psychological state reflecting the underlying link or bond that exists between the employee and the organisation” (Edwards, 2005, p. 201)
12.	I feel secure in this organisation.	Dittmar (1992) believes that possessions may provide a sense of security, and according to Porteous (1976), “the home” is important because it provides the individual with both psychic and physical security.
D.	Accountability Def: The implicit or explicit expectation of the perceived right to hold others and oneself accountable for influences on one’s target of ownership (Lerner & Tetlock, 1999).	
13.	I would take action against inappropriate behaviour in my organisation.	In their stewardship theory, Davis et al. (1997) propose that in certain situations when individuals feel like stewards, they will be motivated to act in the best interest of the principals rather than in their personal interests. Pierce et al. (2003, p. 30) thus came to the conclusion that “when individuals feel psychological ownership, they may feel as though they are the ‘psychological principals’ or stewards and act accordingly”.
14.	I would challenge a decision or strategy being made in the organisation.	Kubzansky and Druskat (1993, cited in Pierce et al., 2001) state that the right to information about the target of ownership and the <i>right to have a voice in decisions that impact the target</i> are frequently associated with ownership. Adapted from Avey et al. (2009) Psychological ownership questionnaire. Item: “I would challenge the direction of my organisation to ensure it’s correct.”
15.	I would report inappropriate behaviour in my organisation.	Adapted from Avey et al. (2009) Psychological ownership questionnaire. Item: “I would not hesitate to tell my organisation if I thought something was done wrong.”
16.	I acknowledge my mistakes in the organisation.	“Accountability requires a level of ownership that includes: making; keeping; and proactively <i>answering for personal commitments</i> ” (Wood & Winston, 2007, p. 168).
17.	I take responsibility for my decisions in the organisation.	According to Kouzes and Posner (1993, cited in Wood & Winston, 2007) accountability has to do with the <i>acceptance of responsibility</i> , voluntary transparency and answerability.

18.	I hold myself and others accountable for organisational performance. This question was split into two, due to the fact that it was double-barrelled. I hold myself... and I hold others...	
	Territoriality Def: An individual's behavioural expression of his/her feelings of ownership toward a physical or social object (Brown, et al., 2005)	
	No additional items were added. Original items remained, as was discussed in paragraph 4.2.4	
	Autonomy Def: Refers to the regulation of the self and is the extent to which a person needs or is eager to experience individual initiative in performing a job (Ryan & Deci, 2006)	
19.	I have almost complete responsibility for deciding how and when the work is done.	According to Pierce O'Driscoll et al. (2004), the creating and maintaining of work settings that empower individuals and enable them to exercise control over important aspects of their work arrangements should enhance their sense of ownership, which may promote the manifestation of work-related attitudes and behaviours.
20.	I have considerable opportunity for independence and freedom in how I do my work.	Adapted from Hackman and Oldham's (1975) Job Diagnostic survey. Original item: "The job gives me considerable opportunity for independence and freedom in how I do the work."
	Responsibility Def: The state of cognitive and emotional acceptance of responsibility (Cummings & Anton, 1990).	
21.	I would invest time and energy beyond my job in the organisation	Pierce et al. (2001) propose that a positive and causal relationship exists between the extent to which an individual employee invests himself or herself into the potential target of ownership and the degree of ownership the employee feels toward that target.
22.	I proactively enhance both tangible and intangible targets of my organisation	The feelings of ownership toward both material and immaterial objects can not only shape identity (as was mentioned earlier by Belk (1988) and Dittmar (1992)), but can also affect behaviour (Isaacs, 1933).
23.	I would protect, care and nurture all elements of my organisation	Pierce et al. (2003, p. 29) state that "Psychological ownership for a particular target may also promote feelings of responsibility that include feelings of being protective, caring, and nurturing and the proactive assumption of responsibility for that target."

Five of the originally nine experts served as a second set of expert judges for content validation of the remaining 69 items and agreed that all 69 items be included in the final construct measure of psychological ownership. Table 4.8 indicates the number of items

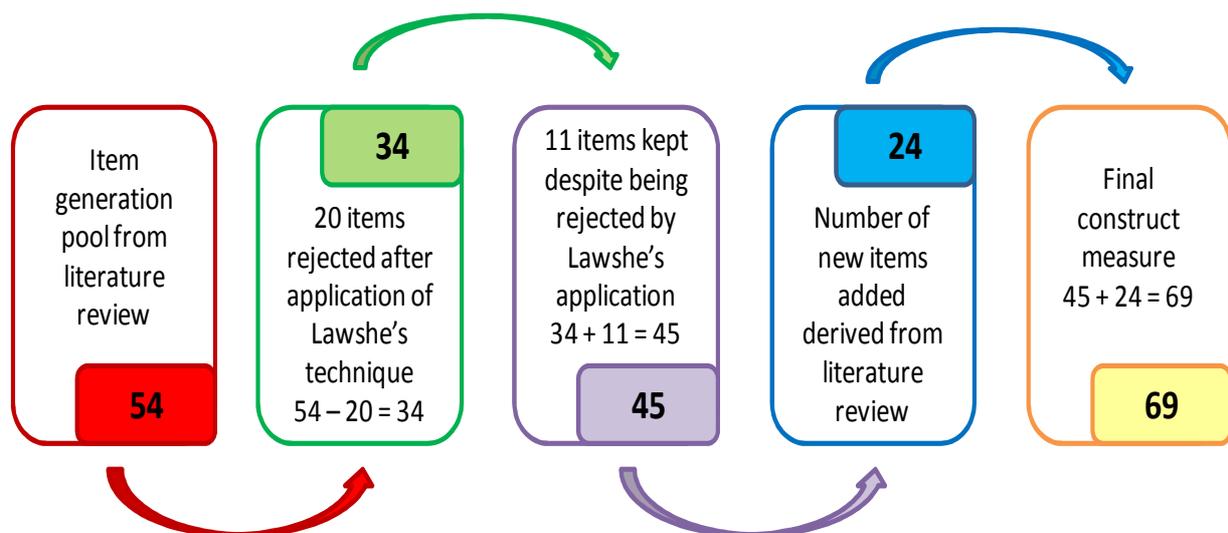
to be included in the final instrument after the application of Lawshe’s technique and after additional items had been added.

Table 4.8: Number of items included in the final instrument after additional items had been added

Dimension	Number of items retained after the application of Lawshe’s technique	Number of items kept despite Lawshe’s application	Second round of items derived from literature study	Total number of items to be included in the final instrument to be tested
Self-efficacy	5	1	4	10
Self-identity	7	1	4	11
Belonging	4		5	9
Accountability	3	1	6	10
Territoriality	1	8		9
Autonomy	8		2	10
Responsibility	6		3	9
Total	34	11	24	69

Figure 4.2 summarises in a flow diagram the development process in the final construct measure as reflected in Table 4.8.

Figure 4.2: Development process of items



- **Pilot study**

A pilot study was initiated. The purpose of the pilot study was twofold: firstly, to test the experimental process to be employed in the study and, secondly, to get an indication of how the measures kept together. A questionnaire consisting of the 69 psychological ownership items was administered via paper and pencil to a small group of individuals ($N = 46$) from the same population as that for which the eventual project was intended.

The pilot study ended with the participants' completion of a combination of measures which included the psychological ownership, affective commitment, turnover intentions and job satisfaction measures. The affective commitment, turnover intentions and job satisfaction measures were included to examine the nomological network of the variable of interest as part of the construct validation process (Judge, Erez, Bono & Thoresen, 2003).

Although the pilot sample was small, it was felt that conducting the pilot study would help to identify ambiguous or unclear items, as well as ease of completion of the questionnaire (Welman & Kruger, 1999). The outcome of the pilot study could also offer some insight into the potential reliability of not only the psychological ownership measure, but also the other measures (Hess, as cited in Faranda, 2001). Subsequent to the completion of the questionnaire, respondents were requested to comment on the clarity of the items.

- **Preliminary analysis on pilot study**

Each of the dimensions of the psychological ownership measure achieved a satisfactory reliability coefficient. Several respondents, however, expressed confusion regarding the meaning of the words “own up to” used in items 8 and 16. As a result, the wording was changed as indicated in Table 4.9.

Table 4.9: Original versus revised items identified from the pilot study

Item no	Original item	Revised item
8	I own up to my mistakes in the organisation.	I acknowledge my mistakes in the organisation
16	I own up to the consequences of my decisions in the organisation.	I accept the consequences of my decisions in the organisation

The alpha values for the respective dimensions of the psychological ownership measure for the pilot study are indicated in Table 4.10.

Table 4.10: Alpha values for pilot study per dimension

Seven Dimensions	Alpha coefficient
Self-efficacy	.83
Self-identity	.88
Sense of belonging	.90
Accountability	.72
Territoriality	.60
Autonomy	.92
Responsibility	.87

With respect to exploratory measurement research, these alpha values surpass the moderate reliabilities of .50 – .60 that were suggested by Nunnally (1967). For basic research, according to Peter (1979), values close to .80 are definitely adequate, while Carmines and Zeller (1979) prefer alphas above .80. Pilot-study alpha values for the other measures taken were, according to the criteria mentioned, also adequate. The coefficient alpha for affective commitment was .69. For turnover intentions and job satisfaction, alphas were .89 and .60, respectively.

The final psychological ownership instrument comprising 69 items can be viewed in Annexure B.

4.2.5 Step 5: Administering items to a development sample

A non-probability convenience sample of 712 was collected from employed professional, high-skilled and skilled individuals in various organisations in both the private and public sector in South Africa. If sample size permits, the sample may be randomly split into two subsets (Hair et al., 2006). The reason for this split in this study was due to the fact that data were collected at one time. One half of the sample was used for the development of a model and the other half of the sample was used to validate the results that were obtained from the first half (Anderson & Gerbing, 1988). Thus, a sample of 356 respondents was used for Exploratory Factor Analysis (EFA) and a sample of 356 for Confirmatory Factor Analysis (CFA). The sample size is in accordance with the guideline established by Worthington and Whittaker (2006), that 300 is generally sufficient for factor analysis. The ratio of 5.1:1 of the sample size to the number of variables met the guideline set by Hair et al. (2006), who suggest that the number of observations per variable should be a minimum of five and hopefully at least ten observations per variable.

4.2.6 Step 6: Initial item reduction

4.2.6.1 Exploratory factor analysis (EFA)

According to Worthington and Whittaker (2006, p. 807), the main purpose of the EFA is to “group a large item set into meaningful subsets that measure different factors”. An EFA was conducted to determine the following: (1) the number of factors that underlie the set of items and (2) to define the underlying dimensionality of the set of items (Tabachnick & Fidell, 2007). This would enable the researcher to identify those items that did not measure an anticipated factor or that simultaneously measured multiple factors. These items could be poor indicators of the preferred construct and could be eliminated from further research.

Before the commencement of an EFA, it is important to determine the factorability of the correlation matrix. As indicated in Table 4.11, a statistically significant Bartlett's Test of Sphericity (sig. < .50) showed that sufficient correlations existed among the variables to proceed with a factor analysis. The KMO measure of sample adequacy of 0.931, which is well above the guideline of .60 (Tabachnick & Fidell, 2007) confirmed that the overall significance of the correlations within the correlation matrix was suitable for factor analysis.

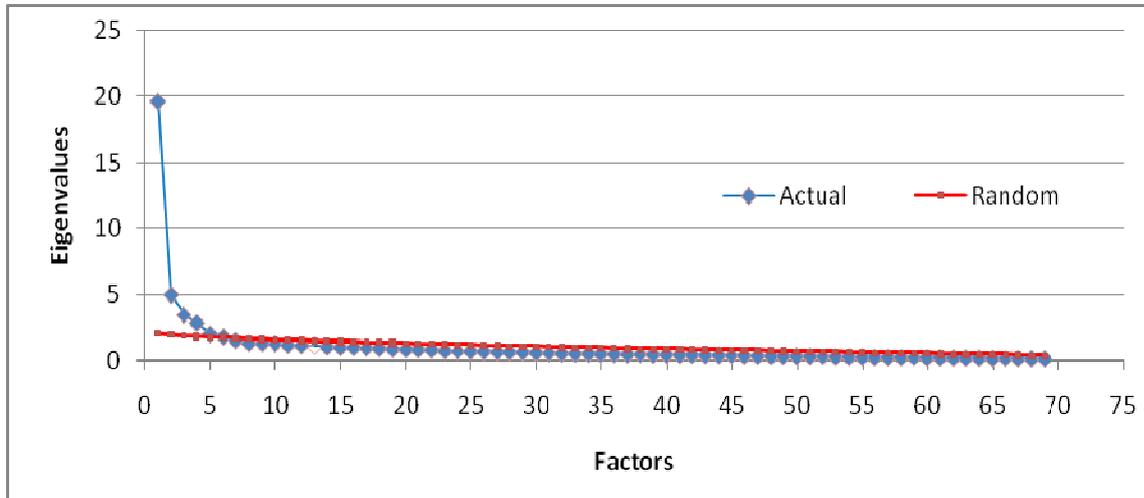
Table 4.11: KMO and Bartlett's Test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.931
Bartlett's Test of Sphericity	Approx. Chi-Square	10445.178
	Df	1326
	Sig.	.000

In the EFA the responses on the 69 items of the Psychological Ownership Questionnaire (POSQ) were correlated and rotated using maximum-likelihood factor extraction with oblique rotation (direct oblimin, delta = 0) using SPSS statistical software. Maximum-likelihood factoring estimates the factor loadings for the population that maximise the likelihood of sampling the observed correlation matrix (Tabachnick & Fidell, 2007). In this study an oblique rotation was employed because the factors in the psychological ownership measure were considered to be correlated.

The scree plot and parallel analysis was used to determine the number of factors to be considered as suitable for further retention. The scree plot and parallel analysis in Figure 4.3 indicated that only four significant factors from the originally defined seven factors could be identified from the 69 items.

Figure 4.3: Scree plot of the actual and the random data for 69 items



In the parallel analysis a break can be observed on the scree plot between factors four and five. The eigenvalues of the random data set (the solid line) intersect the eigenvalues for the actual data (dotted line) set at factor five, signifying four significant factors. The results reported in Table 4.12 indicate that four significant factors explain only 44.79% of the total variance. According to Hayton et al. (2004), as many common factors as possible should be kept to explain at least 50% of the variance in the data set.

Table 4.12: Factor eigenvalues and variance explained for the 69 items

Factor	Total	% of variance	Cumulative %
1	19.652	28.481	28.481
2	4.976	7.212	35.693
3	3.432	4.974	40.667
4	2.847	4.126	44.794
5	2.003	2.903	47.697
6	1.796	2.603	50.300
7	1.512	2.192	52.491
8	1.296	1.878	54.369
9	1.286	1.863	56.232
10	1.243	1.801	58.034

University of Pretoria – C Olckers (2011)

Factor	Total	% of variance	Cumulative %
11	1.152	1.670	59.703
12	1.120	1.623	61.326
13	1.088	1.577	62.903
14	1.011	1.466	64.369
15	.973	1.410	65.778
16	.967	1.401	67.180
17	.914	1.324	68.504
18	.895	1.297	69.801
19	.845	1.225	71.026
20	.815	1.181	72.207
21	.797	1.155	73.362
22	.784	1.136	74.498
23	.707	1.025	75.523
24	.684	.992	76.515
25	.681	.987	77.501
26	.666	.966	78.467
27	.637	.924	79.391
28	.626	.908	80.298
29	.609	.883	81.181
30	.574	.832	82.013
31	.549	.796	82.809
32	.520	.754	83.563
33	.512	.742	84.305
34	.503	.729	85.034
35	.482	.698	85.732
36	.471	.683	86.415
37	.457	.663	87.078
38	.449	.650	87.729
39	.436	.631	88.360
40	.433	.627	88.987
41	.419	.607	89.594
42	.398	.577	90.171
43	.385	.558	90.729
44	.376	.545	91.274
45	.367	.532	91.806
46	.353	.512	92.318

University of Pretoria – C Olckers (2011)

Factor	Total	% of variance	Cumulative %
47	.333	.483	92.801
48	.328	.475	93.276
49	.322	.467	93.743
50	.314	.455	94.198
51	.304	.440	94.638
52	.291	.421	95.059
53	.273	.395	95.455
54	.263	.382	95.836
55	.252	.365	96.202
56	.241	.350	96.551
57	.237	.344	96.895
58	.226	.328	97.223
59	.220	.318	97.542
60	.214	.310	97.852
61	.204	.295	98.147
62	.194	.281	98.428
63	.189	.274	98.702
64	.177	.257	98.959
65	.159	.230	99.189
66	.148	.215	99.403
67	.144	.209	99.612
68	.139	.202	99.814
69	.128	.186	100.000

Extraction Method: Maximum Likelihood.

Kaiser's criterion, compared with Cattell's scree test and parallel analysis, clearly overestimated the number of true factors for the data set.

In the first round of Exploratory Factor Analysis on the four-factor model, all items with factor loadings of less than .32 in the rotation matrix were removed (Worthington & Whittaker, 2006). Items that cross-loaded were deleted as well. Only 52 items were retained and they were subjected to a second round of Exploratory Factor Analysis.

In the second round of Exploratory Factor Analysis on the four-factor model an additional two items that loaded significantly across two or more factors were omitted. To create a more parsimonious and simple structure, only those items that clearly loaded on a single appropriate factor, and were based on the researcher's understanding of the theoretical foundation of the construct measured, were retained. Therefore an additional 12 items were omitted that were theoretically inconsistent with their factor. For example, two responsibility items, four accountability items, one territoriality item and one self-efficacy item that loaded on the belongingness factor were omitted. Two self-efficacy and one self-identity item that loaded on the responsibility factor and one self-efficacy and one territoriality item that loaded on the autonomy factor were deleted as well.

