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CAREER ANCHORS OF ENGINEERS IN MANAGERIAL POSITIONS IN THE SOUTH AFRICAN POWER UTILITY

by

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Submitted in partial fulfilment of the requirements for the degree

MAGISTER COMMERCII

INDUSTRIAL PSYCHOLOGY

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

SUPERVISOR: PROF. K. J. STANZ

APRIL 2012

ABSTRACT

Topic: Career Anchors of Engineers in Managerial Positions in the South African Power Utility

Key terms: Career; Career Anchors; Career Orientations; Engineer

Due to the introduction of the Employment Equity Act of 1998, the structure of management in South African companies has dramatically changed. This emphasizes the need for managerial generalists, especially now where we are faced with a competitive business environment and rapid changes in technology. Edgar Schein (1978) in the (*Academy of Management Journal* 1996) maintains that these changes have resulted in people forming what he called “internal careers”. He described an ““internal career” as a subjective sense of where one is going in one’s working life. He continued to describe the external career as something that is more about formal stages and roles, well defined by organisational policies and societal concepts regarding what an individual can expect in an occupational structure”. The complexities in the occupational environment have implications for career development, and it has obviously become crucial that people form what Edgar Schein regarded a self-concept, to be a ““career anchor” that holds a person’s internal career together even if they experience intense changes in their external career”. An individual’s “career anchor”, as defined by Schein (1978; 1985; 1990; 1993), comprises of a person’s 1) “self-perceived aptitudes and capacities; 2) basic values; and most important, 3) the evolved sense of motives and desires as they apply to the career”. Using the instrument called the Career Orientations Inventory (COI) developed by Edgar Schein, the objective of this study to systematically examine the primary career anchors of a sample of engineers in management positions at one of the utilities in South Africa. This is a quantitative study which uses a statistical analysis to substantiate engineers’ motivation for pursuing managerial positions instead of remaining specialists. The results from this study will have a major contribution in the field of Psychology and in particular, Career Psychology.

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DECLARATION OF ORIGINAL AUTHORSHIP

I, *Ntombizodwa Sithole*, declare that *"Career Anchors of Engineers in Managerial Positions in the South African Power Utility"* is my own work. All the resources used for this study are cited and referred to in the reference list by means of a comprehensive referencing system. I declare that the content of this thesis has never before been used for any qualification at any institute.

_____ _____

NTOMBIZODWA SITHOLE **DATE**

ACKNOWLEDGEMENTS

I would like to express my appreciation to the following people for their support and assistance in the completion of this dissertation:

- Jehovah God, who made it possible for me to do this research. Without good health and his protection I would not have been able to do this dissertation.

- My two daughters for their patience and understanding during my years of studying.

- Professor Karel Stanz for believing in me that I could do this research.

- Dr Marzanne de Klerk for her patience and relentless effort to coach and support me.

- My current manager Andre Venter and previous manager Roger Cormack for their continuous support and encouragement.

- My Unisa lecturer Mr Kgope Moalosi for his guidance and making things simple for me.

- Celeste Combrinck, my statistician from Impact Research International for her simplicity.

- Francien Smuts, my language editor for her passion in her work and her great sense of urgency.

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 BACKGROUND TO THE STUDY

Research about the role of career anchors in making career decisions dates back to the 1970s. In studying careers longitudinally, Schein (1978; 1985) found that during career development most individuals form a strong self-concept which he called a 'career anchor'. Schein discovered that a career anchor keeps an individual internal career intact even when they experience major changes in their external career. An *internal career* is a subjective sense about where one is going in his work life. An 'external career' is more about formal stages and roles as defined by the organisation in respect of what an individual can expect in the occupational structure (Schein, 1990).

Several studies on career perceptions were conducted in western countries with minimal studies conducted in non-western societies. Nonetheless findings from both national (Coetzee, 2007; 2008; Coetzee and Bergh, 2008; Coetzee and Schreuder, 2002; 2007; Coetzee, Schreuder and Tladinyane, 2007; Coetzee, Schreuder and Bergh, 2008) and international studies (De Long, 1982; Slabbert, 1987; Feldman and Bolino, 2000; Marshall and Bonner, 2003; Russell, Morris, Stocks and Graves, 2003) emphasize the importance of career anchors in making career decisions. These studies have revealed that not one but several career anchors form an individual's preference for certain occupations or careers.

1.2 PROBLEM STATEMENT

Engineers who become managers face an incomprehensible task when they move from the role of being an engineer to that of being a manager. This involves a lot of re-orientation, where they have to redirect their thoughts from *things* to people. Visser, Naude and Schepers (2004) argued that engineers tend to shy away from managing people, they are more comfortable doing things themselves rather than

motivating others to get work done. Nevertheless we still see more and more engineers moving to management positions.

Conger (2007) conducted a study in which he found that the downfall of most organisations both nationally and internationally, is the selection of the best technical performers who are not necessarily the best managers. These engineers get promoted from positions of primarily technical nature to positions with management responsibility. Ronald Read in his study of the engineer in-transition to management stated that if one's background is in a technical discipline there is a good chance that, that person's technical skills gained them recognition as a potential leader and manager (1996). The fact that specialists excel in specialist positions does not guarantee that they will be effective leaders because different abilities are required at management level. Human resource professionals have to come up with career development strategies that will help these engineers during their transition to managerial positions.

1.3 PURPOSE STATEMENT

Previous studies focussed mainly on white samples (Boshoff, Bennet and Kellerman, 1994; Erwee 1990; Rothmann, 2001; Schreuder, 2008), only recently where it focussed on black samples (Coetzee, Schreuder & Tladinyane, 2007; Coetzee, Schreuder & Bergh, 2008). It is however important to note that the main findings from these studies emphasize that not one but several career anchors form an individual's preference for certain occupations or careers. Even Schein himself, although he initially contended that an individual can uphold only one dominant career anchor (Schein, 1978); his own research findings later recommended that individuals can have more than one strong career anchor (Schein1985; 1990).

Given the above argument the question that the researcher wishes to answer is whether individuals really uphold one dominant career anchor or they have a variety of independent career anchors.

Secondly, according to Coetzee and Bergh (2009), career anchors provide organisations with a good framework that assist in offering employees opportunities that are congruent with their career orientations. The researcher also aims to investigate the engineers' career orientations. In this study the researcher will explore career anchors of a black and white sample in a South African engineering setting.

1.4 OBJECTIVES OF THE STUDY

- To explore career anchors of engineers who occupy management positions in a South African power utility.
- To investigate whether technical/functional competencies are dominant career anchors of engineering managers.
- To establish whether general management competences are dominant career anchors of engineers in management positions.

1.5 SIGNIFICANCE OF THE STUDY

The rationale for this research project is to determine whether technical and general management are dominant career anchors of engineering managers. The study will add value towards the improvement of the recruitment & selection strategies as well as leadership development initiatives within the power utility. In the industrial psychology profession, findings from this study will add value in career development, career guidance and counselling practices which will in turn assist individuals identify career opportunities that match their career ambitions. It will assist the human resource professional gain more understanding about the career of an engineer. It will help them identify competencies that an engineer view as necessary in his career path.

1.6 RESEARCH APPROACH

The researcher used a survey research design to conduct this study. An empirical quantitative method of investigation was utilised to collect and analyse data. The statistical analyses consisted of descriptive statistics that was used to investigate

primary data. Primary data refers to the data that is collected specifically for a research project being undertaken (Saunders and Thornhill, 2007). A single stage sampling procedure was used, since data of the employees was available on the company human resources database. The data collection instrument used was Schein (1990)'s Career Orientations Inventory (COI) which is a self-rated measure containing 41 items. The questionnaire together with an introductory message was sent to the employees via e-mail. Multiple repeat e-mails were sent to non-respondents as a follow up and encouragement to complete the questionnaire. The research process was standardised throughout, and the ethical standards were adhered to. The researcher also ensured that the candidates' identities were not revealed.

1.7. DELIMITATIONS

The following is a list of delimitations that were considered during the analyses of the results of this study:

- The data for this research was only obtained from managers who are engineers by profession.
- The study focused on a specific power utility in South Africa, so the findings may not be generalised.

1.8. ASSUMPTIONS

An assumption according to Leedy and Ormorod (2005) is "a condition that is taken for granted, without which the research project would be pointless" (p. 43). The following is a list of basic assumptions underlying this research study:

- the sample of engineering managers would typically reflect the generally accepted anchors for engineers, i.e. mainly technical/functional anchors;
- electrical, mechanical, chemical and civil engineering managers would reflect the same generally accepted anchors of engineers, i.e. technical/functional anchors; and
- the sample of engineering managers would have managerial experience.

1.9 HYPOTHESES

H0: Engineers in managerial positions would exhibit technical/functional competence as a dominant career anchor.

H1: Engineers in managerial positions would exhibit general management as a dominant career anchor.

H2: At least 40% of engineers would possess a wide variety of independent career anchors.

H3: There may be other situational factors that may cause engineers to pursue general management as a career anchor.

1.10 DEFINITION OF TERMS

The following terms were used in the study and are therefore explained below:

Career anchors are non-monetary factors that drive an individual to make certain career choices. These factors include an individual's career values, preferences and interests which are important for the individual's career decision-making process (Schein, 1990; 2006).