Self-efficacy items

Although ten items were written to capture the dimension of self-efficacy, none of these items survived the stages of scale development. The items either cross-loaded or loaded on dimensions which were theoretically inconsistent with the factor. Control of objects leads to perceptions of personal efficacy. According to Furby (1978), possessions came to be part of the extended self and are therefore important to the individual because they are instrumental in exercising control over the physical environment as well as over people. Control is a key characteristic of the phenomenon of ownership. The greater the amount of control, the more the object is experienced as part of the self.

The individual's self-concept is strongly influenced by culture. In their study Janse van Rensburg and Roodt (2005) found that race groups differ in their perceptions of employment equity (EE) and black economic empowerment (BEE). These perceptions have strong bearing on people's beliefs, values and needs. In another South African study, Urban (2006) found that White South Africans had lower mean scores with regard to self-efficacy comparing to Indian and Black South Africans.

It might be that the White respondents that account for 60% of the sample do have the perception that due to EE and BEE they are losing control over their environment as well as over people.

Self-identity and sense of belonging items

In the four-factor solution, ten of the self-identity items and eight of the sense-of-belonging items loaded on one factor. The researcher decided to retain these items as part as one dimension because these constructs are essentially the same; according to Lee (as cited in Edwards, 2005, p. 210), identification involves a sense of belongingness that results “from common goals shared with others in the organisation or as a result of employees’ feeling that their function within the organisation is important in fulfilling their personal needs”. Ashforth and Mael (1989, p. 21) refer to identification as “the perception of oneness or belongingness to some human aggregate”, or “when a person’s self-concept contains the same attributes as those in the perceived organizational identity” (Dutton, Dukerich & Harquail, 1994).

Accountability items

Ownership is frequently associated with a bundle of rights (Pierce et al, 2001). Most frequently associated with ownership are the right to information about the target of ownership and the right to have a voice in decisions that impact the target.

The expectation of information sharing and permission to influence the direction of the target are consequences of the right to hold others accountable. It might be that the White respondents in the sample that account for 60% of the sample do have the perception that they’ve lost their right to have a voice in the workplace due to the implementation of EE and BEE.

Responsibility items

The remaining two of the original ten accountability items loaded on the responsibility factor. According to Bavy (as cited in Wood & Winston, 2007), accountability implies the acceptance of responsibility. It seems that the sample respondents interpreted these two questions as part of their responsibility, accepting the responsibility for them, rather than as belonging to the accountability factor.

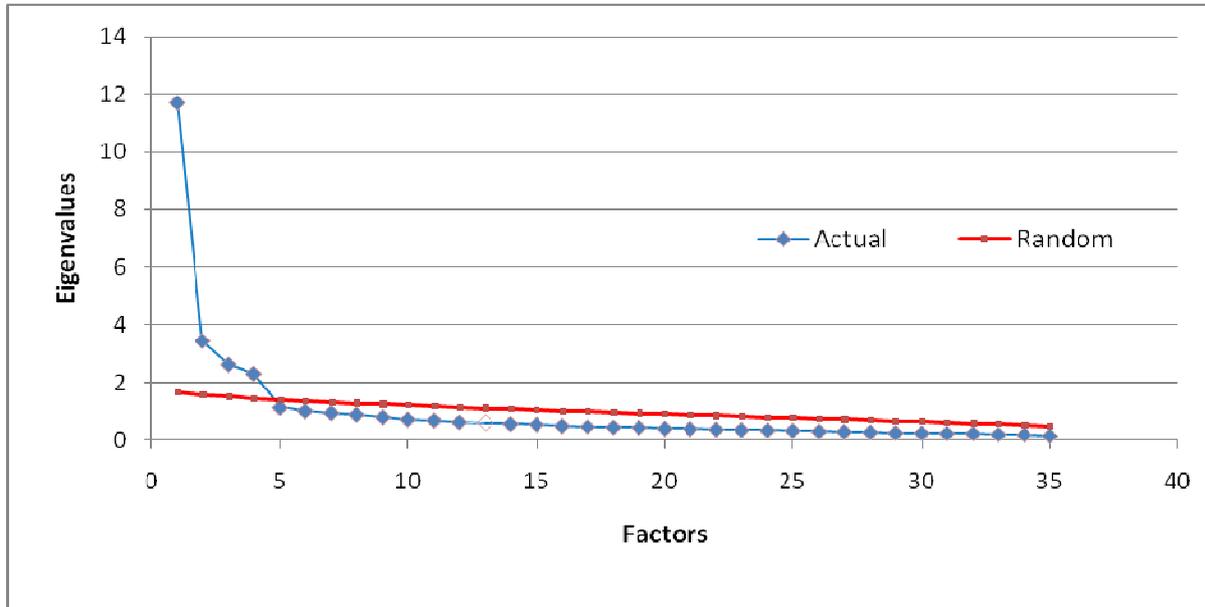
Territoriality items

Only five of the original nine territoriality items survived the stages of scale development. The remaining items either cross-loaded on other factors or loaded on dimensions which were theoretically inconsistent with the factor.

Therefore the researcher decided to retain two accountability items but as part of the responsibility factor. Only 35 of the original 69 items now remained. Once more Bartlett's Test of Sphericity [$\chi^2 (703) = 7783.467, p < .001$] and the KMO measure of sample adequacy (0.923) pointed out that the attributes of the correlation matrices of the 35 item scores would probably factor well.

The scree plot and parallel analysis shown in Figure 4.4 indicates once again that only four significant factors could be identified. In the parallel analysis a clear break can be observed on the scree plot between factors four and five. The eigenvalues of the random data set (the solid line) intersect the eigenvalues for the actual data (dotted line) set at factor five, signifying four significant factors.

Figure 4.4: Scree plot of the actual and the random data for 35 items



The results reported in Table 4.13 indicated that the four factors of the SAPOS, comprising 35 items, explained 57.37% of the total variance. This is in accordance with the recommendation of Hayton et al. (2004) that as many common factors as possible should be kept to explain at least 50% of the variance in the data set.

Table 4.13: Factor eigenvalues and variance explained for the 35 items

Factor	Total	% of variance	Cumulative %
1	11.708	33.452	33.452
2	3.445	9.842	43.294
3	2.622	7.492	50.786
4	2.305	6.586	57.372
5	1.122	3.205	60.576
6	1.010	2.886	63.463
7	.944	2.697	66.160
8	.884	2.526	68.685
9	.798	2.280	70.965
10	.719	2.054	73.020
11	.687	1.962	74.982

Factor	Total	% of variance	Cumulative %
12	.627	1.791	76.773
13	.600	1.715	78.488
14	.563	1.609	80.097
15	.546	1.561	81.658
16	.495	1.415	83.073
17	.471	1.346	84.419
18	.449	1.283	85.702
19	.439	1.256	86.957
20	.404	1.154	88.112
21	.390	1.114	89.226
22	.371	1.060	90.286
23	.356	1.016	91.302
24	.343	.979	92.281
25	.333	.953	93.233
26	.305	.873	94.106
27	.296	.847	94.953
28	.276	.788	95.741
29	.250	.713	96.455
30	.243	.695	97.150
31	.233	.665	97.814
32	.228	.652	98.466
33	.198	.566	99.033
34	.191	.545	99.578
35	.148	.422	100.000

Extraction Method: Maximum Likelihood.

The rotated pattern matrix for the 35 items of the South African Psychological Ownership Questionnaire (SAPOS) is displayed in Table 4.14. All the items had factor loadings of .40 and higher, indicating the significance of these items for interpretative purposes. Sixteen items loaded on factor 1, eight items loaded on factor 2, five items on factor 3 and six items loaded on factor 4. The factors were labelled according to the general content of their significant related items. The four factors of POSQ were labelled *Identification, Responsibility, Autonomy and Territoriality* respectively.

Table 4.14: Rotated pattern matrix for the four-factor model

	Factor			
	1	2	3	4
Q52 B	.919	-.011	-.071	-.011
Q43 B	.837	-.033	.047	-.019
Q51 SI	.752	-.039	-.136	.035
Q31 B	.742	.009	.175	-.066
Q56 SI	.714	.056	.060	-.157
Q24 SI	.704	-.058	.190	-.055
Q34 B	.703	.018	-.201	-.161
Q66 SI	.693	.006	.168	-.013
Q27 B	.642	-.043	.052	.027
Q40 B	.624	.098	.181	-.078
Q55 B	.613	.003	.231	.003
Q12 SI	.586	-.020	.127	-.023
Q49 B	.551	.056	.036	.053
Q6 SI	.547	-.028	.086	.086
Q61 SI	.539	.159	.154	.154
Q9 SI	.456	.150	.002	.002
Q47 R	.037	.795	.004	.081
Q54 R	.071	.745	-.043	-.046
Q63 R	.069	.706	-.071	.002
Q48 R	.025	.678	.070	.064
Q62 R	.017	.653	.008	.008
Q16 Acc	-.057	.632	.096	-.006
Q59 R	-.032	.630	-.057	-.081
Q28 Acc	-.051	.558	.125	-.019
Q23Aut	-.028	-.018	.775	.040
Q42 Aut	.093	.064	.725	.038
Q29 Aut	.108	.008	.705	-.036
Q19 Aut	.014	.113	.689	-.079
Q38 Aut	.217	-.012	.616	.113
Q11 Aut	.074	.065	.598	.074
Q39 T	-.063	.028	.032	.792
Q26 T	-.125	-.009	.104	.700
Q35 T	.035	.021	.014	.678
Q22 T	.031	-.004	.045	.584
Q2 T	.077	-.052	-.081	.470
Extraction Method: Maximum Likelihood.				
Rotation Method: Oblimin with Kaiser Normalization.				
a. Rotation converged in 6 iterations.				

The inter-correlation matrix displayed in Table 4.15 shows the correlation coefficients between the factors. Factor 4 (*Territoriality*) has little or no relationship with any other factors because the correlation coefficients are very low (Field, 2005). However, factors 1 (*Identification*) and 2 (*Responsibility*), with an $R = .363$, and factors 1 (*Identification*) and 3 (*Autonomy*) with an $R = .466$, correlated with one another, indicating that these constructs are interrelated (Hair et al., 2006).

Table 4.15: Scale inter-correlation matrix for the four-factor model

		Factor 1: Identification	Factor 2: Responsibility	Factor 3: Autonomy	Factor 4: Territoriality
Factor 1: Identification	1	1.000			
Factor 2: Responsibility	2	.363	1.000		
Factor 3: Autonomy	3	.466	.256	1.000	
Factor 4: Territoriality	4	.105	-.048	-.047	1.000

A second-order factor analysis was performed using maximum-likelihood factor extraction with an oblique rotation. The results of the second-order factor analysis displayed in Table 4.16 indicate clearly the existence of two distinctive dimensions. Factors 1, 2 and 3 (*Identification*, *Responsibility* and *Autonomy*) share common variance and contribute significantly ($R = .821$, $.683$ and $.767$) to a single overall dimension labelled promotive (promotion-orientated) psychological ownership. Factor 4 (*Territoriality*) loaded to the second single overall dimension ($R = .984$), labelled preventative (prevention-orientated) psychological ownership.

Table 4.16: Rotated second-order factors from the matrix of factor correlations

		2 nd Order 1	2 nd Order 2
Factor 1: Identification	1	.821	.218
Factor 2: Responsibility	2	.683	-.122
Factor 3: Autonomy	3	.767	-.053
Factor 4: Territoriality	4	-.012	.984

4.2.6.2 Examination of construct equivalence

Construct equivalence of the SAPOS were determined by using exploratory factor analysis and target (Procrustean) rotation. The factor loadings of the different race groups were rotated to a joint common matrix of factor loadings. After target rotation had been carried out, factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's phi). However, due to the small representation of the Indian (4.80%) and Coloured (3.40%) respondents construct equivalence could not be determined for all cultural groups. These two race groups have been incorporated with the African group based on the Employee Equity Act, 1997 (Act No. 75 of 1997) who defined black people as a generic term for Africans, Coloureds and Indians. The Tucker's phi-coefficients for the two groups are given in Table 4.17.

Table 4.17: Construct equivalence of the SAPOS for the two groups

Group	Percentage of sample	Tucker's phi – Identity	Tucker's phi - Responsibility	Tucker's phi - Autonomy	Tucker's phi - Territoriality
White	59.54	.93	.96	.94	.96
Black	40.46	.93	.96	.94	.96

Inspection of Table 4.17 shows that the Tucker's phi coefficients for the Black and White respondents were all acceptable (>.90). Therefore, it can be deduced that the four factors of the SAPOS were equivalent for the two race groups.

4.2.6.3 Examination of internal consistency

Evidence of internal consistency could be provided by a number of measures. In this study reliability was calculated using Cronbach's alpha and variance extracted (VE) estimates. Alphas for each subscale were highly satisfactory, ranging between .78 and .94 and well above the .7 cut-off (Hair et al., 2006; Cortina, 1993). The variance extracted (VE) estimate is the average squared factor loading and, according to Hair et al. (2006), as a rule of thumb a VE value of .50 or higher indicates adequate

convergence. Alpha coefficients and variance extracted (VE) estimates for the subscales are displayed in Table 4.18.

Table 4.18: Internal consistency for the subscales of SAPOS

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Factor 1: Identification		
Q6 SI	.497	.940
Q9 SI	.494	.939
Q12 SI	.636	.936
Q24 SI	.757	.933
Q27 B	.628	.937
Q31 B	.795	.932
Q34 B	.769	.933
Q40 B	.714	.932
Q43 B	.818	.932
Q49 B	.579	.938
Q51 SI	.633	.937
Q52 B	.844	.931
Q55 B	.699	.935
Q56 SI	.724	.934
Q61 SI	.507	.939
Q66 SI	.763	.933
Scale reliability: .939		
Variance Extracted (VE): .460		
Factor 2: Responsibility		
Q16 Acc	.602	.858
Q28 Acc	.523	.866
Q47 R	.738	.845
Q48 R	.634	.855
Q54 R	.716	.846
Q59 R	.567	.863
Q62 R	.598	.859
Q63 R	.664	.852
Scale reliability: .871		
Variance Extracted (VE): .460		
Factor 3: Autonomy		
Q11 Aut	.631	.862
Q19 Aut	.654	.857
Q23 Aut	.673	.854
Q29 Aut	.681	.853
Q38 Aut	.691	.853
Q42 Aut	.764	.838

Scale reliability: .874		
Variance Extracted (VE): .470		
Factor 4: Territoriality		
Q2 T	.428	.778
Q22 T	.552	.734
Q26 T	.536	.740
Q35 T	.599	.718
Q39 T	.649	.703
Scale reliability : .776		
Variance Extracted (VE): .430		

Although the alphas for the subscales were highly satisfactory, the variance extracted (VE) estimates of .460 (*Identification*); .460 (*Responsibility*); .470 for *Autonomy* and .430 for *Territoriality* were less than .50. According to Hair et al. (2006), this could be an indication that variance due to measurement error is larger than the variance depicted by the factor. However, Hatcher (1994) notes that the variance extracted estimate test is very conservative, therefore reliabilities can be acceptable even if variance extracted estimates are less than .50.

4.2.6.4 Descriptive statistics of the scales of the SAPOS

The results of the descriptive statistics of the South African Psychological Ownership Questionnaire (SAPOS) for the four factors are set out in Table 4.19: The mean, standard deviation, skewness and kurtosis were computed for the sample scores on the four scales of the SAPOS.

Table 4.19: Descriptive statistics for the four scales of the SAPOS

	Factor 1: Identity	Factor 2: Responsibility	Factor 3: Autonomy	Factor 4: Territoriality
N	356	356	356	356
Mean	72.3258	41.3146	27.8258	17.6601
Std. Error of Mean	.69667	.22004	.27617	.27821
Std. Deviation	13.14472	4.15162	5.21082	5.24925
Skewness	-1.126	-.930	-1.189	.134
Skewness error	.129	.129	.129	.129
Kurtosis	1.534	2.827	2.031	-.725
Kurtosis error	.258	.258	.258	.258

According to Field (2005), the values of skewness and kurtosis are 0 within a normal distribution. Therefore, values of skewness or kurtosis above or below 0 indicate a deviation from normal. Morgan and Griego (1998), on the other hand, state that the assumption for normality expects skewness and kurtosis to be less than 2.5 times the standard error. According to these criteria the summated scores of the sample on the four scales presented in Table 4.19 indicate that the data has a deviation from the normal distribution with a tendency towards negative skewness and leptokurtic distributions.

4.2.7 Step 7: Confirmatory factor analysis

Following the guideline of Krzysofiak et al. (1988), the original sample was randomly split into two halves. One half of the sample ($n = 365$) was used for the development of a model (as discussed in Chapter 3) and the other half was used to validate the outcome that was obtained from the first half (Gerbing & Anderson, 1988). Therefore, the 35-item psychological ownership measure (SAPOS) was subjected to confirmatory factor analysis (CFA) on the other half of the sample ($n = 365$) and to competing model comparisons using EQS. Conducting a CFA allowed the researcher to examine the dimensionality and to evaluate the internal consistency of the developed measure more rigorously (Faranda, 2001).

The data was checked for the presence of multivariate outliers because these outliers might unduly influence the results of the factor analysis (Tabachnick & Fidell, 2007) Multivariate outliers were identified by inspecting the standardised scores (z-scores) and Mahalanobis distance statistic. There were no cases with very large Mahalanobis distance values that were clearly separated from the values of the other cases.

Assumptions of normality were assessed as well. According to Bentler (as cited in Byrne, 2006) Mardia's normalised estimate values greater than 5.00 indicate that the data are non-normally distributed. In this study, Mardia's coefficient (397.433) and the normalised estimate of the coefficient (z-statistic) of 85.6875 suggested that the measured variables were not normally distributed. Tabachnick and Fidell (2007) suggest that in the case of non-normality the robust maximum-likelihood (ML) estimate with the Satorra-Bentler scaled chi-square and adjustment of the standard errors should be employed. According to Garson (2002), the Satorra-Bentler chi-square is a corrected chi-square that makes an attempt to rectify the bias that is presented when the data are noticeably non-normal in the distribution.

The structural equation models for the four dimensions underlying the SAPOS are depicted in Table 4.20 and Figure 4.5 respectively. Latent variables were allowed to correlate with one another.

Table 4.20: Maximum-likelihood estimates of the four-factor model ($n = 365$)

Fit indices	Four-factor solution
S-B χ^2	951.772
<i>Df</i>	554
NNFI	0.897
CFI	0.904
RMSEA	0.045 (0.04 – 0.05)
SRMR	0.059

The result of the Satorra-Bentler chi-square statistic was 951.772, based upon 554 *df* ($p < .0001$). This chi-square statistic is significant and revealed a poor overall fit of the

original measured four-factor SAPOS model. If a chi-square value is significant, it indicates the covariance structure of the model differs significantly from the observed covariance structure. A non-significant chi-square value indicates a good model fit (Garson, 2002). However, according to Kelloway (1998), given the sample size and chi-square/*df* ratio, it would be incorrect to accept a poor model fit based on the significance of the chi-square index alone. The chi-square/*df* ratio was 1.72. Ullman (as cited in Tabachnick & Fidell, 2007) suggests that ratios of two or less can be interpreted as an indication of a good fit. According to this guideline, the measurement model appears to fit the data well. However, the chi-square statistic is very sensitive to sample size (Garson, 2002), with the result that a model with a large chi-square may still have a good fit if the fit indices are high. Therefore, the chi-square statistic must be used with caution and other multiple fit indices should be used to assess a model's goodness-of-fit. According to Bentler (2007) standardised root mean square residual (SRMR) should be reported, accompanied by at most two other fit indices of fit, such as the comparative fit index (CFI).

The model yielded a CFI value of .904. This value is slightly greater than the required .90 but less than the more recently .95 desirable levels (Hu & Bentler, 1999) to indicate a good model fit.

The RMSEA value was estimated at .045. This RMSEA value supports the belief of a good model fit because, according to Hair et al. (2006), RMSEA values between .05 and .08 are indicative of an acceptable fit. In a well-fitting model, the 90% confidence interval of the RMSEA should be between 0 and .08. The 90% confidence interval of the RMSEA (.04, .05) confirmed the acceptable fit of the four-factor measurement model to the data.

The model yielded an SRMR value of .059. Considering the guideline of Garson (2002) that SRMR values of less than .05 are widely considered good fit, and below .08 adequate fit, this value illustrates a fairly good fit.

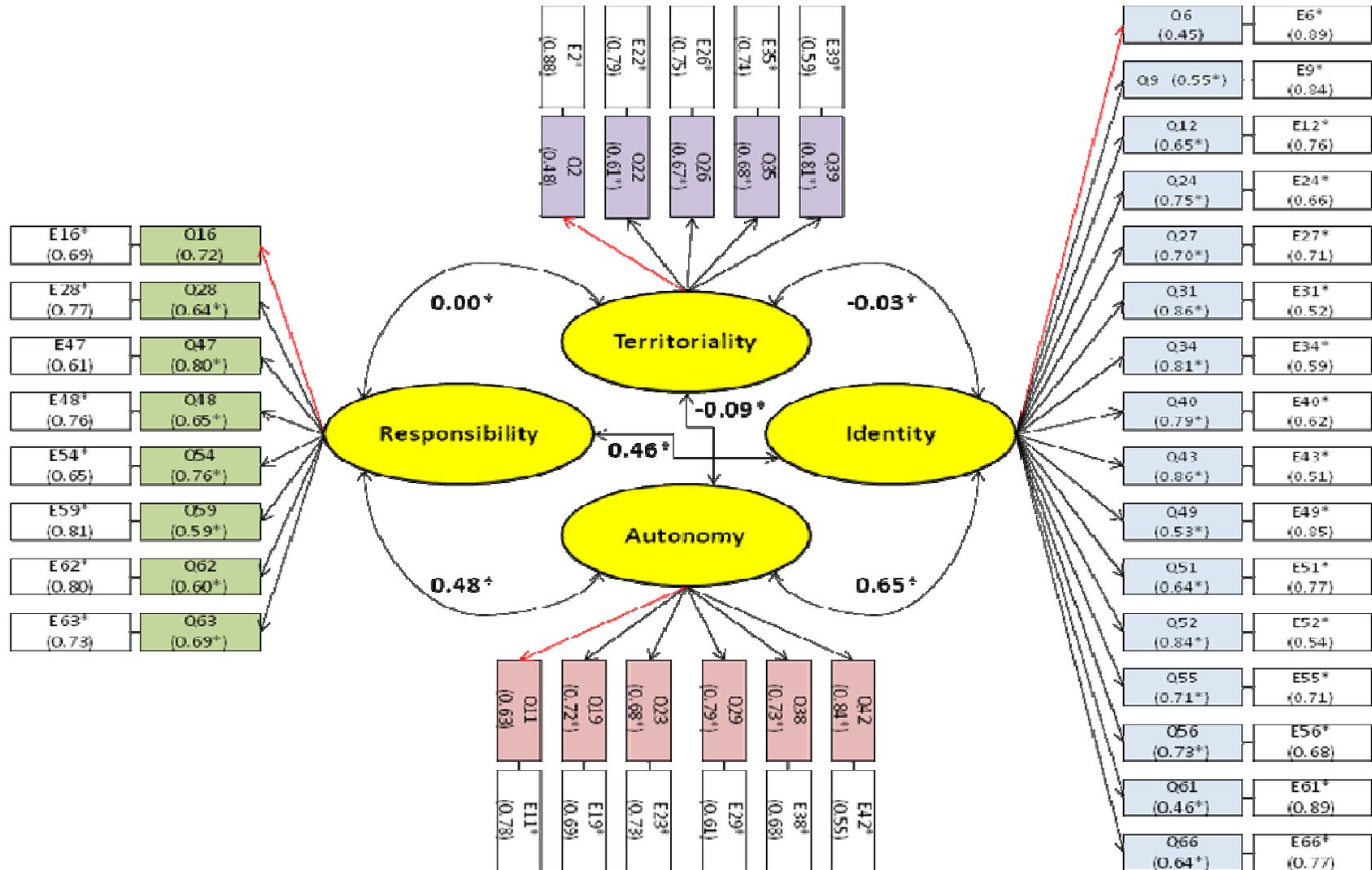
The chi-square/*df* ratio, CFI, RMSEA and SRMR values therefore met the minimum recommended standards, indicating a reasonable model fit.

The path diagram with parameter estimates produced by EQS, based on the four-factor results of the EFA, is displayed in Figure 4.5. The observed variables in this diagram reflecting the 35 items of the POSQ are coloured in blue, pink, green and purple, whereas the independent variables, namely *Identification*, *Responsibility*, *Autonomy* and *Territoriality*, are coloured in yellow. The 35 one-way arrows are indicative of regression coefficients that are indicative of the hypothesised effects of the observed variables (Bentler, 2004), whereas the two-way arrows represent the correlation or covariance between variables.

Path values indicate measures of reliability, displaying how well the observed variable explains each latent construct. Values of .7 or higher are required for acceptance in this regard (Hair et al., 2006).

For the latent construct *Identification* (F1) the observed variables Q6, Q9, Q12, Q49, Q51, Q61 and Q66 demonstrated moderate to low path values varying between .45 and .65, which is as a rule not considered as a good coefficient for acceptability. These observed variables also show high standard error, indicating that they cannot be sufficiently explained by the latent construct *Identification*. This finding is indicative of a limited fit with judgement or sound theory regarding the relationship between the latent construct and these observed variables. Except for variable Q49, the other observed variables had originally been defined to form part of the self-identity dimension.

Figure 4.5: Standardised estimated parameters of the four-factor model



However, on the basis of the researcher's belief at that point, she decided to retain these items as part of one dimension because these constructs seemed to be very similar; according to Lee (as cited in Edwards, 2005, p. 210), identification involves a sense of belongingness, and this is supported by Ashforth and Mael (1989, p. 21), who referred to identification as "the perception of oneness or belongingness".

Identification is a very complex phenomenon (Edwards & Peccei, 2007). Edwards and Peccei developed an instrument for measuring organisational identification (OID). According to them OID, is a multi-dimensional construct comprising three empirically distinct, yet strongly related components: self-categorisation and labelling; value and goal synergy; and belonging and membership. "Self-categorisation and labelling" refers to the process by which individuals categorise themselves as members of the organisation as a social category and, through the process, effectively label themselves as organisational members (Ashforth & Humphrey, as cited in Edwards & Peccei (2007). "Value and goal synergy" refers to the extent to which employees share the values and goals of the organisation and integrate them into their own belief system (Ashforth & Mael, 1989). "Belonging and membership" refers to the extent to which employees experience a sense of attachment to, belonging and membership of the organisation (Brown, 1969; Lee, as cited in Edwards, 2005). Edwards and Peccei found that although these three subcomponents are analytically and empirically distinct, they were found to be strongly interrelated and therefore showed very low discriminant validity.

According to Edwards and Peccei (2007), in practice it might not be meaningful and/or sensible to treat the three subcomponents as completely separate constructs and use them as distinct variables in analysis. They therefore suggest that it may rather be preferable to combine the three subcomponents into an aggregate measure and use it as a single overall scale of OID.

Avey et al. (2009) argue that although the underlying principle of ownership may be manifested in both self-identity and belongingness, these two should remain distinct, yet

related constructs. However, preliminary exploratory factor results conducted on the psychological ownership questionnaire (POQ) developed by Avey et al. (2009) on a South African sample comprising 145 health professional employees also indicated that the self-identity and sense of belonging items load onto one factor.

Higher, more acceptable path values were displayed by the remaining observed variables, ranging between .70 and .85.

In the case of *Responsibility* (F2), the highest coefficient is displayed by variable Q47 (.80) and the lowest coefficient by variable Q59 (.59).

In the case of *Autonomy* (F3), an overall better indication of reliability in comparison with the previous latent constructs is displayed, with the lowest path value of .63 for variable Q11. The other coefficients vary from .68 to .84.

Territoriality (F4) displays coefficients ranging between .48 and .81. Variable Q2 has the lowest path value (.48) and variable Q39 the highest path value (.81). Once again, in the case of variable Q2, it seems that the logically and theoretically aligned concept cannot be adequately explained by the latent construct.

The latent constructs were also allowed to correlate. Theoretically, well-defined constructs should reveal low values. The correlations in this model between the latent constructs *Identity* and *Responsibility* and *Responsibility* and *Autonomy* were relatively low, with values of .46 and .48 respectively. A moderate correlation with the value of .65 was found between *Identity* and *Autonomy*. As expected, and confirmed by the second-order factor analysis, the latent construct, *Territoriality* (the preventative form of psychological ownership) showed either no (.00) or extremely low negative correlations (-.09 and -.03) with the other more promotive latent constructs.

4.2.8 Step 8: Discriminant and criterion-related validity

4.2.8.1 Discriminant validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs (Fornell & Larcker, 1981). In this study, evidence of discriminant validity was provided by the following procedure recommended by Fornell & Larcker. The variance extracted (VE) estimates (the average squared factor loading (Hair et al., (2006)) for two factors were compared and then compared with the squared correlation between the two factors. If the variance extracted estimates for both factors exceeds the squared correlation, discriminant validity is demonstrated. The correlations and squared correlations between the factors are depicted in Table 4.21.

Table 4.21: Correlations and squared correlations between the four factors

		Factor 1: Identification	Factor 2: Responsibility	Factor 3: Autonomy	Factor 4: Territoriality
Factor 1: Identification	1	1.000	(.132)	(.217)	(.011)
Factor 2: Responsibility	2	.363	1.000	(.067)	(.002)
Factor 3: Autonomy	3	.466	.256	1.000	(.002)
Factor 4: Territoriality	4	.105	-.048	-.047	1.000
Variance Extracted (VE)		.460	.460	.470	.430

Note: Values shown in brackets above the diagonal are squared correlations

As illustrated in Table 4.21, the correlation between factor 1 (*Identification*) and factor 2 (*Responsibility*) for example is .363 and the squared correlation is .132. The variance extracted estimate for both factor 1 (*Identification*) and factor 2 (*Responsibility*) is .460. The discriminant validity of factor 1 (*Identification*) and factor 2 (*Responsibility*) was

confirmed, because the variance extracted estimates exceeded the square of the inter-factor correlation.

The correlation between factor 2 (*Responsibility*) and factor 3 (*Autonomy*) is .256 and the squared correlation is .067. The variance extracted estimates for factor 2 (*Responsibility*) and factor 3 (*Autonomy*) are .460 and .470 respectively. Since the variance extracted estimates exceeded the square of the inter-factor correlation, the discriminant validity of factor 2 (*Responsibility*) and factor 3 (*Autonomy*) is confirmed.

The correlation between factor 1 (*Identification*) and factor 3 (*Autonomy*) is .466 and the squared correlation is .217. The variance extracted estimates for factor 1 (*Identification*) and factor 3 (*Autonomy*) are .460 and .470 respectively, therefore, similarly, the discriminant validity of factor 1 (*Identification*) and factor 3 (*Autonomy*) is confirmed, due to the fact that the variance extracted estimates exceeded the square of the inter-factor correlation.

In the case of factor 4 (*Territoriality*), examination of the other variance extracted estimates (.460, .460 and .470) and squared correlation coefficients (.011, .002 and .002) confirmed discriminant validity within the model.

4.2.8.2 Criterion-related validity

According to Cronbach and Meehl (1955), the relationship of the focal construct with other similar constructs should be examined to develop a nomological network. In this study, evidence of criterion-related validity was provided by examining the relationships between measures of psychological ownership and other theoretically related constructs, such as organisational commitment (Avey et al., 2009; Mayhew et al., 2007; O'Driscoll et al., 2006). Other measures that were included in the primary study to explore the corresponding semantic network were job satisfaction and turnover intentions (Avey et al., 2009; Buchko, 1993; Mayhew et al., 2007; Pierce et al., 1991; Vandewalle et al., 1995; Van Dyne & Pierce, 2004). According to Bagozzi and Yi

(1988), it is essential that researchers carefully scrutinise the internal structure of their model even if global measures of fit imply a satisfactory model. Therefore, for the purposes of this study, the composite reliability of promotive psychological ownership was calculated, as suggested by Schepers (1992). A high composite reliability value of .945 was calculated for the promotive psychological ownership dimension. According to Bagozzi and Yi, composite reliability values of greater than .60 are desirable.

- **Organisational commitment**

To assess organisational commitment, all eight items from Allen and Meyer's (1991) Affective Organisational Commitment Scale were used. Affective commitment refers to "the employee's emotional attachment to, identification with, and involvement in the organization" and "[E]mployees with a strong affective commitment continue employment with the organization because they *want* to do so" (Meyer & Allen, 1991, p. 67). Both VandeWalle et al. (1995) and Van Dyne and Pierce (2004) have shown that affective commitment is related to psychological ownership. The eight items were measured on a seven-point scale, ranging from 1 = strongly disagree to 7 = strongly agree. Allen and Meyer (1990) found a coefficient alpha of .87 for the affective commitment scale. In this study, the affective commitment scale yielded an acceptable reliability alpha ($\alpha = .71$).

- **Job satisfaction**

Job satisfaction was measured using three items that form part of Hackman and Oldham's (1980) Job Diagnostic Survey. Although Idaszak et al. (1988) suggest that an instrument should have at least four to six items per scale, Tabachnick and Fidell (2007) suggest retaining at least three items per factor. According to Tabachnick and Fidell (2007), it is possible to retain a factor with only two items if the items are highly correlated (i.e., $r > .70$) and relatively uncorrelated with other variables. The three items were measured on a seven-point scale, ranging from 1 = disagree strongly to 7 = agree strongly. This scale demonstrated internal reliability of .65.

- **Turnover intentions**

Turnover intentions were assessed by using a three-item turnover intention scale used by O’Driscoll and Beehr (1994). Zwick and Velicer (1986) and Gorsuch (1997) suggest that factors need at least three to four substantial factor loadings within the .40 (after rotation) range to be considered substantially meaningful. The three items rated whether respondents thought about leaving their job, planned to look for a new job over the next 12 months, and would actively search for a new job outside the organisation. O’Driscoll and Beehr (1994) obtained an alpha of .93 from the three-item turnover intention scale in their study. The three items were measured on a six-point rating scale where the response format varied for each item. The Cronbach alpha for turnover intentions was .77.

Correlation results

Correlation between the constructs was determined by means of Pearson correlation. Although the distribution is skewed, it was more useful to employ Pearson correlation because of the relatively large sample size ($N = 713$). As opposed to the more promotion-oriented forms of psychological ownership, feelings of territoriality showed no relationship with the outcome variables. Pierce et al. (1991) propose that psychological ownership is an antecedent to organisational commitment. As anticipated, and in accordance with empirical research findings by Avey et al. (2009), Mayhew et al. (2007) and O’Driscoll et al. (2006), promotive psychological ownership was positively related to affective commitment toward the organisation with an $r = .642$ ($p < 0.01$). A positive relationship was confirmed between job satisfaction and promotive psychological ownership ($r = .536$, $p < 0.01$). Empirical research findings (e.g. Avey et al. (2009), Buchko (1993), Mayhew et al. (2007), Pierce et al. (2007), VandeWalle et al. (1995) and Van Dyne and Pierce (2004)) support a positive relationship between job satisfaction and psychological ownership. According to Mayhew et al., although evidence indicates relationships between psychological ownership and commitment and job satisfaction, the emergence of such relationships may be a consequence of conceptual overlap.

The distinctiveness of the psychological ownership construct was supported by previous research done by Van Dyne and Pierce. They found that organisation-based psychological ownership could clearly be distinguished from both affective commitment and job satisfaction.