An internal career is a subjective sense of where an individual is going in his career. It is a path that an individual set to follow in his work life (Schein, 1990). An *internal career* is something that involves a subjective sense of where one is going in his work life (Elliston & Schreuder, 2000; Schein 2006).

An *external career* refers to the formal stages as defined by an organisation. For an individual these stages involve organisational policies and societal concepts that an individual can expect in the organisation occupational structure (Elliston & Schreuder, 2000; Schein 2006).

Career development is an on-going process whereby an individual progresses through a sequence of career stages that have unique sets of issues, themes, and tasks in an individual's life span (Schreuder & Coetzee, 2006).

"*An engineer* is a person who as a result of his knowledge, use of mathematical, physical, engineering sciences, principles and methods of engineering analysis and design, which were attained through engineering education and experience, is competent to practice engineering" (Repic, 1990 and Kemper, 1975 as quoted by Visser et al., 2004, p. 17).

Career management is a process by which individuals monitor, guide and influence the course of their careers during their work life (Greenhaus, Callanan & Godshalk, 2000).

Values are things that are important to an individual. They feature individual preferences attached to rewards, payoffs, or other aspects of a job (Greenhaus, et al., 2000).

Interests are expressions of what a person enjoys doing. These may include among other things, likes and dislikes attached to particular objects and activities (Greenhaus et al., 2000).

"*Talents* are aptitudes or capacities and presently developed skills or abilities, which reflect what a person can do or could do with proper training" (Greenhaus et al., 2000, p. 44).

The abbreviation used in the study is COI, which stands for Career Orientations Inventory. The word '*he*' would also refer to '*she*', the word '*him*' would refer to '*her*' and *'himself'* would similarly refer to *'herself'*.

1.11 CHAPTER OUTLINE

This dissertation consists of seven chapters. The lay-out and chapters are demonstrated in figure 1.1 below.

Figure 1. 1 Chapter Layout.

Chapter 1 serves as a point of departure. In this chapter the proposed title is stated, the problem statement and the significance of the study are discussed. The objective of the study, as well as the research approach employed is discussed. In addition the delimitations, assumptions and definition of terms are listed to guide the reader through the study.

Chapter 2 provides the outline of the theoretical framework. A thorough literature review is discussed in this chapter. A focus on the transition of engineering managers from engineer to manager, and Schein's career anchors theory is included. Thereafter a review on the recommended career management practices for engineers-in-transition is provided.

Chapter 3 provides a detailed discussion of the methodology used to conduct the study. This includes the research design, formulated hypothesis, data collection method, the sample, as well as the data analysis procedures used.

Chapter 4 discusses the results that were obtained from the statistical analyses. The descriptive and inferential statistics from the results are summarised**.**

In **Chapter 5** results of the study in relation to the hypotheses made are discussed, and they are either accepted or rejected. This chapter also captures the value of the study and the limitations of the research. The implications of the findings to the field of psychology and recommendations for future research are also discussed.

1.12 CONCLUSION

This chapter has provided a discussion of the problem statement and the significance of the study. It provided an overview of covered literature as well a snapshot of the research approach used in the study. The delimitations, assumptions, abbreviations and objectives of the study were presented. The chapter layout was also given for easy reference for the reader.

The next chapter covers literature review, views by different authors about career anchors are discussed in order to obtain a better understanding of the topic is question

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Engineers who are well-known for their efficiency in manufacturing goods and products are often rewarded with line-management positions (Thilmany, 2004). However, when promoted to positions of management, they encounter new and different challenges with which they are unfamiliar. Walden Rhimes, chairperson and chief executive of Mentor Graphics, who started his career as a designer engineer at Texas Instruments, and who has knowledge for both engineering and engineering dispositions, maintains that engineers prefer to be doers rather than talkers (Repic, 1990; and Kemper, 1975).

This chapter outlines general characteristics of the journey that engineers embark on in their career. Studies done by Thilmany (2004) states that new managers cannot be expected to jump into their new roles unprepared and perform well, they must be taught the principles of sound management. The experiences of engineers, and the transition from engineer to engineering manager positions will be discussed.

2.2 A CAREER OF AN ENGINEER

An *engineer* is a person who as a result of his knowledge, use of mathematical, physical, engineering sciences, and the principles and methods of engineering analysis and design, which were attained through engineering education and experience, is competent to practice engineering" (Visser et al., 2004, p. 17).

The entry-level engineering job is a bachelor's degree in engineering, and the typical duration of that degree is four years. According to Bennett (1996) engineering is based on mathematics and science, so a bachelor's degree in physical science or mathematics may suffice. Generally engineering students specialize in a particular branch of engineering but may eventually work in related branches.

My study covered amongst others, the four fields of engineering and they are; civil, chemical, mechanical, and electrical engineering. The following is the explanation of the four engineering fields in the study (Occupational Outlook Handbook, 2010-11 Edition).

Civil engineers design things. These might be roads, buildings, airports, tunnels, dams, bridges, or water supply and sewage systems. They must consider many factors in their designs, from the costs to making sure the structure will stay intact during bad weather.

Chemical engineers apply the principles of chemistry, biology, and physics to solve problems. This problem solving involves the production or use of chemicals, fuel, drugs, food, and many other products. They design processes and equipment for large scale safe and sustainable manufacturing, plan and test methods of manufacturing products and supervising production.

Mechanical engineers design the tools and processes used for satisfying the needs of society through a combination of material, human, and economic resources. That may include working on electric generators, internal combustion engines, steam and gas turbines, and other power-generating machines. They also develop machines such as refrigeration and air-conditioning equipment, power tools, and other power-using machines.

Electrical engineers design, develop, and test electrical equipment. The broad field of electrical engineering involves working with all types of electronic devices, from pocket calculators to supercomputers.

The educational requirement of all the four fields of engineering is a four years bachelor's degree and a professional registration with the Engineering Council of South Africa (ECSA).

2. 3. THE CAREER PATH OF AN ENGINEER

Thinking about when an engineer's career starts, many companies that appoint graduate engineers normally start appointing them at an engineer-in-training level. In most instances, you find that these graduate engineers' education was sponsored by companies, so their first exposure to the company starts when they perform vacation work at the company. Badawy (as quoted by Visser et al., 2004, p. 17) identified the following four distinct stages through which engineer progress:

Stage 1: A scientific or technical engineer usually works under the directorship of others as a trainee or an intern, helping and learning from the supervisor. As an engineer-in-training, a young engineer is given an opportunity to acquire knowledge about engineering and about the company culture. At this stage they are possibly assigned to projects under senior engineers' supervision.

Stage 2: The primary prerequisite for this stage is independence. The move to this stage is made by developing a reputation of being technically proficient and by being able to produce substantial results independently. To accomplish this, the engineer-in-training has to become a specialist, even if it is briefly within a certain field of endeavour. Transition from the first stage to this stage is never easy, attitude and behavioural changes are essential. To adjust from dependence to independence requires initiating, developing ideas and individual standards of performance.

Stage 3: In this stage, the engineer learns to look after others. The engineer assumes some responsibility for giving direction and developing other people. A great degree of self-confidence, enthusiasm to assume responsibility for others, performance and the capability to deal with the strain that results from connecting the worlds of management and the engineering fraternity are required to make a successful transition to this stage. This stage is fulfilling and rewarding in terms of money, status and growth. Many engineers remain in this stage and play the role of a manager, internal entrepreneur, or idea-innovator.

Stage 4: This stage is for those who move to managerial positions and even perform at a strategic level. At this stage, the engineering manager is fully competent and he makes decisions, initiate and approve projects, and in some instances formulate company policies and procedures. Those with an entrepreneurial anchor bring resources, money, and people together to pursue new ideas and direct new ventures.

Engineers seem to be abstract thinkers who are keen to perform stimulating tasks that challenge their skills and talents. Repetitive and mundane work seem not to be appealing to them. According to McEachern (2001) high technology employees will leave the organisation if they feel that their skills are not utilised to their full potential. The same applies with engineers; they will only stay with companies that promote career advancement through life-long learning.

2.4 CHARACTERISTICS OF ENGINEERS

Investigating career anchors of engineers would assist in identifying the qualities engineers require to become good managers (Moretti, 2004). Previous researchers like Read (1996), Repic (1990) and Thilmany (2004), agree that engineers:

- have a strong technical background, which is beneficial in key management and leadership positions;
- are more oriented towards things than people;
- are experts in their field and have passion for technical information and equipment;
- possess and demonstrate abilities to identify and analyse difficulties and to develop solutions; and
- tend to shy away from managing people, as they prefer to do things themselves rather than motivating others to get work done.

The characteristics discussed above can be used as a yardstick in sizing up an individual engineer. Once we get to know an engineer better we become better equipped to effectively apply their personality traits in a business setting.

2.5 ROLE DIFFERENCES BETWEEN ENGINEERS AND MANAGERS

A lack of understanding of what a manager role entails can cause an engineer to fail in his new assignment as a manager position. Management comes with a lot of responsibility considering that the two jobs require different sets of skills (Thilmany, 2004). Table 2.1 below shows the fast differences between an engineer and a manager.