As expected and confirmed by Avey et al. (2009), turnover intentions were negatively related to promotive psychological ownership with an $r = - .376$ ($p < 0.01$).

The correlation results for all study variables are reported in Table 4.22.

Table 4.22: Relationships with Psychological Ownership

		Promotive psychological ownership	Identification	Responsibility	Autonomy	Territoriality	Commitment	Job satisfaction	Turnover intentions
Promotive psychological ownership	Pearson Correlation	1	.944**	.614**	.757**	.011	.642**	.536**	-.376**
	Sig. (2-tailed)		.000	.000	.000	.759	.000	.000	.000
	N	713	713	713	713	713	713	708	709
Identification	Pearson Correlation	.944**	1	.416**	.575**	.040	.675**	.526**	-.412**
	Sig. (2-tailed)	.000		.000	.000	.286	.000	.000	.000
	N	713	713	713	713	713	713	708	709
Responsibility	Pearson Correlation	.614**	.416**	1	.364**	-.030	.324**	.249**	-.115**
	Sig. (2-tailed)	.000	.000		.000	.417	.000	.000	.002
	N	713	713	713	713	713	713	708	709
Autonomy	Pearson Correlation	.757**	.575**	.364**	1	-.033	.371**	.420**	-.236**
	Sig. (2-tailed)	.000	.000	.000		.375	.000	.000	.000
	N	713	713	713	713	713	713	708	709
Territoriality	Pearson Correlation	.011	.040	-.030	-.033	1	-.071	-.147**	.156**
	Sig. (2-tailed)	.759	.286	.417	.375		.058	.000	.000
	N	713	713	713	713	713	713	708	709
Commitment	Pearson Correlation	.642**	.675**	.324**	.371**	-.071	1	.467**	-.459**
	Sig. (2-tailed)	.000	.000	.000	.000	.058		.000	.000
	N	713	713	713	713	713	713	708	709
Job satisfaction	Pearson Correlation	.536**	.526**	.249**	.420**	-.147**	.467**	1	-.475**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	708	708	708	708	708	708	708	708
Turnover intentions	Pearson Correlation	-.376**	-.412**	-.115**	-.236**	.156**	-.459**	-.475**	1
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.000	.000	
	N	709	709	709	709	709	709	708	709

**. Correlation is significant at the .01 level (2-tailed).

4.2.8.3 Comparing different groups

Independent sample *t*-tests and the analysis of variance (ANOVA) technique were conducted to assess whether employees varying in biographical variables (age, gender, ethnic group, education, the sector in which their organisation operates, level in the organisation and registration with a professional board) differed significantly with regard to the specific dimensions (*Identification, Responsibility, Autonomy and Territoriality*) underlying the concept of psychological ownership. Independent sample *t*-tests were used to test whether significant differences existed between the means of two groups, and where several independent variables were compared the analysis of variance (ANOVA) technique was used.

Independent sample *t*-tests were conducted for the following biographical variables:

- Ethnic group
- Gender
- Registration at a professional board

ANOVAs were conducted for the following biographical variables:

- Level in the organisation
 - Age
 - Educational level
 - Sector in which the organisation operates
-
- **Ethnic groups**

According to Pierce et al. (2003), cultural aspects of a social context may have a significant influence on people's psychological ownership. Pierce and colleagues suggest that it is possible that feelings of ownership may be present in different cultures to a different extent.

According to Pierce et al. (2003), different targets and different characteristics of potential targets of psychological ownership may become more important in different cultures. The different types of target towards which people develop feelings of ownership will depend on where the self-concept of individuals in a given society predominantly resides. For example, cultures that are more collectivistic, familial and relationship based tend to be more orientated towards family and friends, while cultures that are more individualistic gain their self-concept primarily from their personal successes and achievements. It can be expected that the former will develop feelings of ownership primarily towards social targets like people and family, while the latter would focus more on their material possessions and work that address these achievements.

According to Maré (2009, p 84),

Even without sound theoretical analysis it is evident that the white South African is strongly representative of an independent individualist style. Black South Africans, on the other hand, constitute a cohesive approach that can be deemed rather the opposite of individualism.

According to Arnoldi-Van der Walt (as cited in Maré, 2009), a contrast exists between the individualistic understanding which is manifested in the western model of society and the *ubuntu* model. *Ubuntu* is an African humanist philosophy that focuses on people's interconnectedness with one another. According to the *Ubuntu* belief, a person cannot exist as a human being in isolation because your actions affect the whole world. Arnoldi-Van der Walt (as cited in Maré, 2009, p 87) compares the Western and *Ubuntu* models with regard to the social/environmental and cultural context, as presented in Table 4.23.

Table 4.23: Differences in social/environmental/cultural context between Western and Ubuntu models

Western model	Ubuntu model
Individualistic culture: view themselves as individuals who together form a group; self reliant	High collectivist culture: group affiliation much more important than individuality; dependent
Low face-saving culture: very direct	High face-saving culture: dignity; inclusive group orientation; greatest fear is rejection by the group
Low-context culture: information explicitly conveyed	High-context culture: information implicitly conveyed; unconditional dialogue
In the forefront of development/utilization of modern technology	Low utilization of management of foreign technology
The more the individual has, the more powerful he/she is	The more the communal person is prepared to give and share, the more respected he/she is

Source: Maré (2009, p. 87)

An independent *t*-test was used to determine the difference between black and white South African employees with regard to the dimensions of psychological ownership. Differences in the mean scores would indicate that the two groups differ with regard to their perception of psychological ownership. The results of the independent *t*-test are displayed in Table 4.24. According to Levene's test, this study found that a significant ($p < .05$) difference exists between black employees and white employees, specifically towards the *Responsibility* and *Territoriality* dimensions of psychological ownership.

With regard to the *Responsibility* dimension of psychological ownership, white employees (mean = 41.907) showed a slightly higher inclination towards responsibility in their organisations than black employees (mean = 40.328). This indicates that white employees still take full responsibility for the organisations in which they are currently employed in order to secure their jobs. They cannot afford to lose their jobs since competition in the market is stronger than ever due to the implementation of employment equity (EE) and black economic empowerment (BEE). This is supported by a study conducted by Berg, Buys, Schaap and Olckers (2004) on Scheper's Locus of Control Inventory. They found differences between English second-language (black people) and first-language (white people) groups with regard to their internal locus of control (the individual believes that outcomes are a consequence of her or his own behaviour). The first-language group showed a higher internal locus of control than the

second-language group. The practical significance ($d = .355$) between black employees and white employees with regard to responsibility reflects a medium effect size.

The difference that exists between black employees (mean = 19.729) and white employees (mean = 16.452) with regard to *Territoriality* can probably be ascribed to black people's collectivistic culture. This is related to a study conducted by Watkins (1995) among 487 managers working in various South African organisations, which found that black managers experience a stronger sense of entitlement than their white colleagues, which is ascribed to deprivation in the past. The difference between black employees and white employees with regard to territoriality reflects a medium effect size ($d = .658$).

Table 4.24: t-test: Ethnic groups

Dependent variables	Groups	N	Mean	Standard Deviation	t-value	Sig. (2-tailed)	d
Identification	White	418	71.794	13.268	-1.717	.086	.132
	Black	284	73.514	12.665			
Responsibility	White	418	41.907	3.509	4.610	.000*	.355
	Black	284	40.328	4.998			
Autonomy	White	418	27.845	5.313	.443	.658	.034
	Black	284	27.666	5.178			
Territoriality	White	418	16.452	4.812	-8.615	.000*	.658
	Black	284	19.729	5.137			

* $p < .05$

- **Gender**

Results of the independent *t*-test as displayed in Table 4.25 indicated that a significant difference exists between males and females with regard to the *Responsibility* and *Territoriality* dimensions. Males (mean = 41.760), on the one hand, seem to feel more responsible and take more responsibility than their female counterparts (mean = 40.886), whereas females (mean = 18.571), on the other hand, tend to be more territorial than

males (mean = 16.728). The reason for this might be the fact that the workplace is traditionally occupied by males and thus it is an environment in which males take up a natural role and the accountability for that role. One may say that males are groomed for these roles through the cultural view that the male is expected to be the breadwinner. This is supported by Coetzee (2008), who found in her study that males and females differed significantly with respect to their career preferences. The male respondents showed significantly higher mean scores than the females with regard to managerial (referring to individuals who view upward mobility to positions of successively greater responsibility) and autonomy (referring to independence and freedom from external interruptions) career preferences.

According to Lamphere (1985), our culture still assumes that women are primarily daughters, wives, and mothers and therefore are expected to care for the children and household, thus their achievements in the workplace involve a much more arduous journey; they have to fight for their equivalent place in the corporate world and this is evident in their higher territorial behaviour. Although significant differences were found between males and females with regard to these two dimensions, a medium effect size ($d = .209$ and $d = .358$) was calculated.

Table 4.25: t-test: Gender

Dependent variables	Groups	N	Mean	Standard Deviation	t-value	Sig. (2-tailed)	<i>d</i>
Identification	Male	287	72.265	13.376	-.415	.678	.032
	Female	420	72.679	12.749			
Responsibility	Male	287	41.76	3.958	2.699	.007*	.209
	Female	420	40.886	4.402			
Autonomy	Male	287	27.728	5.097	-.161	.872	.012
	Female	420	27.793	5.346			
Territoriality	Male	287	16.728	5.116	-4.681	.000*	.358
	Female	420	18.571	5.158			

* $p < .05$

- **Registration with a professional board**

An independent *t*-test was conducted between employees registered with a professional board and those that were not registered. Table 4.26 indicates a significant difference between employees registered with a professional board and those not registered with regard to the *Identification* and *Territoriality* dimensions. People who are registered (mean = 73.605) seem to have a higher feeling of identification than those who are not registered (mean = 18.784), as well as a greater territorial need than those who are not registered (mean = 71.395 and mean = 16.678 respectively). Since a professional qualification indicates that the person is a competent professional, whose skills and knowledge are highly valued by industry peers, a professional qualification allows employees to plan their continuous professional development (CPD) with structure and direction that can lead to the enhancement of their career prospects; provision of higher earning potential and greater status and influence (Institute of Telecommunications Professionals).

A significant portion of the research population consisted of professionals working in the mining and engineering field, where there are stringent regulatory obligations in their professional environment. Stringent laws may result in non-compliant professionals receiving harsh penalties or even jail sentences. The result of this can be seen in their higher mean with regard to *Identification* and *Territoriality*.

The practical significance value for *Identification* was $d = .169$, reflecting a small effect size and therefore negligible in terms of practical importance. The practical significance ($d = .412$) for *Territoriality*, however, reflected a medium effect size.

Table 4.26: t-test: Registration with a professional board

Dependent variables	Groups	N	Mean	Standard Deviation	t-value	Sig. (2-tailed)	d
Identification	Registered	324	73.605	12.870	2.205	.028*	.169
	Not-registered	357	71.395	13.235			
Responsibility	Registered	324	41.043	4.771	-1.717	.086	.133
	Not-registered	357	41.608	3.675			
Autonomy	Registered	324	28.034	4.821	1.039	.299	.08
	Not-registered	357	27.613	5.659			
Territoriality	Registered	324	18.784	5.194	5.383	.000*	.412
	Not-registered	357	16.678	5.011			

*p<.05

- **Age**

The ANOVA results displayed in Table 4.27 indicate that there is a significant ($F = 6.302$; $p < .05$) difference between the age groups with regard to their territorial need. A Sheffé post-hoc test was conducted to determine exactly where the difference lies. Employees in the age category 40–49 years (mean = 19.00) seem to be more territorial than those under 29 years of age (mean = 17.285), those between 30 and 39 years of age (mean = 17.291), and those older than 50 years of age (mean = 17.083).

Employees older than 50 are less territorial since most organisations today allow staff to take early retirement at age 55. The respondents who are on average older than 50 ($n = 123$) are therefore less territorial, since they have an exit option out of the organisation by requesting early retirement. This does not, however, apply to the age group 40–49 years, who in the current economic downturn are at high risk of retrenchment and a probable target of transformation. Their territorial score is much higher, confirming their fight for corporate survival, while employees younger than 40 years in generation X are still confident that they can climb the corporate ladder either in their current or an alternative organisation. This is confirmed by a study conducted by Coetzee (2008), who found that employees in the middle and late adulthood life stages showed a higher

need for developing expertise by means of further growth and learning opportunities than those in the early adulthood life stage. This confirms their belief that with the acquired skills they will improve their employability and will be able to prove their ability to their superiors.

The effect size was partial η^2 with a value of .027, which is an indication of a small effect size. Although the partial η^2 value was small, determining effect sizes between specific groups reveals medium effect sizes as follows: a $d = .322$ value between the group under 29 years of age and those between 40 and 49 years of age, a value of $d = .342$ between 30–39 years and 40–49 years old, and a $d = .352$ value between those employees between 40 and 49 and those older than 50 years.

Table 4.27: ANOVA and post-hoc Scheffé's test – Age

Dependent variables	F – value	Sig.	Sub-groups	N	Mean	Standard Deviation	Partial eta squared
Identification	2.331	.073	<29	137	70.839	13.516	.010
			30-39	213	71.667	12.187	
			40-49	240	73.163	13.167	
			50+	122	74.602	13.208	
Responsibility	1.354	.256	<29	137	40.883	3.963	.006
			30-39	213	41.366	4.195	
			40-49	240	41.042	4.280	
			50+	122	41.829	4.517	
Autonomy	1.420	.236	<29	137	27.314	4.940	.006
			30-39	213	27.418	5.715	
			40-49	240	28.092	4.889	
			50+	122	28.317	5.280	
Territoriality	6.302	.000*	<29	137	17.285 ^a	5.229	.027
			30-39	213	17.291 ^b	4.567	
			40-49	240	19.00 ^{abc}	5.386	
			50+	122	17.083 ^c	5.492	

* $p < .05$

- **Educational level**

Using the Scheffé's test of post-hoc comparisons, the following groups differed significantly on the *Identification* ($F = 4.063$; $p < .05$), *Responsibility* ($F = 4.083$; $p < .05$), *Autonomy* ($F = 3.000$; $p < .05$), and *Territoriality* ($F = 13.249$; $p < .05$), dimensions: employees with a bachelor's degree (mean = 74.748) showed a stronger identification with the organisation than employees with postgraduate degrees (mean = 70.543). Postgraduates (mean = 41.732) showed a slightly higher inclination towards responsibility in their organisations than employees having a diploma (mean = 40.493). Given that postgraduates are probably employed in senior management positions, this is another indication that, socially and by law, strenuous responsibility is placed on senior management for decisions made and actions taken. According to Coetzee (2008, p. 18), "people with a post-graduate qualification seem to have a higher sense of career calling and are more interested in applying their expertise where they can help make a difference in their own and other's lives".

Postgraduates (mean = 28.093) experience more autonomy in the workplace than employees with only Grade 12 (mean = 25.883) as their highest qualification. This is supported by Brass's (1985) observation that employees exposed to high job design autonomy experienced more influence (control) than their counterparts working with low autonomy. This assumption is based on the fact that postgraduates are probably employed in higher management positions where they have the freedom to schedule work and determine how it is done (Ashforth & Saks, 2000)

With regard to the *Territoriality* dimension, employees with a diploma (mean = 19.331) showed a higher territorial need than those with a bachelor's degree (mean = 16.807) or postgraduate degree (mean = 16.736). In a typical organisational hierarchy the number of junior management employees competing for the next middle management position is in all probability 10:1, while the contenders for the next senior management positions are two or three candidates. This assumption is based on the fact that postgraduates are employed at the senior management level. According to Coetzee and Schreuder (as

cited in Coetzee, 2008), people with an undergraduate qualification seem to be more job orientated and are more attracted to careers that afford them the opportunity to apply and develop their own skills in positions of power and influence.

Partial η^2 showed small effect size values (.17, .17, .13 and .54 respectively). However, the calculation of effect sizes between the different groups showed the following results: a medium effect size of $d = .33$ between those with a bachelor's degree and those with a postgraduate degree with regard to *identification*; a medium effect size of $d = .283$ between those employees holding a diploma and those with a postgraduate degree with regard to *responsibility*; a medium effect size of $d = .397$ between employees with a Grade 12 and employees with a postgraduate degree with regard to the *autonomy* dimension. With regard to the *territoriality* dimension, a medium effect size of $d = .475$ was calculated between diploma holders and bachelor degree holders, as well as between diploma holders and postgraduate degree holders with a value of $d = .515$. The results of the ANOVA are displayed in Table 4.28.

Table 4.28: ANOVA and post-hoc Scheffé’s test – Education

Dependent variables	F - value	Sig.	Sub-groups	N	Mean	Standard Deviation	Partial eta squared
Identification	4.063	.007*	Grade 12	60	72.1500	12.513	.017
			Diploma	223	73.646	13.029	
			Bachelor’s degree	135	74.748*	11.842	
			Post-graduate	280	70.543*	13.555	
Responsibility	4.083	.007*	Grade 12	60	41.383	3.532	.017
			Diploma	223	40.493*	4.812	
			Bachelor’s degree	135	41.674	4.055	
			Post-graduate	280	41.732*	3.879	
Autonomy	3.000	.030*	Grade 12	60	25.883*	5.666	.013
			Diploma	223	27.803	5.000	
			Bachelor’s degree	135	27.948	5.017	
			Post-graduate	280	28.093*	5.435	
Territoriality	13.249	.000*	Grade 12	60	18.667	5.401	.054
			Diploma	223	19.331 ^{ab}	5.426	
			Bachelor’s degree	135	16.807 ^a	5.165	
			Post-graduate	280	16.736 ^b	4.604	

*p < .05

- **Sector in which organisation operates**

ANOVA results displayed in Table 4.29 indicate a significant difference in the extent to which the different sectors in which the organisation operates vary, with regard to the *Responsibility* ($F = 4.880$; $p < .05$) and *Territoriality* ($F = 16.084$; $p < .05$) dimensions. Once more the post-hoc test of Sheffé was employed to determine where the differences between the groups lie. Employees working in the financial sector (mean = 2.67) seem to be more responsible than those employed in the government sector (mean = 40.506), or those working in other sectors (mean = 40.919) such as telecommunications, information technology, professional services and others. Employees working in the government sector (mean = 19.913) seem to be more territorial than those employed in the financial sector (mean = 16.301), chemical industry (mean = 16.204) as well as manufacturing and production (mean = 17.182)

which include the mining sector. Those employees employed in other sectors (mean = 18.626) such as telecommunications, information technology and professional services showed a higher territorial need than those working in either the financial sector (mean = 16.301) or the chemical industry (mean = 16.204).