Table 2.1

Role differences between engineers and managers

POSITION	ENGINEER	MANAGER
Focus	More concerned with things technical/scientific	More concerned with people
Decision-making	Make decisions with much information, under conditions of greater certainty	Often makes decisions with inadequate information, under conditions of greater uncertainty
Involvement	Works with tasks and problem- solving personally	Directs the work of others to achieve goals
Process outcomes	Work based on facts, with quantifiable outcomes	Work based on fewer facts, less measurable outcomes
Effectiveness	Depends on personal technical expertise, attention to detail, mathematical/technical	Depends on interpersonal skills in communication, conflict management, getting ideas across, negotiating

POSITION	ENGINEER	MANAGER
Effectiveness	problem-solving, and designing	and coaching
Dependency	Experiences role as autonomous	Experiences role as interdependent
Responsibility	Individual accomplishment in one project, a task or problem at a time	Many objectives at once, requiring orchestrating a broad range of variable and organisational entities
Creativity	Creative with products, designs and materials	Creative with people and organisations
Bottom line	Will it work?	Will it make/save money for the organisation?

Extracted from Bennett (1996).

The above table shows that an engineer needs to broaden his skills beyond technical knowledge and skills if he wants to be a successful manager. This success depends not only on technical expertise, but also on other factors. Amongst other things, things that an engineer needs to look at, is that the manager is expected to achieve objectives through others. The manager is also expected to keep his team focussed on the goals and to give them direction, so that they apply their skills in a way that optimises outcomes. According to Bennett (1996) ‘process’ rather than ‘content’ becomes critical for the new engineering manager. To do this successfully, he needs to first identify and prioritise concerns and be able to handle multiple tasks.

2.6 TRANSITION FROM ENGINEER TO MANAGER

Most careers in engineering start out as technical/functional in their orientation, however not everyone is excited with specialisation. Some people regard the specialist job as simply a starting point to higher rungs on the organisational ladder. They see it as a necessary step to get into general management. Others regard an engineer job as an opportunity to learn some skills that will be needed to launch into independent or entrepreneurial activities. On the other hand Brush 1979 (as quoted by Visser et al., 2004) contents that graduating scientists or engineers typically do not have any immediate interest in assuming managerial roles, to the extent that others do not even understand what the job of a manager really entail. This shows that an engineer, who is used to working with *things*, may never have attained the necessary managerial skills to work in a people-oriented role, so a smooth transition may be required. Table 2.2 below presents the factors that need to be considered during the transition of an engineer to manager.

Table 2.2

Guidelines to ease the transition from engineer to manager

FACTORS INFLUENCING THE TRANSITION	IDENTIFYING THE FACTORS
SKILLS	Some questions that could be asked regarding administrative skills:
Administrative skills	-What kind of administrative experience does he have? -Has he been involved with management projects and task forces? -To what extent does he understand the way the organisation operates? -Does he like to make decisions or solve problems? -Is he capable of taking risks? -How does he relate to authority, power, and responsibility?

	-What type of skills does he have in the area of organisational structure and design? -Is he effective in appraising the performance of others? -Would he be comfortable working against deadlines? -Is he good at getting things done through others, at follow-ups and feedback? -Would he delegate authority to others? (Kerzner, 1992.)
Interpersonal skills	-Is he good at working with people? -Is he a team-player or a loner? -Would he be effective in motivating and inducing others to work hard? -Is he good at “sizing up” people? -Is he a good communicator? -Does he maintain healthy relations with his associates and supervisors? -Does he take initiative and exhibit leadership qualities in working with others? -How does he handle conflict? -How does he relate to power? Would he use it wisely? -Would he appreciate subjective things like emotions, feelings and values and their place in management? (Cummings & Worley, 1997.)
Technical skills	-Does he have the professional respect of his peers? -Can he identify with people who are part of the technical community? -What is his understanding of product applications? -Where will his loyalties lie? -Any knowledge about technological trends and evolution - evolutions? -Can he identify with the big picture? -Can he play the dual role of professional administrator as a professional and a manager of engineering activities? (Kerzner, 1992.)

Personality and career orientation	-What are his personal motives? -Why does he want to become an engineering manager? -Why is he working for this particular organisation? -What are his career objectives? -Would he be preoccupied with getting the job done – as a potential manager – or with maintaining the “nice guy” image? -How strong (dominant) are his needs for achievement and power? -Is he capable of interacting, relating to, and empathising with others? (Kerzner, 1992.)
Knowledge	-How much management knowledge does the engineer have? Experience? -Does he have enough respect for managerial work? How much value does he attach to managerial as opposed to engineering work? -Would he be willing and able to upgrade his management knowledge through education and training? (Kerzner, 1992.)

Extracted from Kerzner (1992); Cummings and Worley (1997).

2.7 SETTING GOALS AND MAKING CAREER DECISIONS

Understanding career development stages would help people gain more knowledge about the context within which individuals life and work experiences would influence their career management decisions.

2.7.1 Career development

Career development from an organisation standpoint, is an on-going formal process by which the organisation focuses on developing and it human resources in in an effort to meet both employees and organisational needs (Rue 2004). From an individual's outlook, career development is a continuous process whereby individuals go through various career development stages in an effort to advance their careers (Greenhaus et al., 2000). According to Lee and Wong (2004) an individual's career anchor goes through career development processes where an individual tests himself in various job situations. When the individual experiences any job successes, that reinforces his career anchors in those areas. Different authors describe a career in terms of the following ten career development stages:

Stage 1 - This stage prepares the individual to go through the necessary education and training relevant to the occupation he tentatively chooses. This is a beginner phase in which the engineer knows nothing about engineering (Super, 1990).

Stage 2 -This is a stage where actual education and training takes place. At this stage the individual is expected to make clear decisions about his career. He needs to be clear about what he wants and should make changes in his career goals if necessary (Super, 1990).

Stage 3 - This is the *growth stage* (birth to age ±12-14) in which an individual is introduced to the world of work for the first time. This is a crucial stage both for the individual and the organisation. Perceptions formed by both parties at this stage contribute to the formation of attitudes which manifest themselves into work behaviours (Super, 1990).

Stage 4 - This stage is the *exploration stage* (adolescence, age ±14-25). This stage requires individuals to collect more specific information about themselves and the world of careers. This is where personal learning takes place for the individual, and the organisation begins to make demands on which the individual must respond. The career occupant has to make final choices about whether he remains or he leaves the profession and/or the organisation (Super 1957).

Stage 5 - This stage determines whether the career occupant has passed the training stage. This is where the values, motives, and interests of the career occupant become clear and can be observed by the way an individual responds to different challenging situations in which choices must be made. Career occupants begin to have a good sense of their abilities, strengths, and weaknesses. Self-knowledge becomes critical in helping the individuals to form their self-concept at work and in other life roles (Super, 1957).

Stage 6 - This is the *establishment stage* (early adulthood, age ± 25-45). In this stage, individuals are more concerned with advancement in their chosen occupation. They are trying to create a stable work environment for themselves with the prospects for growth and promotion. By this time the career occupant needs confirmation from the organisation whether he is getting permanent employment with the organisation or not (Super, 1990).

Stage 7– This is a *mid-career and reassessment stage*, where individuals reassess themselves in terms of rediscovery or re-affirmation of their career decisions. In this stage career occupants have to make choices about whether they remain in their chosen occupation and continue working for the same company (Super, 1957). Other options include starting own business, changing industries, or dedicating their services to non-profit organisations and public service departments (Bloch, 2005).

Stage 8 - This stage is about, maintaining, regaining, or levelling off momentum in one's career. For some, determination to climb the corporate ladder as far as possible becomes apparent. Others start relooking at areas of work they wish to

pursue; and even engaging in other complex assessments of how they can balance work, life, and family demands. This stage may also involve levelling off where an individual realizes that his talents, motives, and values do not require any further aspirations (Schein, 1990).

Stage 9 - This is the stage where an individual starts to slow down in his career development aspirations. This could be as a result of the feeling that they no longer fit the profile of the majority of employees who work for their organisation. For some older workers, to be managed by someone who is generations younger than oneself, may be a difficult thing to deal with (Brewington & Nassar-McMillan, 2000). This is a difficult stage for some, and they may tend to aggressively deny reality that they have to go on retirement. They may continue pretending that it is business as usual and actively avoid attempts that prepare them for retirement.

Stage 10 - This is a retirement stage where a person retires, either because he chooses to or he has reached the retirement stage. Retirement can be traumatic for some people; it even brings about physical or psychological health problems and sometimes can lead to premature death. Desire to remain vigorous in the workplace throughout one's retirement age suggests that people may tend to spend longer time in the maintenance phase delaying their retirement (Brewington & Nassar-McMillan, 2000).

In conclusion, career development is about continuously evaluating and developing one's skills in relation to the industry they are in. To drive this process succesfully, employees must have a strong self-concept, in terms of what they want from their occupations. According to Schreuder & Coetzee (2006) using structured psychometric assessments and career development centres to assess and develop competencies of employees, would assist individuals understand their career choices better.