Financial service employees are subject to stringent regulatory compliance laws both in South Africa and internationally (e.g. the BASIL-code). Employees within the financial services organisations write annual compliance exams to verify their knowledge and understanding of these laws and they are not allowed to perform their duties if these exams are not completed in a specified period. The FAIS Act (Financial Advisory and Intermediary Services Act), for example, was introduced to regulate all financial advisors and intermediaries. The aim of this act is to protect the consumer against inappropriate financial advice. The financial service sectors' responsibility score is much higher than that of other organisations, since the responsibility of passing these compliance exams has been internalised and each employee is responsible for performance in this regard in his or her own right. Similar compliance regulations are not applicable within the government sector.

Partial eta squared values of .028 and .085 indicated small effect sizes. However, medium effect sizes of $d = .476$ were calculated between employees working in the financial sector and those in the government sector with regard to the *Responsibility* dimension and $d = .423$ between employees employed in the financial sector and those employed in other sectors. With regard to the *Territoriality* dimension, the following results were found: a relatively high medium effect size of $d = .753$ between employees in the financial and government sector, between employees in the financial and other sectors ($d = .735$) and between employees in the chemical industry and government sector ($d = .785$). Medium effect sizes were also calculated between those employed in the chemical industry and other sectors ($d = .446$) and those working in the government and manufacturing and production sectors ($d = .546$).

Table 4.29: ANOVA and post-hoc Scheffés test – Sector in which the organisation operates

Dependent variables	F - value	Sig.	Sub-groups	N	Mean	Standard Deviation	Partial eta squared
Identification	1.456	.214	Financial services	103	70.592	14.803	.008
			Chemical / Petroleum	186	71.839	12.143	
			Government	172	72.523	13.102	
			Manufacturing & production	110	74.691	11.846	
			Other	123			
Responsibility	4.880	.001*	Financial services	103	42.67 ^{ab}	3.725	.028
			Chemical / Petroleum	186	41.634	3.243	
			Government	172	40.506 ^a	4.953	
			Manufacturing & production	110	41.164	4.374	
			Other	123	40.919 ^b	4.479	
Autonomy	.488	.744	Financial services	103	28.301	5.490	.003
			Chemical / Petroleum	186	27.538	5.476	
			Government	172	27.680	5.102	
			Manufacturing & production	110	28.046	5.007	
			Other	123	27.553	5.330	
Territoriality	16.084	.000*	Financial services	103	16.301 ^{ab}	4.907	.085
			Chemical / Petroleum	186	16.204 ^{cd}	4.766	
			Government	172	19.913 ^{ace}	4.658	
			Manufacturing & production	110	17.182 ^e	5.297	
			Other	123	18.626 ^{bd}	5.470	

*p < .05

- **Level in the organisation**

The four different levels on which people operate in their organisations were compared. The different levels are as follows: operational level, junior management level, middle management level and senior management level. From the ANOVA results displayed in

Table 4.30, it is evident that significant ($p < .05$) differences exist between the four groups with regard to the different dimensions that psychological ownership comprises.

Post-hoc comparisons done by means of the Scheffé test reveal significant differences among the four groups in the following dimensions:

- *Identification*

Once again significant differences ($F = 5.392$; $p < .05$) exist between employees functioning on operational level and junior management level and those on senior management level. Employees on senior management level (mean = 76.450) showed a higher sense of identification toward their organisations than those employees functioning on operational level (mean = 70.873) and junior management level (mean = 71.240). Senior management may feel a stronger sense of ownership and feel “part of the pride” because normally they have been in the organisation for quite some time. These people are usually heads of departments in which they play a dominant role and where they take decisions on both human and asset capital and see the effect of the decisions within the organisation. This may enhance their feelings of attachment to the organisation. They feel they have earned their wings”. Govender and Parumasur (2010) for example, found that top managers possess and display significantly higher levels of director competencies than middle and senior managers. (Competencies in the director role entail communicating a vision, setting goals and objectives, and designing and organising.) The partial eta squared value calculated was small (.023). Cohen’s d (1992) was calculated between employees on operational level and senior management level and a medium effect size of ($d = .434$) was revealed. A medium practical significance ($d = .414$) was found between junior management and senior management level employees.

- *Responsibility*

There is a significant difference ($F = 5.483$; $p < .05$) between employees on operational level and junior management level and those employees on senior management level with regard to *Responsibility*. Employees on senior management (mean = 42.450) level showed a slightly higher inclination towards responsibility in their organisations than those on operational level (mean = 40.910) and junior management level (mean = 40.653). Both socially and by law, there is strenuous responsibility placed on senior management and they can be held liable for major disasters such as health and safety breaches, and can be personally fined or receive a jail sentence. According to Wood and Winston (2007, p.169), leaders should be accountable, therefore need to accept the responsibilities inherent in their leadership position, “not just for activities, circumstances, or past results, but for future direction, potential effectiveness, possibility thinking, an inspiring shared vision, and maximum contribution”. The partial eta squared value calculated was small (.023). Calculation of the effect sizes revealed a medium practical significance ($d = .331$) between employees on operational level and those on senior management level. A medium effect size value of $d = .422$ was also found between employees functioning on junior management level and those on senior management level.

- *Autonomy*

With regard to the *Autonomy* dimension, a significant difference ($F = 10.094$; $p < .05$) exists between employees on an operational level (mean = 26.864) and those on middle management level (mean = 28.448) and senior management level (mean = 29.592). Both employees on middle management level and senior management level experience more autonomy in the workplace than those who function on an operational level. A significant difference also exists between employees on junior management level (mean = 26.813) and those on middle management level (mean = 28.448) and senior management level (mean = 29.592). Both employees on middle management level and senior management level experience more autonomy in the workplace than those who

function on junior management level. The reason for this difference probably lies in the fact that the higher up the employees are in the organisation, the broader their mandate to make decisions and the bigger the impact of those decisions will be on the long-term sustainability of the organisation. This is supported by Brass (1985), who observed that employees exposed to high job design autonomy experienced more influence (control) than their counterparts working with low autonomy. A small partial eta squared value of .042 was calculated for the autonomy dimension. Medium practical significance was reflected between operational and middle management level employees ($d = .308$), between operational and senior management level employees ($d = .516$), between junior management and middle management employees ($d = .326$) and between junior management and senior management employees ($d = .538$).

- *Territoriality*

The following groups differ significantly ($F = 5.284$; $p < .05$) with regard to the *Territoriality* dimension: employees functioning on the operational level (mean = 18.733) showed a higher territorial need than employees functioning on senior management level (mean = 16.575). Operational staff displays an attachment to their department/organisation for the purposes of constructing, communicating, maintaining, and restoring (Brown et al., 2005). This is done to ensure their department access and to maintain their existing capacity and resources despite the general cut-back experienced by many organisations in the current economic downturn. Further indication of territorial behaviour on operational level is that operational teams mark their areas with personalised insignia (Brown et al., 2005). Senior management showed a lower territorial need, as many of them have their own office to which they feel attached, while operational staff normally works in open-plan offices where personal space is limited. Although a partial eta squared value for the *Territoriality* dimension calculated was small, a medium effect size of $d = .407$ was reflected between operational and senior management level employees.

Table 4.30: ANOVA and post-hoc Scheffé’s test – Level in the organisation

Dependent variables	F – value	Sig.	Sub-groups	N	Mean	Standard deviation	Partial eta squared
Identification	5.392	.001*	Operational	221	70.873 ^a	13.375	.023
			Junior management	150	71.240 ^b	12.853	
			Middle management	201	72.751	12.925	
			Senior management	120	76.450 ^{ab}	12.218	
Responsibility	5.483	.001*	Operational	221	40.910 ^a	4.495	.023
			Junior management	150	40.653 ^b	3.629	
			Middle management	201	41.647	3.547	
			Senior management	120	42.450 ^{ab}	4.784	
Autonomy	10.094	.000*	Operational	221	26.864 ^{a b}	5.663	.042
			Junior management	150	26.813 ^{cd}	5.422	
			Middle management	201	28.448 ^{ac}	4.547	
			Senior management	120	29.592 ^{bd}	4.857	
Territoriality	5.284	.001*	Operational	221	18.733 ^a	5.089	.023
			Junior management	150	17.260	5.113	
			Middle management	201	17.617	4.976	
			Senior management	120	16.575 ^a	5.497	

*p < .05

- **Number of years working in the current organisation**

However, contrary to general belief, Table 4.31 indicates that no significant differences exist between the number of years employees have worked in their current organisation and the dependent variables. Pierce et al. (2001) propose that a longer association with a target (e.g. long tenure) will probably lead to perceptions of knowing the target better and as a result, to a sense of ownership.

Table 4.31: ANOVA and post-hoc Scheffé’s test – Number of years working in the current organisation

Dependent variables	F - value	Sig.	Sub-groups	N	Mean	Standard deviation	Partial eta squared
Identification	3.709	.464	Less than 5 years	307	70.981	14.013	.015
			6-10 years	138	72.044	12.667	
			11-20 years	163	74.282	11.341	
			21+ years	105	74.895	12.187	
Responsibility	1.449	.227	Less than 5 years	307	41.283	4.087	.006
			6-10 years	138	41.261	4.338	
			11-20 years	163	40.761	4.722	
			21+ years	105	41.857	3.707	
Autonomy	1.718	.162	Less than 5 years	307	27.365	5.398	.007
			6-10 years	138	27.790	5.306	
			11-20 years	163	27.988	4.765	
			21+ years	105	28.657	5.288	
Territoriality	.372	.774	Less than 5 years	307	17.808	4.968	.002
			6-10 years	138	17.768	4.972	
			11-20 years	163	18.147	5.507	
			21+ years	105	17.476	5.693	

*p < .05

- **Number of years working in current position**

According to the results displayed in Table 4.32, significant differences exist between the numbers of years employees have worked in their current position in the organisation with regard to the *Territoriality* dimension ($F = 6.638$; $p < .05$). Once more a Scheffé post-hoc test was conducted to determine where the differences lie between the groups. The results indicated that employees employed for less than 5 years in their current position differ significantly from employees who have worked between 6 and 10 years and 11 to 20 years in their current position in terms of their territorial need. Employees who have worked between 6 and 10 years (mean = 18.971) and 11 and 20 years (mean = 19.131) in their current position indicated a higher territorial need than employees employed for less than 5 years (mean = 17.214) in their current position.

Employees working in their current position for 11 to 20 years have reached corporate maturity and have made their position absolutely their own. This is good news for the organisation, which has employees that are well entrenched in their position and form the backbone of the organisation. The downside of this is that these employees may have fallen into a comfort zone and may no longer grow with the organisation. They display a higher territorial score since they are protecting their current environment and will oppose any change in their operating environment. Prevention-orientated people tend to be less open to change and they prefer to stick with the already known (Kark & Van Dijk, 2007). It seems that employees who have worked in their current position for 11 to 20 years are more prevention-orientated and therefore more territorial than employees employed for less than 5 years in their current position.

A small partial eta squared value of .027 was calculated. However, medium effect sizes were calculated between employees employed for less than 5 years in their current position and those employed between 6 and 10 years ($d = 0.354$) as well as between employees working in their current position for less than 5 years and those employees working between 11 and 20 years ($d = .356$).

Table 4.32: ANOVA and post-hoc Scheffé’s test – Number of years working in current position

Dependent variables	F - value	Sig.	Sub-groups	N	Mean	Standard Deviation	Partial eta squared
Identification	1.935	.123	<5 years	471	72.064	13.516	.015
			6-10 years	102	73.431	11.818	
			11-20 years	99	71.950	12.602	
			21+ years	40	76.829	9.633	
Responsibility	.834	.475	<5 years	471	41.420	4.200	.006
			6-10 years	102	40.912	4.315	
			11-20 years	99	40.818	4.687	
			21+ years	40	41.073	3.357	
Autonomy	.775	.508	<5 years	471	27.796	5.095	.007
			6-10 years	102	27.480	5.734	
			11-20 years	99	27.556	5.397	
			21+ years	40	28.878	5.124	
Territoriality	6.638	.000*	<5 years	471	17.214 ^{ab}	5.077	.027
			6-10 years	102	18.971 ^a	4.839	
			11-20 years	99	19.131 ^b	5.665	
			21+ years	40	18.902	5.253	

*p < .05

4.3 CONCLUSION

In this chapter a measure of psychological ownership was developed by following eight steps for scale development as suggested by Hinkin (1998), DeVellis (2003), and Spector (1992).

In the *first step* all the dimensions underlying the concept of psychological ownership were clearly defined and described, namely self-efficacy, self-identity, sense of belonging, accountability, autonomy, responsibility and territoriality.

In the *second step*, by following a deductive approach, items were generated for each one of the dimensions. A total number of 54 items were generated.

In the *third step* of scale development a Likert-type rating scale, with an equal 1-6 agreement format, was chosen.

In the *fourth step* a panel of nine subject matter experts reviewed the initial pool of items to judge each item related to the specific dimension of psychological ownership. The experts commented on the item content, item style, and comprehensiveness of the instrument. After the application of Lawshe's (1975) quasi-quantitative technique a total number of 34 items were retained. However, a total of 11 items were kept despite Lawshe's application. Based on the suggestion of the subject matter experts, an additional 24 items derived from the literature study were added to the measurement to better represent the total content domain. The total number of items to be included in the final instrument to be tested was 69. Preliminary analysis on the pilot study ($n = 46$) revealed satisfactory reliability coefficients for each of the dimensions.

In the *fifth step* the instrument was administered to a non-probability convenience sample ($N = 712$) comprising employed professional, high-skilled and skilled individuals in various organisations in both the private and public sector in South Africa. However, the sample was randomly split into two subsets. A sample of 356 was used for the development of a model and the remaining half was used for validating the results that were attained from the first half (Anderson & Gerbing, 1988).

In the *sixth step* of scale development an exploratory factor analysis (EFA) was performed on the sample comprising 356 individuals. The results of the Bartlett's Test of Sphericity and the KMO measure of sample adequacy confirmed that the data was suitable for factor analysis. The parallel analysis signified four significant factors. Two rounds of exploratory factor analysis were performed on the four-factor model that resulted in a measure comprising 35 items. The four factors of the South African Psychological Ownership Questionnaire (SAPOS) were labelled *Identification*, *Responsibility*, *Autonomy* and *Territoriality* respectively. The four factors retained explained 50.7% of the total variance of the data set.

Results of the second-order factor analysis clearly indicated the existence of two distinctive dimensions, labelled promotive (promotion-orientated) psychological ownership and preventative (prevention-orientated) psychological ownership

respectively. The Tucker's phi coefficients for the Black and White respondents were all acceptable ($>.90$) indicating that the four factors of the SAPOS were equivalent for the two race groups. All four subscales revealed highly satisfactory Cronbach alpha coefficients (0.94; 0.87; 0.87 and 0.78). Results of the descriptive statistics for the four scales of the SAPOS indicated a deviation from the normal distribution with a tendency towards negative skewness and leptokuric distributions.

In the *seventh* step the four-factor model consisting of 35 items of the SAPOS was subjected to confirmatory factor analysis on the other half of the sample ($n = 365$). Mardia's coefficient indicated that the data was non-normally distributed and therefore the robust maximum-likelihood (ML) estimation with the Santorra-Bentler scaled chi-square was employed. Except for the NNFI value of 0.897, the chi-square/df ratio (1:7), CFI (0.904), RMSEA (0.045), and SRMR (0.059) values met the minimum recommended standards, indicating a reasonable fit.

In the *eighth* step the discriminant validity and criterion-related validity of the SAPOS were examined. Examination of the variance extracted estimates confirmed discriminant validity within the model. The relationship between psychological ownership and similar constructs was examined to develop a semantic network. Promotive psychological ownership was positively correlated with affective commitment and job satisfaction and negatively related to turnover intentions. These results provided evidence of criterion-related validity.

To determine the differences between the means scores of the different groups with regard to their biographical characteristics, independent sample *t*-tests and analysis of variance (ANOVA) were conducted. Differences exist between groups with regard to their ethnic grouping, gender, registration with a professional board, age, educational level, sector in which their organisation operates, level in the organisation and number of years working in their current position. However, in most cases medium practical significance was established between the groups. Contrary to general belief, no

significant differences were found between the number of years employees had been working in their current organisation and the dependent variables.

The following chapter will conclude the research and discuss a summary of the study. It will assess the contribution of the study from a theoretical, methodological and practical point of view. The limitations and directions for future research will be discussed.