2.7.2 Career management

Career management is a continuous process whereby the employee gains a better knowledge about himself (interests, values, capabilities, personality). He also gains knowledge of the working environment, occupation and the organisation he works for. It is important for the individual to develop a strategy that will drive his career objectives; and gets feedback on the usefulness of the adopted strategy and the appropriateness of set goals (Greenhaus and Callanan, 1994).

Successful career management systems call for collaboration between the internal career and the external career. An *internal career* is a subjective long-term definition of career success by an individual. It represents an individual's life and work goals. An *external career* is a short-term definition of career success by the organisation or the profession. It is referred to as short-term because it is unpredictable and fast-changing. Organisations that try to keep valued employees are therefore, encouraged to provide incentives and career paths that are in line with employee career aspirations. If there is a misalignment this may result in anxiety, stress, job dissatisfaction and a high turnover (Coetzee & Bergh, 2009).

According to Greenhaus and Callanan *(*2000), today's 'protean career' places the responsibility of managing the career on the individual. The individual is expected to define and forge ahead his career paths within the ever-changing world of work. This change in career management means aligning human resource systems and procedures with a new definition of the employee-employer relationship. Under the new protean career organisations, are not under obligation to provide security to their staff; however they still require high-quality, self-directed, performance-driven individuals to do the job.

Effective career management needs to take care of physical and psychological needs of the career occupant in each life/career stage. It is important to keep this in mind because the career needs of a learner, the needs of an employee in his mid-career, and those of an employee approaching retirement, are not the same (Greenhaus & Callanan, 1994). For example according to the (*Human Resource*

Management Review, 1996) journal using standardized career ladders and job rotation methods for all employees may lead to poor staffing decisions, dropped job performance and high turnover. A forced move of an employee with a technical/functional career in production into sales or management is unlikely to be a good decision. The probabilities of that employee failing in the new assignment or leaving the department/organisation because of frustration are high.

In conclusion, understanding different employee needs in career management is very important as we cannot suggest one solution for all employees. Schein (1978) supports this notion by saying, if a person moves into a career that fails to meet his career needs he is bound to be 'pulled back' into something more matching – hence the metaphor of 'anchor.

2.7.3 Self-knowledge and career planning

Career planning is a process whereby employees obtain knowledge about their values, personality, preferences, interests, abilities, and the working environment, and then make an effort to achieve a good match. It is a process whereby an individual either on his own, or with the assistance of the organisation, takes charge of his short- and long-term career goals. Career planning and career-pathing need to be negotiated between the individual and the organisation because even though the organisation does not guarantee security to the career occupant, but it still need performance driven individuals to do the job. Self-knowledge is very important for career planning, because it enables the individual to make more rational and informed career decisions (Schreuder & Coetzee, 2006).

2.7.4 Pursuing career goals

According to Esterhuizen (2010), having clear career goals stimulate health-promoting behaviours and it leads to increased physical and emotional wellbeing of employees, which in turn facilitate a positive outlook towards life in general,. Although the structure of careers have become more protean, job/role design by an organisation still plays a critical role. Organisational size and a degree of

decentralization are critical to allow for a variety of actual career moves. A responsive organisation that constantly changes its shape, personnel, and its mission may be best for some career moves. Edgar Schein maintained that careerists who are technically/functionally anchored will find wide-ranging opportunities in jobs where learning is a perpetual requirement (*Academy of Management Executive*, 1996).

In today's unpredictable and ever-changing environment, proponents of the internal career concept strengthen the idea of a protean career, in a sense that the individual should control his career; his career success should not be determined by external influences (Schreuder & Coetzee 2006). In reality individuals know exactly what they want in their careers, and they also know the kind of jobs that will satisfy their career needs and expectations. Psychological assessments are done as a confirmation and to close possible gaps in terms of self-knowledge.

2.7.5 Career decision-making

Career decision-making is a thought process of selecting of a course of action that has implications for the decision maker (Singh & Greenhaus, 2004). According to Schreuder and Coetzee (2006) employees should be encouraged to become aware of their established career anchor, as its value in *career decision-making* should not be underestimated. Identifying one's career anchor through a self-diagnostic process strengthens the individuals' ability to make more informed decisions about their careers. Coetzee and Roythorne-Jacobs (2007) upholds this notion by mentioning that self-knowledge and the knowledge about available employment opportunities is very important for making career decisions.

2.8 SCHEIN'S CAREER ANCHORS THEORY

Schein (1978) invented the term '*career anchor*' to describe a collection of self-observed attitudes, values, needs and talents that develop over some time, and which when developed, shape and guide individual career choices. This normally refers to a set of talents, values, and motives that a person would not give up when forced to make a choice (Schein, 1990).

According to Schein (1990), the career anchor is important because it can hinder/enhance an individual career choices, and decisions to move from one job to another. It shapes the intrinsic motivation an individual has towards life, his views of the future, his choices of specific occupations and work settings, as well as his reaction to work experiences.

Presenting occupational choice situations to an individual may help him identify his true career anchor. If no particular anchor emerges, it could be that the individual has not had sufficient life experience to develop priorities that regulate his career choices. Schein maintains that a person may not be aware that he has a general management talent, if there are no general management opportunities in his work environment.

According to Schreuder and Coetzee (2006), the way careers are organized in our times, individual jobs often do not match career anchors of the job occupants. However, people are able to perform somewhat in such situations but, they are not happy and they do not feel fully engaged in what they do. They may adapt to circumstances and make the best of them, but their anchors do not change; as soon as there is an opportunity they will seek a better match.

Attracting, retaining and motivating good quality employees is achieved through an employee receiving on-going development through the provision of guidance on career options to strive for, given their skills, interests and observed potential (Havran et al., 2003). This should be done in order to identify job characteristics that arouse intrinsic motivation, from employees.

With the economic and organisational changes, careers are becoming more protean, the psychological contract between an employee and the employer does not guarantee any security (Greenhaus et al., 2000). Schein's theory of career anchors continues to be tried in the process, but it has remained consistent in its premises about the role of career anchors when making career decisions (Havran et al., 2003). During economic and organisational changes a person's career anchors still remain critical. One can conclude that for individual employees to act on their needs, values

and interests, they need a strong internal ‘compass’ to help them take charge of their careers. Doing self-assessment and engaging in career planning processes with a full knowledge of what their career anchors are, will help employees manage their careers well.

2.9 DEVELOPMENT OF A CAREER ANCHOR

According to Schein (1990) a career anchor is a mixture of perceived areas of competence, motives and values that pulls a person towards specific role types in his work life. According to Schein (1978), a career anchor is formed whenever an individual experiences any work-related successes in that particular area of work. Schein continued to say that when a career evolves, the person develops a self-concept which is built on whatever self-insight an individual has acquired from life experiences. This is also referred to as a career identity, which is a structure of meanings in which the individual links his own motivation, interests and competencies with acceptable career roles. It is however important to note that, it is not a mature self-concept until a career occupant has had enough real occupational experience to confirm his talents, motives and values.

Schein’s work emphasizes an essential differentiation between the original career choice processes and subsequent career identity formation. He maintained that a career identity only occurs through tangible experiences with real tasks and real co-workers in real work settings. If a person has many diverse experiences and receives valuable feedback in each one, self-concept develops more quickly. If a person has only a few jobs in the early years of his career or obtains minimal feedback, forming career identity may take much longer (Schein, 1990).

With this argument one can conclude that career anchors are formed only once individual talents, motives, and values have been confirmed. This is a long-term concept that an individual has formed about himself and it does not change. Schein however admits that because people cannot always find jobs that match their career anchors, the relationships between career anchors and career outcomes are not always perfect, Schein (1990).

2.10 CAREER ORIENTATIONS INVENTORY (COI)

According to Schein (2006) a career anchor consists of individual skills, talents, motives and values. Schein (1990) advocates that the construct career anchors can be measured by means of a combination of the COI and structured in-depth interviews. Schein (1978) and DeLong (1982a) confirmed the need for assessing the internal career orientations of employees, as these provide valuable information regarding values and motives driving individuals' career decision-making. Their research suggests that people's career choices and experiences of subjective career success are driven by a set of chief career motives that seem to be part of the career self-concept or inner career orientation. According to Coetzee and Schreuder, (2009) these master career motives act as a cognitive compass that inspires and pulls people towards specific career choices and decisions.

2.11 TYPES OF CAREER ANCHORS

Schein (1978) identified the following eight career anchors that can assist individuals in making the right career choices, namely technical/functional competence; general managerial competence; autonomy/independence; security/stability; entrepreneurial creativity; service/dedication to a cause; pure challenge; and lifestyle (Elliston et al., 2000; Schein 2006).

According to Feldman and Bolino (1996) the 'talent-based' anchors consist of managerial competence (willingness to solve complex, whole of-organisation problems and undertake subsequent decision making), technical/functional competence (the achievement of expert status among peers) and entrepreneurial creativity (opportunity for creativity and identification of new businesses, products or services). The 'needs-based' anchors consist of security and stability (long-term employment for health benefits and retirement options), autonomy and independence (personal freedom in job content and settings) and lifestyle motivations (balancing one's personal and family welfare with work commitments). The 'value-based' anchors consist of pure challenge (testing personal endurance through risky projects or physically challenging work) and service or dedication to a cause (working for the

greater good of organisations or communities). Table 2.3 below gives an integrated overview of the concept of career anchors.