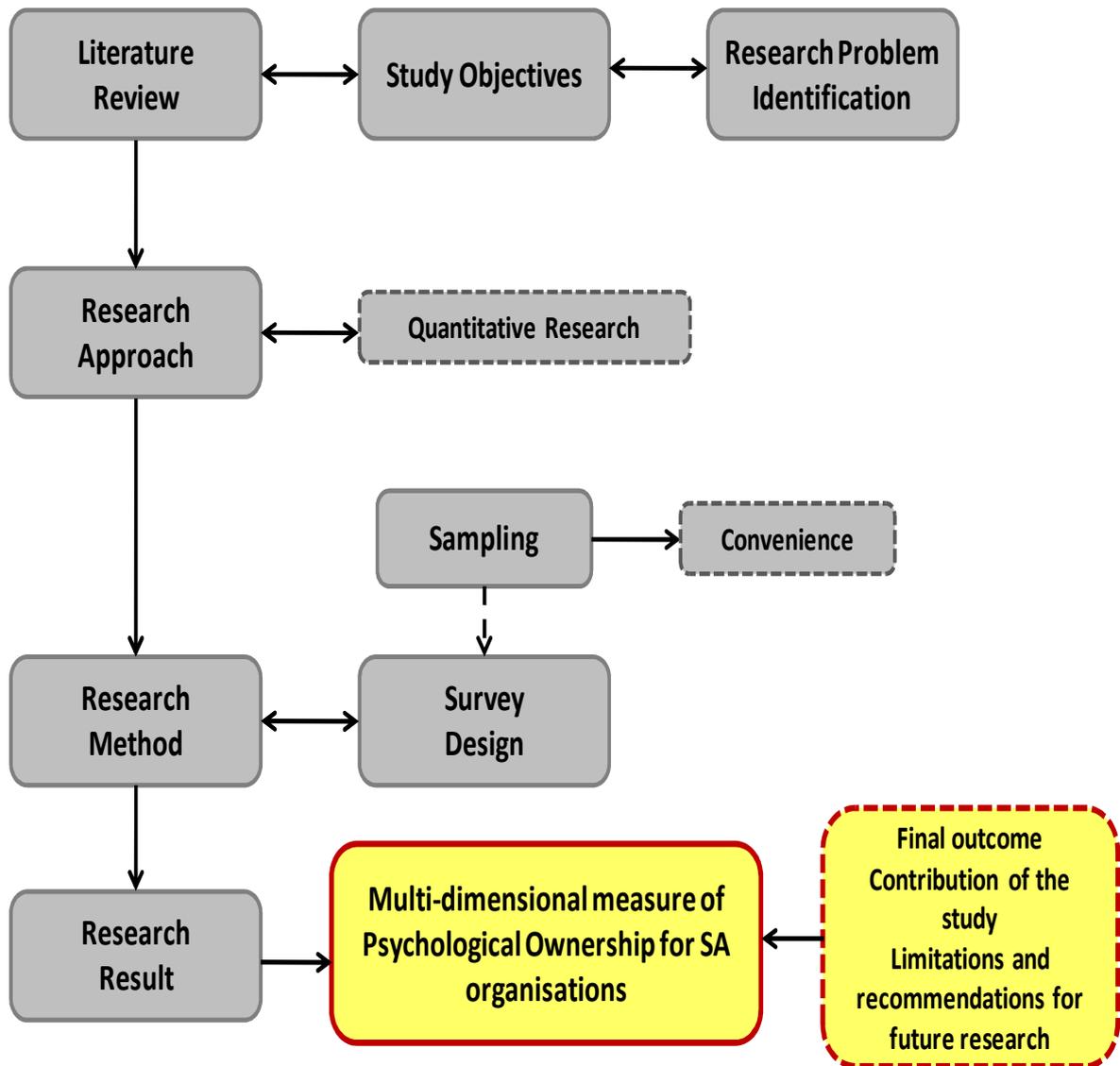
CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Now a whole is that which has a beginning, middle, and end.

- **Aristotle**

In this chapter...



5.1 INTRODUCTION

In this study, following a post-positivist paradigm, the researcher set out to explore and further define the construct of psychological ownership, and to develop and validate an objective, accurate measure of psychological ownership for South African organisations.

Chapter 1 outlined the need to develop and validate a measure of psychological ownership within the South African context. It explained that such a measure might help organisations to influence employees' performance and assist the organisation to retain its best, most talented staff.

Chapter 2 discussed the relevant literature relating to psychological ownership, and contextualised the concept.

Chapter 3 provided the rationale for the research, and explained the research methodology and strategy.

Chapter 4 presented the results and findings of the research. A measure of psychological ownership was developed and was statistically proved to be a reliable and valid instrument for the measurement of psychological ownership within the South African context.

This chapter (**Chapter 5**) will draw some conclusions about the research conducted and will evaluate the achievement of the research objectives. It will discuss the contribution of the research from a theoretical, methodological and practical point of view, indicate the limitations of the research and make suggestions for future research.

5.2 ACHIEVEMENT OF STUDY OBJECTIVES

The **primary objective** of this study was to develop a multi-dimensional measure whereby psychological ownership of employees could be measured in South African

organisations. As indicated, the SAPOS can be used as both a measuring and a diagnostics tool to determine how, more specifically, positive organisational behaviour conceives psychological ownership.

The pursuit of the primary objective of the study was supported by the setting of several content-related **secondary objectives**:

- To determine what is meant by the construct psychological ownership
- To understand why it is necessary to measure psychological ownership
- To identify the factors that influence and define psychological ownership
- To build on the five-dimensional theory-driven instrument of Avey et al. (2009) to suit the South African context
- To outline the research and steps that are necessary to develop an instrument that will be valid and reliable for South African organisations
- To establish the construct equivalence of this measure for different South African culture groups.

The secondary objectives, discussed in detail in Chapter 2, can be summarised as follows:

- **To determine what is meant by the concept of psychological ownership**

Psychological ownership has been defined as “that state where an individual feels as though the target of ownership or a piece of that target is ‘theirs’” (Pierce et al., 2003 p. 86), and according to O’Reilly (2002, p. 10), psychological ownership is “a feeling on the part of employees that they have a responsibility to make decisions that are in the long term interest of the company”. According to Pierce et al. (2001), psychological ownership can be directed at a variety of objects (including an organisation, a job, or a work project) and is regarded as a sense of possession of an object whereby the object becomes an extension of the self, closely linked to the individual’s identity (Pierce et al., 2001). This research therefore determined that psychological ownership provides an

answer to the question: "What do I feel is *mine*?"

- **To understand why it is necessary to measure psychological ownership**

If organisations could measure psychological ownership, they could possibly manage it for performance impact. This would hold great benefits for the organisation. Pierce et al. (1991), supported by Mayhew et al. (2007), believe that psychological ownership will motivate employees to perform at high levels, including the carrying out extra-role behaviours. According to Bernstein cited in Mayhew et al., 2007 p. 483), "[O]wnership instils a sense of pride in employees and acts as a motivator of greater performance". Evidence for this has also been provided by VandeWalle et al. (1995), who found a significant positive relationship between psychological ownership and extra-role behaviours.

Apart from this, psychological ownership has also been associated with other positive behavioural and social-psychological consequences, such as an increase in commitment (O'Driscoll et al., 2006; VandeWalle et al., 1995), greater accountability (VandeWalle et al., 1995), greater job satisfaction (Avey et al., 2009; Buchko, 1993; Mayhew, et al., 2007; Pierce et al., 1991; Vande Walle et al., 1995; Van Dyne & Pierce, 2004) and better organisation-based self-esteem (Avey et al., 2009; VandeWalle et al., 1995; Van Dyne & Pierce, 2004), as well as an intention to stay in the organisation (Avey et al., 2009; Buchko, 1993). In this study psychological ownership was positively related to affective commitment and negatively related to turnover intentions.

It is necessary to measure psychological ownership since it is conceptually distinct from organisational commitment, identification, internalisation, psychological empowerment, and job satisfaction, for it describes a unique aspect of the human experience in organisations. Van Dyne and Pierce (2004) provided discriminant validity evidence for the distinctiveness of psychological ownership items from those employed to measure commitment, identification, internalisation, job satisfaction and involvement. Their observation of the unique ability of psychological ownership to predict worker attitudes

and behaviours over and above the effects of demographic characteristics, affective organisational commitment, organisational identification, internalisation, job involvement and job satisfaction is important because it demonstrates the unique contribution of the psychology of possession to the understanding of the individual-organisation relationship.

It is evident from the extant literature discussed in Chapter 2 that it is a major challenge for organisations to keep their best talented staff – especially considering the vast cost involved when valuable people leave the organisation. As Jamrog (2004) states, employees want to work for more than just a pay check. Therefore, it is the organisation's responsibility to create a work environment that engages and retains employees. Chapter 2 discussed various retention strategies and the role that psychological ownership has to play within each strategy.

The literature review, by highlighting the many benefits that employee psychological ownership holds for the organisation, therefore justified the need for a sound measuring instrument of this phenomenon.

- **To identify the factors that influence and define psychological ownership**

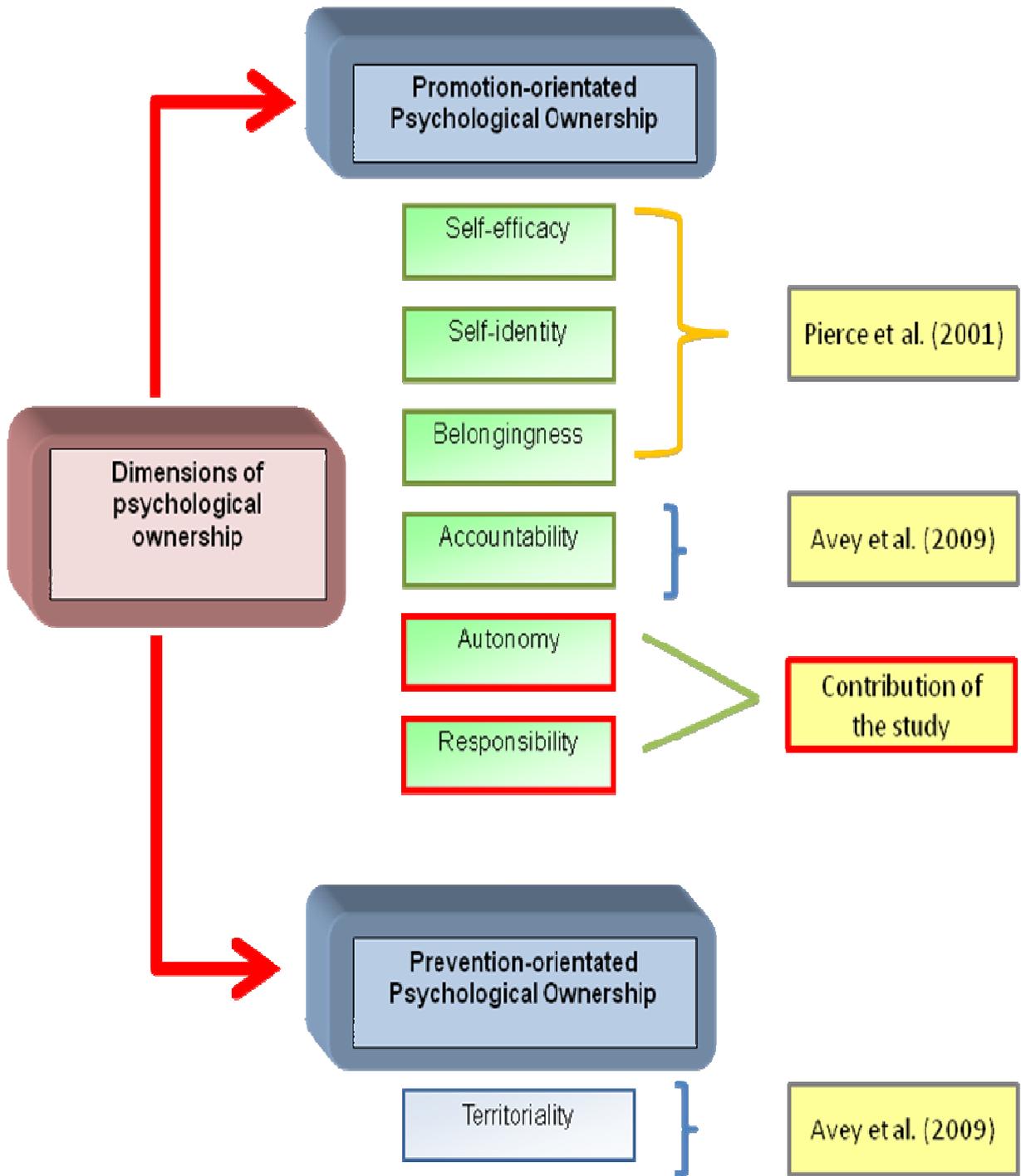
There are several factors that influence the emergence of psychological ownership. The potential for the development of psychological ownership resides in both the target and the individual, and its emergence and manifestation is also strongly influenced by situational resources such as structural and cultural aspects. The process by which psychological emerges is associated with a complex interaction between the “roots”, the “routes”, target factors, and individual factors. Psychological ownership is thus determined by a complex interaction of a number of intra-individual, object-related, and contextual factors. These influential factors have been described in detail in paragraph 2.8.

- **To build on the five-dimensional theory-driven instrument developed by Avey et al. (2009) to fit the South African context**

This research utilised the work by Avey et al. (2009), which was an extension of earlier work by Pierce et al. (2001). Avey et al. developed a five-dimensional measure of psychological ownership, and distinguished between two distinctive forms of psychological ownership: *promotion-orientated* and *prevention-orientated* psychological ownership. The four theory-driven components of self-efficacy; sense of belonging; self-identity; and accountability were identified as dimensions contributing to promotion-orientated psychological ownership, whereas territoriality was identified as a dimension of prevention-orientated psychological ownership. However, according to Avey et al., their measure may not be comprehensive enough to represent psychological ownership. Therefore, they suggested that future theory-building and research might reveal the relationship between psychological ownership and other related concepts.

After a comprehensive review of the literature, this study therefore posited the concepts of *responsibility* and *autonomy* as additional aspects of psychological ownership. Both responsibility and autonomy were conceived as promotion-orientated forms of psychological ownership. The proposed seven-dimensional measure of psychological ownership is displayed in Figure 5.1.

Figure 5.1: Theoretical dimensions of psychological ownership



(Author's own)

- **To outline the research and steps that are necessary to develop an instrument that will be valid and reliable within the South African context**

A summary of the survey research design that was conducted in this study is presented in Table 5.1.

Table 5.1: Survey research design

Description	The survey was quantitative in nature and aimed to present a sample that was representative
Design classification	Empirical research was conducted that collected primary data that was numeric and allowed the researcher medium control.
Key research questions	The research was exploratory and descriptive.
Design types	A cross-sectional survey was conducted because data was collected at one point in time.
Application	The survey was conducted in organisations within the South African context.
Meta-theory	The study was associated with the post-positivist meta-theory and variable analysis.
Conceptualisation	The survey was theory-driven.
Sampling	Non-probability sampling was used.
Mode of observation	Data was collected by means of structured electronic questionnaires and by distributing hard copies.
Analysis	Descriptive and inferential statistics were used.

In this particular study, non-probability sampling was employed, specifically, heterogeneity sampling, which is a type of purposive sampling. The population from which data was obtained was employed professional, highly-skilled and skilled individuals in South African organisations in both the private and public sectors.

The measure of psychological ownership (SAPOS) was developed by following the steps for scale development as suggested by DeVellis (2003), Hinkin (1998), and Spector (1992). These steps were explained in detail in Chapter 4 and summarised in section 4.3.

- **To establish the construct equivalence of this measure for different South African culture groups.**

Construct equivalence of the SAPOS were determined by using exploratory factor analysis and target (Procrustean) rotation. The factor loadings of the different race groups were rotated to a joint common matrix of factor loadings. After target rotation had been carried out, factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's phi). The Tucker's phi coefficients for the Black and White respondents were all acceptable ($>.90$), suggesting that the four factors of the SAPOS were equivalent for the two race groups.

In order to determine the differences between the mean scores of the different groups with regard to their biographical characteristics, independent sample *t*-tests and the analysis of variance (ANOVA) technique were conducted. Differences existed between groups with regard to their ethnic grouping, gender, registration with a professional board, age, educational level, sector in which their organisation operated, level in the organisation and number of years working in their current position. However, in most cases medium practical significance was established between the groups. Contrary to common belief, no significant differences were found to exist between the number of years employees had been working in their current organisation and the dependent variables. This was interesting since, according to Matilla and Ikävalko (2003), ownership is long lasting by nature and it usually (in real life) does not occur as a phenomenon of short duration.

5.3 CONTRIBUTION OF THE STUDY TO THE BODY OF KNOWLEDGE

5.3.1 Contribution from a theoretical perspective

- In terms of the taxonomy of Colquitt and Zapata-Phelan (2007) to estimate a study's theoretical contribution, this study has contributed to a moderate level of theory building by supplementing existing theory. According to Whetten (1989), in

a typical study of this nature a new construct or variable is added to existing theory in order to describe “how” a relationship or process unfolds. A five-dimensional theory-driven measure of psychological ownership was developed by Avey and colleagues (2009). This study expanded on their theoretical model by adding two promotion-focused aspects, namely *Autonomy* and *Responsibility*.

It is evident from the research conducted that the dimensions of *Autonomy* and *Responsibility*, added to the comprehensiveness of the psychological ownership scale developed by Avey and colleagues (2009), will very probably increase employee retention. Assigning employees the ownership of a task and making them realise that they have control gives them a sense of pride and accomplishment that enhances job satisfaction and leads to a sense of responsibility (Pierce et al., 2001). Such measures will therefore increase psychological ownership, since a strong relationship exists between job satisfaction and promotive psychological ownership ($r = .536$) and responsibility and promotive psychological ownership ($r = .614$), as has been established in this particular study and supported by several other researchers (Avey et al., 2009; Coghlan, 1997; Mayhew et al., 2007; Pierce et al., as cited in VandeWalle, 1995; Van Dyne & Pierce, 2004). Employees who feel like owners of the organisation believe that they have the right to influence the direction of the organisation and that they have a “deeper responsibility” than those who do not feel ownership (Rogers & Freundlich, 1998). Various researchers (Brass, 1985; Tanaka & Yamauchi, 2000; Yamauchi et al., 1999; Pierce et al., 2004) found a relationship between autonomy and control, control and psychological ownership, and this study found a strong positive correlation ($r = .757$) between autonomy and promotive psychological ownership.