Table 2.3
Career anchors

NEEDS-BASED CAREER ANCHORS	VALUES-BASED CAREER ANCHORS	TALENTS-BASED CAREER ANCHORS
Autonomy/Independence Personal freedom in job content and settings	*Service/Dedication to a cause* Working for the greater organisations or communities	*Technical/Functional Competence* Achievement of expert status among peers
Security and Stability Long-term employment for health benefits and retirement options	*Pure Challenge* Testing personal endurance through risky projects or physically challenging work	*Managerial Competence* Willingness to solve complex, whole-of-organisation problems and undertake subsequent decision-making
Lifestyle Obtaining balance between personal and the family's welfare with work commitments		*Entrepreneurial Creativity* Opportunity for creativity and identification of new businesses, products or services

Extracted from Feldman and Bolino (2000); Baruch (2004); Kniveton (2004); Coetzee and Schreuder (2008).

It is very important for individuals to know their career anchors. When people know their career anchors, they become empowered to face career choices and decisions in a way that is consistent with their values (Schein, 1990).

According to (Schein, 1990, .p. 1) “irrespective of an individual’s current job/career, future decisions become easier and more valid if one has a pure understanding of one’s own orientation toward work, motives, values and self-perceived talents”. In explaining each of the career anchors Schein began with general characteristics of the anchor. He then examined issues involved in managing someone with that anchor, including the kind of work, pay and benefits, promotion system, and recognition preferred by a person with that career anchor.

2.11.1 Technical/functional competence

According to Schein (1978), people with a preference for a technical/functional career anchor gets satisfaction from being experts in a particular field and being given maximum autonomy in the execution of their goals. They organize their careers around particular technical/functional competencies. When these people are moved to other areas of work, they will likely be less satisfied, less skilled; and they may even feel pulled back to their areas of competence and enjoyment, because their identity is built around their work content.

Technical/functional people generally dislike being restrained by facilities, budgets, resources, and unnecessary bureaucracies that hinder them from performing their jobs properly. It is desirable for this group of people to do challenging work. If the work does not challenge their skills and abilities, it quickly becomes tedious and demeaning, resulting in them seeking other challenging assignments elsewhere. Because their self-esteem hinges on them exercising their talents, they need tasks that permit such exercise. Promotion for this group does not necessarily have to be in terms of the rank. Being promoted into a more general job is viewed as totally undesirable because it forces them out of the specialities with which they identify (Lee & Wong, 2004).

Technical/functional people desire to be remunerated for their expertise, which is regularly defined by their level of education and work experience. They check whether their salaries are market-related to people of the same profession in the industry. They are oriented towards external equity, meaning that they will compare their salaries to what others of the same skill level earn in other organisations. Technical/functional people are oriented more towards absolute pay level than towards special incentives such as bonuses or stock options as forms of recognition. Retention of this group of people is very important to the organisation because they are regarded as highly mobile and they leave if they feel they are not remunerated fairly (Schein, 1990).

Recognition from peers is more valued by technical/functional people. They feel they understand more in terms of what the employee achieved than the uninformed recognition from a supervisor or manager. “On top of the list of valued recognitions in terms of priority are (1) opportunity for advanced learning and self-development in that functional area; (2) organisation sponsored sabbaticals; (3) encouragement to attend professional meetings and so forth” (Schein, 1990, p. 22).

2.11.2 General managerial competence

People with a preference for general managerial competence want to become general managers. They find that managing others, advancement, more responsibility, leadership and income are all vital to them. This group views specialization as a way of gaining appropriate experience (Kniveton, 2004). Important values and motives for this group of people are advancement up the corporate ladder to higher levels of responsibility, leadership opportunities, contribution to the success of their organisations, and high income.

According to Schein (1990, p. 23), the three basic skills needed by people with general managerial competence are: analytical skills, interpersonal and intergroup competence and emotional competence.

- *Analytical competence:* The ability to identify, analyse, synthesize, and solve problems using incomplete information and under uncertainty.

- *Interpersonal and intergroup competence:* The ability to influence, supervise, lead, handle and control people at all levels of the organisation to achieve organisational goals. This skill is about eliciting valid information from others, getting them to collaborate to achieve synergistic outcomes, motivating people to contribute what they know to the problem-solving process, communicating clearly the goals to be achieved, facilitating the decision-making process and implementation, monitoring progress, and instituting corrective action if necessary.
- *Emotional competence:* The capability to be inspired by emotional and interpersonal issues and crises, rather than to be exhausted or incapacitated by them. It is the ability to stand high levels of responsibility without becoming paralysed. It is the capacity to exercise power and make tough decisions without guilt or shame. Most general managers referred to the painful process of learning as to make tough decisions, like laying off a valued older employee, committing huge sums of money to a project, asking subordinates to perform a very difficult task that he might not want to do, inspiring a demoralized organisation

People with a general managerial competence get attracted to varying and challenging work. They measure their success through organisational success; the success or failure of the organisational goals reflects on their managerial competence. Since they are the drivers of organisational objectives, this group of people expect higher salaries than their subordinates. They have high regard for a company that has good retirement benefits. They insist on promotion based on merit, measured performance and results. Even though they acknowledge that personality style, seniority, politics and other factors play a role in determining promotions, general managers believe that the ability to get results is the critical criterion (Schein, 1990).

The most valued kind of recognition for the managerially anchored group is promotion to positions of higher responsibility. According to Schein (1990), such positions are measured by things like the rank, title, salary, and number of subordinates, size of budget, and the importance of the project or department or

division to the future of the company. This group also value recognition in the form of raises and bonuses. They enjoy status symbols, like large offices, cars, and – most importantly – approval by their superiors.

2.11.3 Autonomy/independence

This is about an individual's independence and freedom from an organisation. "People with preference for the autonomy/independence anchor cannot tolerate to be bound by rules, procedures, working hours, dress codes and other norms. They prefer further development in a technical area rather than in general management. This group find organisational life to be restraining, unreasonable and interfering with their private lives. These individuals search for work situations in which they will be outstandingly liberated from organisational constraints, in order to pursue their professional competence (Kniveton, 2004, p. 567).

According to Schein (1990) "extreme autonomy needs a high degree of education and professionalism, where the educational process itself teaches the person to be totally self-reliant, and responsible" (p. 25). Individuals with a strong autonomy/independence anchor are to be expected to have higher levels of entrepreneurial goals, if interested in business or management, they may go into consulting. Woo, Cooper and Dunkelberg (1991) maintain that in organisations, people with preference for the autonomy/independence anchor would go for jobs like research and development, market research and financial analysis, where autonomy is relatively possible.

This group of people prefer clearly delineated, time-bound project work. It can be part-time, full-time or even temporal kind of work, they do not mind. Since they are autonomy/independence-anchored, give them goals and targets and leave them alone, they do not stand close supervision. Autonomy/independence-anchored people prefer merit pay for performance, immediate payoffs, bonuses, and other forms of compensation with no strings attached. They prefer portable, cafeteria-style benefits that permit them to select the options most suitable to their life situations at given points in time. This group value promotions that reflect past accomplishments.

In other words, promotion should bring more autonomy to them than the previous job. Portable recognition, like awards, prizes and letters of commendation mean more to this group than promotions, title changes, or even financial bonuses (Schein 1990).

2.11.4 Entrepreneurial creativity

Entrepreneurial-anchored people are primarily inspired by a great need for creating or building something they can be identified with. They are more interested in starting up new projects rather than managing current ones (Kniveton, 2004). This group is not interested in running businesses for the sake of autonomy; they are obsessed with proving that they can create businesses. For them, making money is the number one key to success. Entrepreneurially-anchored people typically began to pursue their dreams relentlessly early in life, maybe by making small money in high school. “These individuals have a great need for making something on their own, either by developing a new product or service, building a new business enterprise through financial manipulation, or even by starting their own business” (Schein, 1990, p. 28).

Entrepreneurially-anchored people are obsessed with the need for challenging work where they have to create, or continue to invent new products/services. Ownership is ultimately the most important thing for entrepreneurs. If they develop a product, owning the patent is the most important thing to them than paying themselves salaries.

Schein continues to say that entrepreneurs want to accumulate wealth, not so much for their own sake but as a way of showing the world what they have accomplished. Benefit packages are probably not a meaningful issue to them. They also value high personal visibility and public recognition. They display this need by placing their own names on their products and companies. Schein (1990) maintains that large organisations that attempt to retain entrepreneurs, often misunderstand the intensity of their need to have their names on products they invented. Unless given control of the new enterprise with patents and 51 per cent of the stock, an entrepreneurially-anchored person will not stay with an organisation.

2.11.5 Service/dedication to a cause

"Employees with a sense of service dedicate their serve to people and they want to make the world a better place to live and work in. This anchor is mainly concerned with improving the world, and helping society. They are anxious to work in a field which meets their values, rather than their skills" (Kniveton, 2004, p. 567). This group is more interested in fulfilling certain values, than in their talents and areas of competence when they occupy positions. Helping people and improving the world is what matters most to people with a preference for a service/dedication competence.

They are normally interested in helping professions like medicine, nursing, social work, teaching and ministry. In the business environment, they are more interested in positions like human resource consultants, labour lawyers and medical research. They want work that is going to allow them to influence their employing organisations or social policies to meet their values. They want a fair pay for their contributions and portable benefits. People with a sense of service/dedication anchor value promotional systems that recognize their contribution. They want value promotional systems that are going to move them into positions with more influence and freedom to operate autonomously. This group value appreciation and support both from their professional counterparts and from their superiors (Schein, 1990).

2.11.6 Security/stability

According to (Schein, 1990, p. 31), "people with preference for security/stability competence have a high need for organizing their careers in order to feel safe and secure. They are highly driven by long-term job security and attachment to one organisation, and are more than keen to acclimatise to norms and standards of their organisation. They are devoted to their organisation and they want to secure ties with the organisation. These are people who do not mind to be in one specific place for the rest of their working life, especially if the other members of their families also reside in a similar place. These employees can stay anywhere as long as they are with their families or their next of kin. High-level jobs and important positions do not

matter much; what is of utmost importance to them is their association with the organisation".

These individuals are afraid of taking risks, so they associate with organisations that provide them with job security and long-term career stability. The highly talented reach high levels in the organisation, they become content when they find security and they are more comfortable with steady and predictable jobs. They become socialised into the organisation's values and norms to such an extent of being labelled as a 'conformist' or 'organisation man' (Leedy & Ormorod, 2005).

The working conditions matter a lot to security/stability oriented people more than the type of work. They prefer stability in the kind of work they do, since security is more of their concern than other intrinsic motivational factors in a job. Because of their loyalty to the organisation, these people want to be sure that their length in service in the company will guarantee them steady increments for each year of completed service.

Tenure is very important to this group, hence they value promotion to senior positions based on tenure in a certain position. However, according to Schein (1990), "this group prefer distributed grade and rank systems that properly explain how long a person should serve in any given grade before being promoted to the next grade". Reassurance with further stability and continued employment is some kind of recognition for a security/stability-anchored person. They want to be assured that their loyalty makes a real input to the organisation's performance.

2.11.7 Pure challenge

This anchor is primarily concerned with overcoming difficulties or problems; competition and winning are of greatest importance to people with this anchor. People with a preference for pure-challenge competence prefer jobs that present them with challenge. They take pride in solving what seem to be unsolvable problems. Some high level strategy/management consultants seem to fit this pattern in that they enjoy more difficult assignments. Some of these people are attracted to

general management positions, because they present a variety of intense challenge. People with a pure-challenge competence seek opportunities that are going to test their ability to solve problems, and they want to prove that they can overcome obstacles. With regards to the typical jobs that the pure-challenge person would be interested in, there is no generalisation; this would depend on the pay, benefits, career growth and other forms of recognition (Schein, 1990).

2.11.8 Lifestyle

According to Schein (1990), “this anchor is predominantly concerned with different facets of life, striking a balance between the career, with the family and other personal interests (p. 30). Individuals with this orientation desire to develop a lifestyle that integrates family concerns, career concerns, and concerns for self-development. These individuals will tend to be more concerned with the possibility of incorporating work, family and self-concerns into a comprehensive lifestyle. They are conscious of choosing careers that strike a balance between their professional and private lives” According to Schein (2006), more and more people are searching for meaningful careers that can accommodate other lifestyle factors. Unlike the autonomy-anchored person, these individuals are willing to work for organisations as long as they provide the right options at the right time. Such options include travelling when situations permit, sabbatical leave, paternity and maternity leave, day-care facilities and flexible working hours.

2.12 CAREER ORIENTATIONS AND CAREER CHOICES

Individuals can have certain orientations towards work that reflect their personal motives, values and talents. This orientation known as a career anchor, is the manifestation of the individual’s self-concept or image in his career choice. “Career exploration seems to be necessary in attempts that enhance compatibility or ‘fit’ between individuals and their work environments. Organisations that try to retain valued employees are therefore, advised to provide incentives and career paths that are in line with the career values, expectations and aspirations of these employees” (Greenhaus et al., 2000, p. 26).

The knowledge of self and the environment and the development of career goals that are consistent with your career anchors are therefore crucial in effectively managing one's career (Greenhaus et al., 2000). When first appointed, individuals are usually trained in some or other specialised fields, but until they are appointed to the career of their choice, they will not know whether their capabilities meet the demands of their potential career (Schreuder & Coetzee, 2006). Career orientations determine the nature of the learning cycles that individuals experience throughout their career lives (Coetzee, 2006).

According to Visser (2003), career decisions that individuals make, are based on their beliefs, viewpoints about different types of careers and what they view as most appealing. Proponents of career development theories conclude that career interests, career values, personality type preferences, unique talents and viewpoints about individuals' possible selves play an important role when making career choices (Schein, 2006).

2.13 PERSON-JOB MATCHING PROCESS

The new psychological contract brings a lot of uncertainty to the career occupant. According to Ferreira, Basson, and Coetzee (2010, p. 8) "the new psychological contract began in the 1990s and we may have to live with it for the next coming decades". Under the psychological contract, a general rule is that career development responsibility lies with the individual. Individuals who want to succeed in their careers have to understand themselves and have to know how to spot changes in the environment. They have to learn to create opportunities for themselves and be prepared to learn from their mistakes.

Ferreira et al., (2010) also emphasizes the importance and the need for managers to ensure effective career matching. They are of the opinion that this can be achieved by offering several rewards and career paths that address diverse needs of a multi-cultural workforce. According to Coetzee and Schreuder (2009), although organisations do not guarantee security for career occupants, they still have to create

favourable working conditions in order to promote job/career satisfaction and commitment from employees.

Proper job analysis by organisations can help job seekers identify jobs that fit their career needs. If a person knows himself well but cannot get decent feedback about the tasks in a given job, he cannot make a smart choice. On the other hand, if the organisation is to put the right talent in the right place, it must be transparent about what it needs by using a proper job/role-planning process.

It has to be noted however that, due to the way careers are structured in today's world of work, there may be cases where one's job and one's career anchor do not match. For example, a technically/functionally-anchored person may be promoted to general manager, or a managerially-anchored person may be given a high-level specialized job. People in these situations would somewhat be able to perform but, would not be happy and would not feel really engaged. They may adapt to circumstances and make the best of their abilities but, their anchors do not change; as soon as there is an opportunity, they will seek a better match. Also, knowledge of the organisational culture is very important for individuals when making career decisions.

"Organisational culture provides underlying values, beliefs and principles that serve as a base for an organisation's management system, as well as a set of management practices and behaviours that both typify and strengthen basic management principles" (Denison, 1990 as cited in Martins & Coetzee, 2007, p. 21). According to Robbins (2005) a lack of congruence between employee and organisational values, norms, and goals may undermine broader organisational initiatives.

2.14 RECOMMENDED CAREER MANAGEMENT PRACTICES

It is very important for individual to identify their career aspirations early in their employment. They need to engage in Career management practices that will assist

them to analyze their skills requirements and their career development needs. Greenhaus *et al.*, (2000) suggest the following career management processes:-

2.14.1 Induction

Induction can play a crucial role in the appointment of engineers as managers. Induction is the process whereby newcomers are introduced to the organisation, the job itself, the workplace, culture, norms, expected behaviours and performance, and the policies & procedures of the organisation. Research studies conducted by Keenan and Newton (1986) on the experiences of new engineers in the United Kingdom found that aspirations of engineers who enter employment were largely unmet. During induction, the engineer should be familiarized with his psychological contract before occupying a managerial position within the organisation. Engineering students who are bursars may somehow have more or less realistic expectations of their jobs, due to their constant interaction with sponsoring organisations during their years of study.

“A debate around the contents of the psychological contract offers an opportunity for impractical expectations to be emphasized and possibly be changed early in the employee’s entry period” (Schreuder and Theron, 2001, p. 122). In the ‘psychological contract’, the organisation clarifies its expectations, and what it will offer in return. From an integration point of view, the ‘psychological contract’ is a strategy for achieving congruence between individual and organisational goals.

According to the findings of Bigiliardi and Petroni 2005; (as cited in Riordan & Goodman, 2007), a lack of understanding in terms what engineers’ expect from their careers may result in career dissatisfaction and a lack of organisational commitment. Responsibility, achievement, and a sense of contribution to the organisation as a whole, seem to be the key factors of motivation for engineers. For a smooth transition, immediate supervisors should be fully equipped to receive the new manager in their department. Designated work space should be arranged in advance of him arriving. Ideally a peer in the department, who already knows how the

organisation works, should be allocated to assist the new manager during his first few days in office.

2.14.2 Training and development

Appropriate management training and development is the next mechanism for easing the transition to management. Training and development can be employed to ease the transition from engineer to manager. Training and development needs in the motivation and rewards area will depend on the type of orientation, values and career objectives the engineer has. According to Havran et al., (2003), training and development needs would depend on the type of orientation the engineer has during the transition. Stronger managerial orientation would ensure easier and less intensive training.