- This study examined significant relationships between promotive psychological ownership and several other important individual-level outcomes in organisations. Pierce et al. (2001) proposed that psychological ownership would be associated with positive behavioural and socio-psychological consequences.

According to O'Driscoll et al. (2006), psychological ownership should be associated with the type of organisational attachment that Meyer and Allen (1991) refer to as affective commitment. As anticipated, and in accordance with empirical research findings by Avey et al. (2009), Mayhew et al. (2007), and O'Driscoll et al., this study found a positive relationship ($r = .642$) between promotion-orientated psychological ownership and affective commitment.

Van Dyne and Pierce (2004) proposed that feelings of possession of the organisation and thus psychological ownership would enhance satisfaction and provide the context in which job satisfaction is rooted. They further argued that when employees feel possessive toward the organisation (they have influence and control at work, intimate knowledge about the organisation, and feel they have invested themselves in their organisational roles), they should experience high levels of satisfaction, which in turn should influence job satisfaction. This study confirmed a positive correlation ($r = .536$) between promotion-orientated psychological ownership and job satisfaction. Empirical evidence for a positive relationship between psychological ownership and job satisfaction was provided by Avey et al. (2009); Buchko (1993), Mayhew et al. (2007), Pierce et al. (1991), VandeWalle et al. (1995), and Van Dyne and Pierce (2004).

Buchko (1993) states that ownership may influence employee behaviours mainly through its effect on the intention of the employee to remain in the organisation. As expected and confirmed by Avey et al. (2009), turnover intentions were negatively related to promotive psychological ownership ($r = -.376$).

Employee commitment and job satisfaction are likely to be all the more sought-after employee attitudes in tomorrow's organisations, and if turnover intentions are low, the possibility of retaining employees in organisations increases.

- As earlier stated, when constructing psychological evaluation instruments psychologists must always consider the social and cultural diversity present in

socio-economic and political environments such as that in South Africa (Claassen, 1997). In South Africa, measuring instruments are in general adopted directly from overseas (Foxcroft, 1997) and even adaptations of these instruments still tend to ignore the fundamental cultural differences in South Africa. The existence of the newly developed psychological ownership measure named the South African Psychological Ownership Questionnaire (SAPOS) contributes to the body of knowledge by filling the void for such a measurement instrument for South African organisations.

5.3.2 Contribution from a methodological perspective

This study has presented a multidimensional measure evidencing substantial reliability and acceptable construct validity. Construct validity is made up of four components, namely face validity, convergent validity, discriminant validity and nomological validity.

5.3.2.1 Face or content validity

The SAPOS displays face or content validity. This conclusion is based on the following:

- A comprehensive literature study provided the basis for the theoretical constructs that were measured, as well as for the items that were developed in this regard.
- An adequate number of items were included in each of the SAPOS dimensions.
- The items included in the SAPOS for statistical refinement were regarded as relevant, clear and comprehensive by subject matter experts.

5.3.2.2 Convergent validity

Convergent validity was estimated by looking at the factor loadings, the amount of variance explained, and reliability.

- According to Hair et al. (2006), factor loadings of .30 and .40 are minimally acceptable, but should be .50 or higher for practical significance. Except for two factor loadings of .456 and .470, all other factor loadings of the 35-item SAPOS were well above .50, illustrating convergent validity.
- The average percentage of variance extracted among a set of construct items is a summary indicator of convergence (Fornell & Larcker, 1981) and should be .50 or greater to suggest adequate convergent validity. The four factors of the SAPOS, comprising 35 items, explained 57.37% of the total variance, indicating adequate convergent validity.
- Reliability is also an indicator of convergent validity. In this study, Cronbach's alphas for the subscales were highly satisfactory, ranging between .776 and .939 and well above the .70 cut-off (Hair et al., 2006; Cortina, 1993), indicating adequate convergence or internal consistency.

5.3.2.3 Discriminant validity

Examination of the variance-extracted estimates confirmed discriminant validity within the model, because the variance-extracted estimates exceeded the square of the inter-factor correlations when the variance-extracted percentages for any two constructs were compared with the square of the correlation estimate between the two constructs.

5.3.2.4 Nomological and criterion-related validity

- Promotive psychological ownership was positively correlated with affective commitment and job satisfaction, and negatively related to turnover intentions. These results provided evidence of criterion-related validity.
- Further evidence of construct validity indicated differences between groups with regard to their ethnic grouping, gender, registration at a professional board, age, educational level, sector in which their organisation operates, level in the

organisation and number of years working in their current position and the specific dimensions underlying the concept of psychological ownership.

5.3.2.5 Construct equivalence

- Construct equivalence was used to compare the factor structures of the SAPOS for the two race groups. Tucker's phi coefficients for the Black and White groups were acceptable ($>.90$), therefore suggesting that the four factors of the SAPOS were equivalent for these two race groups. However, due to the small representation of the Indian (4.80%) and Coloured (3.40%) respondents construct equivalence could not be determined for all cultural groups. Further research needs to be conducted among a broader spectrum of cultural participants.

We can thus conclude that Human Resource managers and Industrial and organisational psychologists can use this instrument with confidence to gather reliable and valid data about employees' psychological ownership toward their organisation in South Africa. Developing this measure opens the door for more research and understanding surrounding the influence of individual differences on psychological ownership.

5.3.3 Contribution from a practical perspective

- In today's "war for talent", and to assist organisations in retaining their most valuable employees, the SAPOS can be used to understand if and how different people interpret psychological ownership. Specifically, the extent to which employees feel like an owner over a target will be reflected in whether the employees feel that they identify with the organisation, have a sense of responsibility toward the organisation and feel that they have control over their work environment. This study also provided support for the view that line managers and

human resource practitioners should be aware that different demographic groups have different needs that can influence their psychological ownership.

- The SAPOS provides Human Resource managers and Industrial and organisational psychologists with the opportunity to look at individual differences more closely. The instrument would be particularly valuable for understanding how individual differences influence employees' psychological ownership, specifically in a multi-cultural society such as South Africa. For example, individuals as such face increasingly complex challenges in constructing and maintaining their identities. In a world where employees are prone to working longer hours, under inflexible arrangements, within several different organisations, and in multiple jobs or careers, it is more and more challenging for them to create and maintain a positive identity (Robberts & Dutton, 2009). A further challenge is for the individual to adapt to the multi-cultural organisation which has resulted from the implementation of affirmative action as a compensatory measure for previous deprivation in South Africa (Watkins, 1995). Multi-cultural work teams raise questions regarding similarities and differences between the meanings that different groups give to psychological ownership; therefore further studies should be conducted to explore how different cultures interpret this identity.
- The instrument could serve as a diagnostic tool that will allow Human Resource professionals and managers to determine employees' psychological ownership toward their organisation and specifically focus on those dimensional areas that are weak and in need of attention. Understanding an individual's psychological ownership will provide insight into the degree to which an organisation will retain their talented staff.
- The results of this study also suggest that the unique emphasis of psychological ownership on possession might increase managers' understanding of and ability to predict employee commitment, satisfaction and intention to stay in the organisation.

5.4 LIMITATIONS OF THE STUDY

- Hair et al. (2006) recommend that if the sample size is large enough, the sample could randomly be split into two subsets, as was done in this study. However, Hinkin (1988) suggests that it is necessary to use several independent samples in scale development, due to the fact that results of many multivariate techniques can be sample-specific. It is therefore suggested that although the sample was collected from professional, highly-skilled and skilled employees in various South African organisations in both the private and public sector, the instrument should be tested on another independent sample.
- Although the sample size was of ample size to conduct a factor analysis, this does not necessarily mean that the sample was representative of the general population. The sample comprised 418 White (60%) and 284 Black people (40%), which included 24 Coloured and 34 Asian people. Further research needs to be conducted among a broader spectrum of cultural participants, as this could have an influence on the manner in which questions have been interpreted.
- The sample was collected from professional, highly-skilled and skilled employees in various South African organisations in both the private and public sector and therefore the SAPOS cannot necessarily be generalised to other countries than that reflected in the sample population.
- A cross-sectional design was used and therefore it was not possible to control for confounding variables.
- Common method bias Self-reports were used, which limit the responses of the participants to the items used in the scale and do not capture the richness and variety of the responses that are possible.

5.5 SUGGESTIONS FOR FUTURE RESEARCH

- Although the findings were encouraging, it should be kept in mind that scale validation is an ongoing process. Continued refinement of the SAPOS is thus suggested. Modifications could include the addition or deletion of items as discussed hereunder.

According to Hair et al. (2006), there is no theoretical maximum that caps the number of items per factor. However, they warn against the use of scales that contain more than 12 items, since this makes the analysis more complex and may often lead to problems in providing evidence of uni-dimensionality. Therefore the researcher would suggest that the *Identification* dimension, currently consisting of 16 items, be revised. Results of the exploratory factor analysis revealed that the South African sample interpreted the items originally defined as *self-identity* and *sense of belongingness* as one concept, which was labelled *Identification*. The researcher decided to retain these items as part of one dimension because these constructs seem to be very similar and because, according to Lee (as cited in Edwards, 2005, p. 210), supported by Ashforth and Mael (1989, p. 21), identification involves a “sense of belongingness” and “the perception of oneness or belongingness”.

However, according to Avey et al. (2009), although the underlying principle of ownership may be manifested in both self-identity and belongingness, they should remain distinct yet related constructs. Therefore the current researcher suggests continued refinement of the so-called *Identification* dimension.

Self-efficacy items should be reviewed, because this concept formed a central part of the psychological ownership concept and should be looked at again. Although ten items were written to capture the dimension of self-efficacy, none of these items survived the stages of scale development. The items either cross-loaded or loaded on dimensions which were theoretically inconsistent with the factor.

Self-efficacy is concerned with specific judgement of one's capability and competence (Sternberg, 2001), and it seems that the sample group did not interpret the questions as such, but rather interpreted some of the questions as part of their responsibility. According to Bandura (1995, p. 5), "a host of factors, including personal, social, and situational ones, affect how efficacy-relevant experiences are interpreted". Therefore people's presumptions about their abilities; the alleged complexity of the tasks; the amount of effort devoted; their physical and emotional state at the time; the amount of outer support they receive; and the situational conditions under which they perform will influence the extent to which performance accomplishments will change perceived efficacy.

According to Urban (2006, p. 3), cultural embeddedness has an effect on "the way in which efficacy beliefs are developed, the purpose to which they are put, and the social structure arrangements through which they are best exercised". Different sources of information influence self-efficacy. These sources of information are relatively persuasive, depending on a person's cultural values (Earley, 1994). In his study, Urban (2006) found differences in the mean values between Indian, Black and White respondents with regard to their general self-efficacy. The levels of self-efficacy of Indians are at the highest level, followed by Blacks and then Whites at the lowest level. Therefore, a cultural contingency approach is suggested for further research on self-efficacy.

- The study focused on the positive aspects of psychological ownership although, according to prior research (Pierce et al., 2001; Robinson & Bennett, 1995), a "dark side" of psychological ownership does exist. In this study, as in the study conducted by Avey et al. (2009), a negative side of psychological ownership, namely *Territoriality*, was acknowledged as a preventative form of psychological ownership. The role of more destructive forms of psychological ownership needs to be further explored. For example, South African organisations have to face the challenge of integrating and managing a very diverse workforce (Vorster, Olckers, Buys & Schaap, 2005), which will lead to organisational change. To ensure the productivity

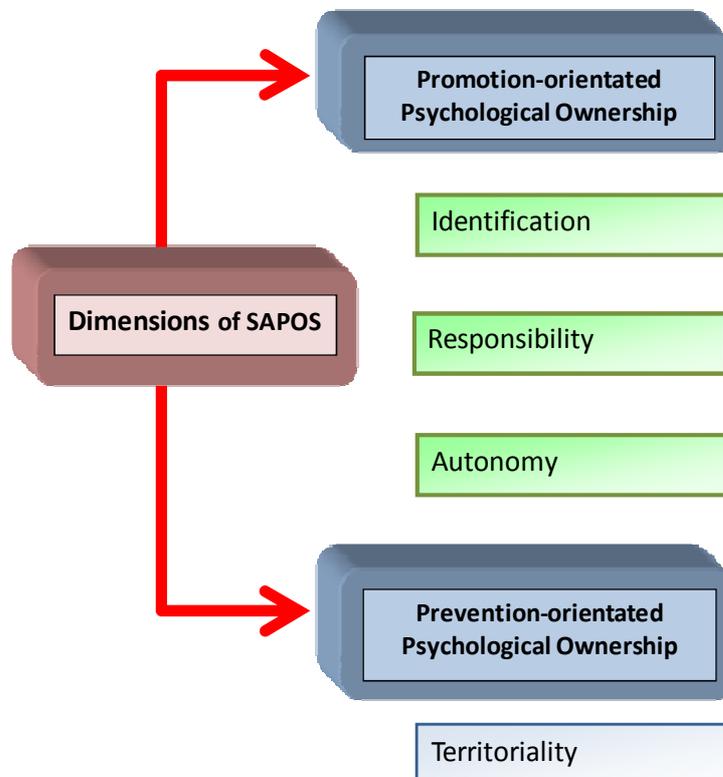
and effectiveness of organisations, “it is necessary to get from a heterogeneous work force the same productivity, commitment, quality and profit which the organisation received from the old homogeneous work force without artificial programmes, standards, or barriers” (Roosevelt, 1990, p. 109). Dirks et al. (1996), in their psychological theory of change, argue that psychological ownership could provide insight into the reasons why and the conditions under which individuals either promote and resist change. It is important to take note that the state of psychological ownership, while potentially latent within each individual, is not equally strong across individuals, targets, and situations, since it is determined by a complex interaction of many intra-individual, object-related and contextual factors (Pierce et al., 2003).

Future research is needed to uncover when psychological ownership leads to positive consequences and when the consequences are more likely to be negative. As discussed in the literature study, the cultural aspects of a social context will have a significant influence on the phenomenon of psychological ownership (Pierce et al., 2003). This is in the first place because, according to Erez and Early (1993), a tight connection exists between psychological ownership and the concept of self. The concept of self is consequently in part socially imposed and influenced by culture. Secondly, psychological ownership is partially “learned” through socialisation practices, which again are culturally determined.

Culture, which is reflected in customs, norms, traditions and beliefs in society, shapes the individual’s self-concept and values with regard to control, self-expression, self-identity and ownership. Therefore, as suggested by Pierce et al. (2003), culture will influence all the elements of the psychological framework: the construct of self, the motives, the paths, targets, individuals, and the process. A qualitative dimension to the research might be valuable and could enhance knowledge on the key issues that may influence psychological ownership in a diverse multi-cultural environment.

In this particular study the fact that the sample comprised 40% black and 60% white participants definitely had an influence on how psychological ownership was interpreted. Although the initial theoretical model of psychological ownership comprised six promotive psychological ownership dimensions, namely self-identity, self-efficacy, sense of belonging, accountability, responsibility and autonomy; the results of the South African sample only show three promotive psychological ownership dimensions, namely identity, responsibility and autonomy, as displayed in Figure 5.2. It might be that the White respondents that account for 60% of the sample do have the perception that due to EE and BEE they are losing control over their environment as well as over people and that they've lost their right to have a voice in the workplace due to the implementation of EE and BEE. However, this was not tested and needed to be further investigated.

Figure 5.2: Dimensions of the South African Psychological Ownership Questionnaire (SAPOS)



- According to Cooper and Denner (1998, p. 563), to attempt to integrate the concept of culture with psychological theories is an “abstract, disputed, and inherently irresolvable process”, yet doing so is critical to theory building and understanding of multi-cultural societies.
- In this study strong positive relationships were found between promotion-orientated psychological ownership and affective employee commitment and job satisfaction, and a negative relationship between promotion-orientated psychological ownership and turnover intentions. Future research could look at the relationship between psychological ownership and other workplace attitudes.
- Psychological ownership is a complex phenomenon. Further studies should investigate the role that additional antecedents such as locus of control and individualism may play in explaining the underlying motives of psychological ownership.

5.6. FINAL CONCLUSION

The key contribution of this study has been the development and testing of a multi-dimensional measure of psychological ownership that can be used in South African organisations. The results provide psychometric support for this multidimensional measure of psychological ownership (SAPOS). Furthermore, the results show that psychological ownership does make a difference; these differences are reflected in employee social-psychological states (organisation commitment and satisfaction) and in employee behaviour (intention to stay in the organisation). The instrument indicated that differences exist between groups with regard to their ethnic grouping, gender, registration with a professional board, age, educational level, sector in which their organisation operates, level in the organisation and number of years working in their current position.

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If a sense of psychological ownership for the organisation can be created among employees, especially those in skilled and professional positions, by addressing the factors as measured by the SAPOS, organisations could become enhanced workplaces, ensuring sustainable performance and staff retention, which are especially valuable in uncertain economic times.

The researcher would like to conclude with the following quotation by Rudmin (1994):

“Mine” is a small world...It is deceptive in its power and importance...It controls our behavior, but we rarely notice, as we move about our world restricting ourselves to narrow walkways and to those places for which we have keys .

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ANNEXURE A – EXPERT REVIEW

University of Pretoria – C Olckers (2011)



Faculty of Economic and Management
Sciences

12 October 2009

Department of Human Resource Management

A MULTI-DIMENSIONAL MEASURE OF PSYCHOLOGICAL OWNERSHIP FOR SOUTH AFRICAN ORGANISATIONS

Relevance Assessment questionnaire Psychological Ownership Dimensions and Elements

Dear Participant

I am developing an instrument to measure psychological ownership in South African organisations. Psychological ownership is defined as '**A state in which individuals feel as though the target of ownership (material or immaterial in nature) or piece of it is 'theirs' (i.e. 'It is MINE!')**'.

You are asked to serve as a content expert because of your experience and expertise in applied psychology or related fields. Your participation and contribution in the instrument review process is valuable to this study, which is part of a PhD in Human Resource Management in the Department of Human Resource Management at the University of Pretoria. Your voluntary participation and time spend are highly appreciated.