Individuals with a strong specialist motivation would tend to experience the most frustration in the transition. With an undecided engineer, the intensity of the training and the extent of the frustrations would largely depend on how motivated the person is to become a manager. It would also depend on the individual's degree of loyalty to the profession and the organisation, as well as his long-term career objectives.
Internship programmes are also one way of giving engineers opportunities to test the waters and experience management positions before making final commitments to becoming managers. Engineers in transition may also be given project assignments that compose of significant managerial responsibilities, team and task leadership roles. According to Bennett (1996), internship programmes would provide engineers with an opportunity to assess the type of satisfaction they will obtain by performing managerial tasks.

The second area where training and development is needed relates to the personal skills of the newly appointed manager. Three types of skills are necessary for managerial competency, i.e. technical, administrative and interpersonal. Table 2.4 below depicts some examples of topics that should be covered in each of the three skills-training areas.

Table 2.4

Training and development needs in management skills

ADMINISTRATIVE	INTERPERSONAL	TECHNICAL
Job descriptions	Handling people	Knowledge of fundamental technology
Understanding organisational systems	Coordination	Application of technology
Problem-solving techniques	Motivational techniques	
Managerial decision-making	Effective communication	
Problem evaluation	Forming and managing effective teams	
Coping with organisational constraints (budgets, resource allocation, personnel policies, etc.)	Managing innovation and creativity	
Coping with environmental factors		

Extracted from Dipboye, Smith and Howell (1994) cited in (Havran et al., 2003, p. 97).

2.14.3 Managerial motivation

According to Coetzee et al, *(*2006), an appointment in a position and promotion in particular is informed by an individual's performance, and this performance excellence is driven by the individual's motivation to occupy the position. The concept of managerial motivation is vital in identifying upcoming managers. Managers who are highly driven strive towards advancing their careers and desire to be promoted. In general, managerial motivation seems to correlate considerably with managerial effectiveness, i.e. performance appraisals, job grade, number of subordinates and managerial level.

High managerial motivation amongst managers would probably lead to better managerial competence in a company, and eventually it will lead to improved business the performance in that company. McClelland, 1987 (cited in Schreuder & Coetzee*,* 2006), defined managerial motivation in terms of three motives, namely the need for affiliation, performance and power. He maintains that a managerially motivated person would perhaps have a low affiliation motive, a moderate performance motive and a high power motive.

According to Havran et al., (2003, p. 49) the following seven identities are important for easing the transition of an engineer to management:

- Identify managerial potential.
- Employ better selection methods.
- Make the dual ladder work.
- Provide appropriate support, orientation and coaching.
- Reward managers for subordinates' development.
- Provide training in the functions and skills of management.
- Provide opportunities for management internships.

On the other hand, organisational climate, support and development programmes that ease the transition from engineer to management are necessary. Many firms have implemented mentoring programmes within their organisations to help coach

new employees, but in some instances these one-on-one working relationships are set up without regard for shared interests, knowledge or views.

2.14.4 Coaching and mentoring

A newly appointed manager whose task may seem overwhelming, will need training to cover both the immediate and long-term aspects of his job. The most common way to help engineers in transition to management would be counselling, coaching and support (Havran et al., 2003). According to Colwell, 1998 and Maloney, 1999 (quoted by Riordan & Goodman, 2007), the individual, the mentor and the company management are key to the success of the mentoring process.

Steps should initially be taken to ensure that the manager is given (1) adequate instructions and coaching to do administration; (2) an insight into company policies, systems and procedures; and lastly (3) insight into the difficulties he will encounter in making the transition from engineer to manager (Riordan & Goodman, 2007).

2.14.5 Career counselling

Career counselling facilitates the process of competency in a person's career. It helps the career occupant to define their self-concepts by doing introspection and discussing their subjective careers (Schreuder & Coetzee, 2006).

In most organisations, the direct manager is in the best position to conduct career counselling, because he perhaps has the relevant and up-to-date knowledge about the employee. To be a suitable counsellor, one needs to have a good understanding of the organisation, be aware of available career options and know the direction the organisation is taking. However in the 2000's, many structural changes are taking place in organisations, of which managers know about only after they have been announced, which makes this task quite a challenging one.

2.14.6 Succession planning

Succession planning is the key component of career management practices. This is a framework that will help determine possible replacement of a particular manager. As we are moving to flatter organisations, succession planning will be more difficult but will still show who should first be considered when a new vacancy become available or job rotation is planned. Instead of basing succession planning on skills and experience, it is based on the competencies and leadership abilities of managers. This approach to succession planning will be informed by primarily the performance appraisal system, mentors perceptions, assessment centre outcomes, and career counselling. Special attention is needed in responding to equal employment opportunities and unique populations which may require transparent (Baruch, 1999).

2.14.7 Career development workshops

According to Baruch and Quick (2007) organisational career development support is progressively recognized as a key aspect of superior human resource management. Career development workshops are short-term adaptation mechanisms that provide career management information such as the skills, knowledge and experience. These workshops can advance the employability of an individual and boost his career resilience.

Career development workshops enable employees to assess themselves, set career objectives and develop career plans. As an increasing number of organisations are restructuring or becoming redundant, these workshops should provide intra-organisational opportunities. According to Coetzee et al., (2010), organisations that present employees with personal growth and development opportunities by way of career-development and support practices will perhaps receive more benefits.

2.14.8 Performance appraisals

A number of career planning and management practices depend on the performance appraisal system that, if valid and reliable, may serve as the basis for an integrated career planning and management system. Performance appraisals give an indication of people's readiness for promotion, those who are redundant in case of downsizing, and in identifying training and development needs. In this process, they are trained and rewarded for utilising a particular set of skills. These include performance counselling and goal setting, joint planning of future development experiences, and career goal setting and counselling (Baruch, 1999).

Since the greatest way of evaluating and developing managerial potential is in the context of the job, candidates should be given that kind of responsibility that will help identify their potential and contribute to their development. The employee must also be given an opportunity to do what he is motivated to do, as his performance depends on his ability (Visser, 2003).

2.14.9 Assessment and development centres

According to Baruch (1999), proper identification and assessment of candidates' potential is very important in the transition of engineers to management. This is about evaluating the potential of present and future managers and the identification of general development areas in preparation of future roles. This is an effective selection instrument for managerial staffing or pointer of managerial potential and developmental needs.

Assessment centres and development centres can substitute coaching, as they provide thorough information on the strengths and weaknesses of each assesses' performance. The assessment centre is a simulation exercise that is used to measure the candidates' actions when faced with different managerial tasks.

During the assessment centre, key managerial behaviours that determine success in a management position are measured. These dimensions include:

- Leadership
- Planning
- Organising
- Communication
- Decision-making
- Oral and written communication
- Analytical skills
- Delegation
- Taking initiative

Assessment centres and development centres are anticipated to continue playing a vital role in the 21st century.

2.14.10 Lateral moves to create cross-functional experiences

Lateral moves are about creating opportunities on the same hierarchy level in order to create cross-functional experience. Sideways moves are on the increase and they continue to be so as there are fewer hierarchy levels in the 2000's organisations. People need to be given advice about that career progression is no longer along the old lines of historic upward movements. Introducing new ventures, secondments and cross-functional moves will characterize the career path of the future manager, while job rotations and role changes will be common for the current and future work force (Baruch, 1999).

2.14.11 Formal education as part of career development

This process is about selecting people with high potential to attend formal training programmes of study as part of their development path. This can include first degree in engineering, an MBA, or other executive and management development programmes. In the 2000's organisations will be less interested in offering such long-term investment for individuals, due to the short-term period of the new-era job agreements. They will prefer to obtain people who are already experienced (Baruch, 1999).

2.14.12 Posting internal job openings

Internal job advertisements can also be used to invite employees to apply for internal job opportunities. Open vacancies for managerial positions and their requirements are advertised within the firm. First preference should be given to internal promotions before recruiting externally. Job posting can include posting on notice boards, newsletters, e-mail or the intranet. The internet is the latest and most used form of advertising, and is expected to stay with us in the early 2000s and this trend is likely to continue (Baruch, 1999).

2.14.13 360-Degrees Performance Appraisal System

This is an approach for giving performance feedback to the employee from various sources, such as peers, subordinates, managers and customers. This form of performance appraisal is expected to carry on in the 21st century, with it being used further as a performance feedback instrument in development programmes rather than as an information-gathering method for organisational decision-making (Baruch, 1999).

2.15 ESSENTIAL COMPETENCIES FOR FIRST-LINE AND MIDDLE MANAGERS

Management as a process is progressively becoming dynamic and complex. On top of that, the immediate organisational environment in which the middle manager has to fulfil his role has also suffered tremendous changes. Given the vital role of middle management and the challenges facing middle managers in particular, a key question becomes: *Which competencies are vital or critical for middle managers to survive and be effective in these tough times?*

The increasing changes and demands placed on the world of work in the 21st century and the resultant impact on the roles and responsibilities of management, has led to an increasing emphasis on the development of managerial competencies. According to Baruch and Quick (2007), the focus of management training and development should be on developing management skills and competencies required in support of

the organisation, vision, mission and strategy. These authors found that a competency-based approach aims at discovering necessary skills that leaders need in order to effectively deal with different tasks and administrative matters. In the context of the current study, the word 'competency' is regarded as a combination of knowledge, skills, capabilities and behaviours required in carrying out tasks successfully (Potgieter & Coetzee, 2010).