The instrument consists of items related to different dimensions of psychological ownership. Psychological ownership will be assessed with a seven point rating scale, with 1 representing *Strongly Disagree* and 5 representing *Strongly Agree*, for each item. The different dimensions of psychological ownership that will be assessed are as follow:

- A. *Self-efficacy*
- B. *Self-identity*
- C. *Sense of belongingness*
- D. *Accountability*
- E. *Territoriality*
- F. *Autonomy*
- G. *Responsibility*

On the attached form you are asked to provide some biographic information on yourself as expert and to judge the *relevance* and *clarity* of each item related to the specific dimension of psychological ownership. You will also be asked to comment on the *comprehensiveness* of the entire instrument and addition or deletion of items.

Please complete the questionnaire and send it **back by 7 December 2009**. Thank you very much for your time and effort.

Chantal Olckers
E-mail: chantal.olckers@up.ac.za
Tel: 083 284 0269 / 012 420 3435

I provide consent by completing this questionnaire: Yes (tick)

Relevance questionnaire on psychological ownership dimensions and associated descriptive elements

Please complete the following questionnaire comprising of 5 pages. There is no right or wrong answer. Judge **each item** honestly, as you perceive it, based on your experience and expertise. Indicate with an **X** in the relevant block '*not essential*' or '*essential*' to the specific dimension of psychological ownership. Indicate with an **X** in the relevant block if the '*item is clear*' or if the '*item is unclear*'. You should have marked 2 **X** at each question.

A. Relevance

DIMENSIONS and descriptive elements of psychological ownership	Indicate the relevance for the dimension A-G and each element. Please do not omit any.			
What is the relevance of the following dimensions and elements with regard to contributing towards psychological ownership?	Not essential	Essential	Item is clear	Item is unclear
A. Self-efficacy Def: The individual's judgment about their capability to perform across a variety of situations.				
1. I am confident that I can make suggestions about ways to improve the working of my work unit.				
2. I have the confidence to suggest doing things differently in my work unit.				
3. I am confident that I can design new procedures for my work unit/area.				
4. I am confident that I am able to analyse a long-term problem to find a solution.				
5. I am confident that when I make plans that will benefit the organisation, I can make them work.				
6. I am confident that I have the ability to act within the responsibilities of my job.				
7. I am confident that I can meet my performance expectations that were agreed with me upfront.				



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B. Self-identity Def: A personal cognitive connection between an individual and an object (e.g. organisation). The individual's perception of oneness with the target (e.g. the organisation).				
8. I personally experience the successes and failures of the organisation as my successes and failures.				
9. I feel that by identifying with the characteristics of the organisation it helps me develop a sense of who I am.				
10. I feel the need to be seen as a member of the organisation.				
11. It is important to me that others think highly of my organisation.				
12. My personal values and that of the organisation are aligned and cared for.				
13. It is important to me to defend my organisation to outsiders when it is criticised.				
14. It is important to me to support my organisation's goals and policies.				
15. I am proud to say to every person I meet that this is my organisation.				
C. Sense of belongingness Def: The extent to which an individual feels 'at home' in the work place.				
16. I think about this organisation as MY organisation.				
17. I perceive myself to be psychologically intertwined with the fate of the organisation.				
18. I feel that I belong in this organisation.				
19. I feel 'at home' in this organisation.				
20. This organisation cares for me as a person and looks after me.				
21. There is a strong relationship between me and my team .				
22. I give and receive affection from my colleagues and this bonds us with the organisation.				
D. Accountability Def: The implicit or explicit expectation of the perceived right to hold others and oneself accountable for influences on one's target of ownership.				
23. I will hold management accountable for their decisions.				

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24.	I have the right to hold myself and others accountable for organisational performance.				
25.	It is important to me to have the right to information about the organisation, such as performance and projection and about my personal and team performance.				
26.	In my organisation we are allowed to make mistakes and own up to it.				
27.	In my organisation I accept responsibility and take the consequences of these decisions.				
28.	I work in an open environment where everyone is allowed to challenge a decision or strategy as long as it is done constructively.				
E.	Territoriality Def: An individual's behavioural expression of his/her feelings of ownership toward a physical or social object.				
29.	It is important to me that my organisation allows me to personalise my work space.				
30.	It is important to me to defend my work space from others in the organisation.				
31.	It is important to me to have a work space or work area of my own.				
32.	It is important to me to protect my belongings from others in the organisation.				
33.	It is important to me that people I work with do not invade my work space.				
34.	It is important to me to protect my ideas from being used by others in the organisation.				
35.	It is important to me to discourage others from attempting to enter my work space.				
36.	It is important to me to know and have access to all policies and procedures of the organisation.				
37.	Every person in our organisation knows the boundary of acceptable and unacceptable behaviour.				
F.	Autonomy Def: Refers to the regulation of the self and is the extent to which a person needs or is eager to experience individual initiative in performing a job.				



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38.	My job gives me the freedom to schedule my work and determine how it is done.				
39.	My job allows me to have control over my working environment.				
40.	My job allows me to participate in making decisions that affect my task domain.				
41.	My job allows me the opportunity for independent thought and action.				
42.	My job allows me to do my work independently.				
43.	My job allows me to use my personal initiative and judgment in carrying out my work.				
44.	My job gives me the freedom to do pretty much what I want in my job.				
45.	My job gives me the freedom to act morally for the purpose of doing good for my organisation independently of incentives.				
46.	My job allows me to apply informed consent to my activities that I deem necessary to action my task domain.				
47.	My autonomy to act is restricted by the policies and procedures of the organisation but does not inhibit my ability to deliver the tasks required.				
G.	Responsibility Def: The state of cognitive and emotional acceptance of responsibility.				
48.	I accept full responsibility for my actions within the organisation.				
49.	I accept ownership for the results of my decisions and actions.				
50.	I strive to contribute as much as possible to the effectiveness of the organisation.				
51.	I feel personally responsible for the work I do in my organisation.				
52.	I feel I should personally take the credit or blame for the results of my work in the organisation.				
53.	The buck stops with me and I ensure that the task / complaint is resolved successfully every time.				
54.	If I cannot deliver on a task for whatever reason, I maintain the responsibility to find an alternative resource or solution.				

B. Clarity

Psychological ownership items should be well written, distinct, and at an appropriate reading level for professional, highly-skilled and skilled individuals employed in various types of organisations (both the private and public sector), from the diverse South African population. If you have indicated that items are not clear, do you have any suggestions for clarifying items:

.....

.....

.....

.....

C. Comprehensiveness

Do you think that all the dimensions of the desired content domain of psychological ownership have been included in the instrument? Please provide any suggestions for the deletion or inclusion of items.

.....

.....

.....

.....

D. Biographical information

(Please complete the following information that represents you as indicated. This information is important in order to compile a diverse panel of experts.)

1. **Age (years)**

2. **Work experience in applied psychology or related field:**years

3. **Gender (indicate with x)**

	Male
	Female

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4. Ethnic group (indicate with x)

<input type="checkbox"/>	Black
<input type="checkbox"/>	Coloured
<input type="checkbox"/>	Indian
<input type="checkbox"/>	White

5. Highest qualification (indicate with x and specify field of study)

<input type="checkbox"/>	Bachelor's degree
<input type="checkbox"/>	Honour's degree
<input type="checkbox"/>	Master's degree
<input type="checkbox"/>	Doctoral degree

6. Economic sector (indicate with x and specify Industry)

<input type="checkbox"/>	Primary sector
<input type="checkbox"/>	Secondary sector
<input type="checkbox"/>	Tertiary sector
<input type="checkbox"/>	Government services
<input type="checkbox"/>	Other

Thank you for completing this questionnaire.

Please e-mail to: chantal.olckers@up.ac.za

or

Send to: Chantal Olckers, Department of Human Resource Management, Room 3-95, Economic and Managements Sciences Building, University of Pretoria, 0001

University of Pretoria – C Olckers (2011)

ANNEXURE B – QUESTIONNAIRE

University of Pretoria – C Olckers (2011)

Faculty of Economic and Management
Sciences
12 March 2010

**Informed consent for participation in an academic
research study**

Department of Human Resource Management

**A MULTI-DIMENSIONAL MEASURE OF PSYCHOLOGICAL OWNERSHIP FOR SOUTH
AFRICAN ORGANISATIONS**

Dear Respondent

You are invited to participate in an academic research study conducted by Chantal Olckers, a Doctoral student from the Department Human Resource Management at the University of Pretoria.

Purpose of the study: To develop an instrument to measure the psychological ownership of employees in South African organisations.

Please note the following:

- This study involves an anonymous survey. Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please complete the attached questionnaire ALL questions should please be answered in a visible and honest manner. The questionnaire consists out of 8 pages. This should not take more than 15 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal.
- Please tick the following box to indicate that you give your consent to participate in the study on a voluntary basis.

Research conducted by:

Ms. C Olckers (89071451)
Cell: 083 284 0269
E-mail: chantal.olckers@up.ac.za

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Please rate each statement by indicating your response with a **X**. There is no right or wrong answers.

This part of the questionnaire consists of items related to different dimensions of psychological ownership, being assessed on a six point rating scale, ranging from 1 = Strongly disagree to 6 = Strongly agree.

	STATEMENTS	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	I am confident that I can make improvements to my work environment.	1	2	3	4	5	6
2	I feel I need to defend my work environment from others in the organisation.	1	2	3	4	5	6
3	It is important to me that others think highly of my organisation.	1	2	3	4	5	6
4	I have the right to access information in my organisation.	1	2	3	4	5	6
5	I am confident that in my capacity I can design new procedures.	1	2	3	4	5	6
6	I feel the need to defend my organisation to outsiders when it is criticised.	1	2	3	4	5	6
7	I know the boundaries between acceptable and unacceptable behaviour.	1	2	3	4	5	6
8	I acknowledge my mistakes in the organisation.	1	2	3	4	5	6
9	I feel the need to support my organisation's goals and policies.	1	2	3	4	5	6
10	I am confident that I am able to analyse a problem to find a sustainable solution.	1	2	3	4	5	6
11	I have the freedom to schedule my work and determine how it is done.	1	2	3	4	5	6
12	I am proud to say that "this is my organisation" to people that I meet.	1	2	3	4	5	6
13	I have control over my working environment.	1	2	3	4	5	6
14	I feel the need to have a work space or work area of my own.	1	2	3	4	5	6
15	I am confident that when I make plans that will benefit the organisation, I can make them work.	1	2	3	4	5	6
16	I accept the consequences of my decisions in the organisation.	1	2	3	4	5	6

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	STATEMENTS	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
17	I am allowed to participate in making decisions that affect my task domain.	1	2	3	4	5	6
18	I act to the benefit of my organisation.	1	2	3	4	5	6
19	I have the opportunity for independent thought and action.	1	2	3	4	5	6
20	I am confident in my ability to execute the required tasks of my job.	1	2	3	4	5	6
21	I feel part of the larger organisational entity.	1	2	3	4	5	6
22	I feel the need to protect my belongings from others in the organisation.	1	2	3	4	5	6
23	I am allowed to do my work independently.	1	2	3	4	5	6
24	I feel a strong linkage between me and my organisation.	1	2	3	4	5	6
25	I am confident that I can meet my performance expectations that were agreed with me upfront.	1	2	3	4	5	6
26	I feel that people I work with should not invade my work environment.	1	2	3	4	5	6
27	I feel as if this organisation is “MY” organisation.	1	2	3	4	5	6
28	I take responsibility for my decisions in the organisation.	1	2	3	4	5	6
29	I am allowed to use my personal initiative and judgment in carrying out my work.	1	2	3	4	5	6
30	I am confident to negotiate annual targets / strategic objectives for my work environment.	1	2	3	4	5	6
31	I feel that I belong in this organisation.	1	2	3	4	5	6
32	I have the freedom to do pretty much what I want in my job.	1	2	3	4	5	6
33	I would take action against inappropriate behavior in my organisation.	1	2	3	4	5	6
34	I feel ‘at home’ in this organisation.	1	2	3	4	5	6
35	I feel the need to protect my intellectual property from being used by others in the organisation.	1	2	3	4	5	6
36	I am confident that I can implement policies and procedures in my work environment.	1	2	3	4	5	6
37	I feel that this organisation cares for me as a person and looks after me.	1	2	3	4	5	6
38	I have almost complete responsibility for deciding how and when the work is done.	1	2	3	4	5	6

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	STATEMENTS	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
39	I feel the need to discourage others to invade my work space.	1	2	3	4	5	6
40	I feel totally comfortable being in the organisation.	1	2	3	4	5	6
41	I can uphold myself when representing my organisation.	1	2	3	4	5	6
42	I have considerable opportunity for independence and freedom in how I do my work.	1	2	3	4	5	6
43	I feel that this organisation is part of me.	1	2	3	4	5	6
44	My organisation does not inhibit my ability to deliver the tasks required.	1	2	3	4	5	6
45	I would challenge a decision or strategy being made in the organisation.	1	2	3	4	5	6
46	I am confident to act as an expert in my field for my work environment.	1	2	3	4	5	6
47	I accept full responsibility for my actions within the organisation.	1	2	3	4	5	6
48	I feel I should take the consequences of my work in the organisation.	1	2	3	4	5	6
49	I feel I have a considerable emotional investment in my organisation.	1	2	3	4	5	6
50	I would protect, care and nurture all elements of my organisation.	1	2	3	4	5	6
51	I personally experience the successes and failures of the organisation as my successes and failures.	1	2	3	4	5	6
52	I feel I have a strong bond with the organisation.	1	2	3	4	5	6
53	I would report inappropriate behavior in my organisation.	1	2	3	4	5	6
54	I accept ownership for the results of my decisions and actions.	1	2	3	4	5	6
55	I feel secure in this organisation.	1	2	3	4	5	6
56	I feel that I have common interests with my organisation that is stronger than our differences.	1	2	3	4	5	6
57	I would invest time and energy beyond my job in the organisation.	1	2	3	4	5	6
58	I hold management in my organisation accountable for their decisions.	1	2	3	4	5	6
59	If the buck stops with me, I ensure that the task / complaint is resolved successfully every time.	1	2	3	4	5	6
60	I proactively enhance both tangible and intangible targets of my organisation.	1	2	3	4	5	6

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	STATEMENTS	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
61	I feel the need to be seen as a member of the organisation.	1	2	3	4	5	6
62	If I cannot deliver on a task for whatever reason, I maintain the responsibility to find an alternative resource or solution.	1	2	3	4	5	6
63	I feel personally responsible for the work I do in my organisation.	1	2	3	4	5	6
64	I hold others accountable for organisational performance.	1	2	3	4	5	6
65	I will maintain the identity (brand) of my organisation.	1	2	3	4	5	6
66	I feel that my personal values and that of the organisation are aligned.	1	2	3	4	5	6
67	I hold myself accountable for organisational performance.	1	2	3	4	5	6
68	I feel the need to endorse the policies and procedures of my organisation.	1	2	3	4	5	6
69	I am allowed to decorate, rearrange and personalise my physical work environment.	1	2	3	4	5	6

The following 8 items are measured on a seven-point scale, ranging from 1 = strongly disagree to 7 = strongly agree.

	STATEMENTS	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
70	I think that I could easily become as attached to another organisation as I am to this one.	1	2	3	4	5	6	7
71	I do not feel like “part of the family” at my organisation.	1	2	3	4	5	6	7
72	I do not feel “emotionally attached” to this organisation.	1	2	3	4	5	6	7
73	This organisation has a great deal of personal meaning for me.	1	2	3	4	5	6	7
74	I do not feel a strong sense of belonging to my organisation.	1	2	3	4	5	6	7
75	I really feel as if this organisation’s problems are my own.	1	2	3	4	5	6	7

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76	I enjoy discussing my organisation with people outside it.	1	2	3	4	5	6	7
77	I would be very happy to spend the rest of my career with this organisation.	1	2	3	4	5	6	7

The following three items are measured on a six-point rating scale. Please note that the scale differs with each question.

	STATEMENTS						
78	Thought about quitting my job in this organisation cross my mind.	1 Never	2 Rarely	3 Sometimes	4 Often	5 Very often	6 All the time
79	I plan to look for a new job within the next 12 months.	1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree
80	How likely is it that, over the next year, you will be actively looking for a new job outside of this organisation?	1 Very unlikely	2 Moderately unlikely	3 Somewhat unlikely	4 Some-what likely	5 Moderately likely	6 Very likely

The following three items are measured on a seven-point scale, ranging from 1 = strongly disagree to 7 = strongly agree.

	STATEMENTS	Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
81	Generally speaking, I am very satisfied with this job.	1	2	3	4	5	6	7
82	I seldom think of quitting this job.	1	2	3	4	5	6	7
83	I am generally satisfied with the kind of work I do in this job.	1	2	3	4	5	6	7

Biographical information

Please complete the biographical information hereunder.

84. Please indicate your age: _____ years

85. Please indicate your gender

1	Male
2	Female

86. Which ethnic group do you belong to?

1	Black
2	Coloured
3	Indian
4	White

87. Please indicate your highest level of education /qualification

1	Grade 12
2	Diploma
3	Bachelor's degree
4	Honor's degree
5	Master's degree
6	Doctoral degree

88. Indicate the sector in which your organisation operates

1	Financial services
2	Chemical / Petroleum
3	Information Technology
4	Education / Teaching
5	Government
6	Retail
7	Telecommunications
8	Professional Services
9	Other, please specify.....

89. Indicate at what level you operate in your organization

1	Operational level
2	Junior Management level
3	Middle Management level
4	Senior Management level
5	Executive level

90. How many years have you been working at your current organisation?

_____ years

91. How many years have you been working in your current job?

_____ years

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92. Are you registered at a Professional Body?

1	Yes (please specify).....
2	No

Thank you for your valuable time and contribution!