It is also imperative for engineers to clearly understand what management roles entail, to adequately prepare themselves to make a transition from engineer to manager. Table 2.5 below outlines crucial management competencies based on an extensive literature review conducted by Visser (2009) in a South African higher education environment.

Table 2.5

A framework for head of department management competencies

MANAGEMENT COMPETENCY CLUSTER	DESCRIPTION
Planning & organising	- Strategic planning and formulation - Strategy implementation - Day-to-day planning in terms of prioritizing tasks and activities - Environmental scanning and analysis - Delegation of tasks to teams and individuals - Project management in terms of planning, scope, time, cost and quality management
Leadership	- Leadership of overall team and individual team members - Motivation of overall team and individual team members - Managing change and renewal - Managing interdepartmental relationships with peers from within the department - Managing external relationships with key external stakeholders and suppliers

MANAGEMENT COMPETENCY CLUSTER	DESCRIPTION
Leadership	- Customer care and customer service management (external) - Customer care and customer service management (internal) - Risk identification and management - Managing diversity and cross-cultural issues in teams within the department
Controlling	- Monitoring and dissemination of information - Performance management in team planning, conducting and follow-up for team and self - Rewarding performance of team and team members - Effective use of IT (Information Technology) especially communication, planning and reporting systems - Financial and commercial understanding, especially in budgeting, cost control and financial reporting - Planning and running meetings and effective follow-up strategies or activities - Administration, reporting performance and financials, monitoring, maintaining and developing reporting systems -Quality awareness and management according to quality standards and procedures.
Human resource specific aspects	- Handling grievances and disputes - Dealing with issues of discipline - Attracting talent in terms of recruitment, interviewing and selection of new staff members - Effective induction and orientation of new staff members - Employment and human resource policy awareness and management, according to policies, equity, disability, harassment, and so forth. -Occupational health and safety awareness and

MANAGEMENT COMPETENCY CLUSTER	DESCRIPTION
Personal attributes	- management according to policies - Communication skills in terms of questioning and active listening, building trust, empathy and mutual understanding - Business writing in terms of letters, reports, plans and project plans - Creating and giving effective presentations to groups - Creative problem-solving and decision-making - Time management, negotiation and conflict resolution -Emotional intelligence in terms of self-development, self-control, compassion and humanity, seeking responsibility and personal growth

Extracted from Visser (2009).

2.16 LEADERSHIP FIT AND ORGANISATIONAL CULTURE

According to Martin (2005) studies show that not only do leaders' values and behaviour shape the culture of the organisation, but their desire to manage their subordinates also helps to promote organisational culture. Information about the organisational culture is very important for individuals when making career decisions. Organisational culture provide information about principal values, beliefs and principles that serve as a foundation for an organisation's management system, as well as the set of management practices and behaviours that the organisation live by. A lack of alignment between employee and organisational values and goals may undermine broader organisational initiatives (Robbins, 2005).

12.16.1 Leadership

A leader is someone who upholds what is best for all people even if it may not be in their own interest to do. It focuses on the task at hand and not on what the leader

may gain from the position. To become a great leader, you have to find out what you are good at, what you enjoy doing and what your unique purpose and significance is (Martin, 2005).

According to Carmazzi (2007), leadership is not about changing the mindset of the group but is the development of an environment that brings the best in people. It is a process by which an individual significantly influences the thoughts, feelings and/or behaviors of others to accomplish certain objectives. Leaders carry out this process by applying their leadership attributes, such as beliefs, values, ethics, character, knowledge and skills.

Robbins (2005) maintained that, “Leadership is the ability to influence a group toward the achievement of goals” (p. 347). The source of the leadership may be formal or informal, but in most cases leadership comes from the positions that people hold in an organization, mostly managerial positions. His experience is that not all leaders are managers and not all managers are leaders. In most cases the ability to influence that comes outside the formal structures of the organization is often as important as or even more important than formal influence.

According to Hooper and Potter (2000), organisations have changed to a flatter structure where managers and leaders empower their employees and entrust them with more and more responsibility. A more democratic style of leadership and management is required where openness and accountability is exercised – a leadership behaviour which is effective at all levels and is based on trust.

The following discussion is looking at characteristics of effective leaders. It must however be noted that although characteristics of leaders are important, there are aspects of leadership that are extrinsic to the leader which are defined by both the context of leadership and followers of the leader.

12.16.2 Personality Type

According to Martins and Coetzee (2007) knowing a leaders' personality type is an important characteristic of organisational culture. Having knowledge about a leader's personality type can also be useful in scrutinizing a leaders' preferred style of leadership.

Jung's theory of psychological type emphasizes the importance of personal preferences, motives, values, needs, and self-awareness in making informed career decisions, especially with regard to career or work adjustment or adaptation. These differences are due to basic differences in the way individuals prefer to utilize their perception and judgement; sensing and intuition; thinking and feeling.

His theory postulates two attitudinal orientations and four basic psychological functions (Jung, 1990). The attitudinal orientations comprise introversion (I) and extraversion (E) which relate to the focus of attention and flow or psychic energy of an individual. The extravert's attention is externally focused, whilst the introvert is inwardly focused.

Jung (1990) proposes that people develop one of two dominant preferences for information used in perceiving their world: sensation (S) or intuition (N). Sensation-dominant people prefer precise, specific data that is typically derived from their senses. In contrast, intuition dominant people seek holistic information that reflects possibilities; the pattern of data is more of importance than the specific data points. Jung (1990) also proposed that people develop one of two dominant ways of judging information in order to reach decisions and take action: thinking (T) or feeling (F). Thinking-dominant people stress logic in their reasoning; they generalise and abstract. Feeling-dominant people stress value judgments in their reasoning; they think of things in human terms and emphasise how others may respond.

Implied in Jung's typology are two additional orientations relating to the way in which individuals approach the outer world in terms of judgment or perception. These were

made explicit by Myers (1987), who labelled them as judging (J) and perceiving (P). Judging was described as being related to the evaluation of external stimuli and an orientation to cope with these via structure and control. Perceiving was described in terms of receptivity to stimuli and seeking to understand and adapt to life based on these stimuli. By adding the judging perceiving dichotomy, Jung's model was refined by Briggs and Myers (Myers, McCaulley, Quenk & Hammer, 1998) so as to describe sixteen personality preference types. These sixteen personality preference types are measured by the Myers-Briggs Type Indicator (MBTI).

Combinations of the four attitudes (Extraversion-Introversion and Judging-Perceiving) with the four functions (Sensing-Intuition, Thinking-Feeling), result in the following twelve combinations of personality preferences, namely Extraversion-Feeling; Introversion-Feeling; Extraversion-Thinking; Introversion-Thinking; Extraversion-Sensing; Introversion-Sensing; Extraversion-Intuition; Introversion-Intuition; Extraversion-Judging; Introversion-Judging; Extraversion-Perceiving; and Introversion-Perceiving.

12.16.3 Emotional intelligence

According to Salovey and Mayer, 1990 (cited in Martins and Coetzee, 2007, p. 22), "emotional intelligence describes the degree to which individuals are able to tap into their feelings and emotions as a source of energy to guide their thinking and actions". Emotional intelligence is about the regulation of intrapersonal and interpersonal skills and the use of emotional content in solving problems". Emotional intelligence is gradually becoming a key component of effective management, it is also regarded an important element in achieving long-lasting results. Studies on personality also show that there is a link between leaders' emotional intelligence and effective leadership (Carmeli, 2003).

Studies on personality also show that there is a link between leaders' emotional competence and their preferred personality type (Coetzee et al., 2006). Recent studies show that emotional intelligence has been rated high than traditional general mental intelligence. Emotionally intelligent leaders are believed to realize greater

organisational performance. They appear to have the ability to instil enthusiasm, trust and cooperation within and amongst employees (Goleman, 2001).

Collins (2001) realized that managers with high emotional intelligence tended to have subordinates who exhibited high levels of organisational commitment. Studies on personality also show that there is a link between leaders' emotional competence and their preferred personality type (Schreuder & Coetzee, 2006). This ability involves a unique set of competencies defined in mixed models of emotional intelligence and competencies identified by (Bar-On, 2008):-

Intrapersonal - This realm of emotional intelligence is about what we normally refer to as the 'inner self. It is the ability to recognize people's feelings, to differentiate between them, to know and to recognize the impact their inner feelings have on others around them. Success in this area means that you are able to voice your feelings, live and work independently, feel strong, and have confidence in voicing your ideas and beliefs.

Interpersonal – This realm of emotional intelligence concerns people skills. It is the ability to be aware of, to understand and to appreciate the feelings and thoughts of others. It is about being empathetic to what, how and why people feel and think the way they do. Those who function well in this area tend to be responsible and reliable. They understand, network with and relate well with others in various situations. They are good team players, they encourage, believe and function well within a team.

The Adaptability Realm - This realm of emotional intelligence is the ability to weigh and react to various difficult situations. It is the ability to identify and define problems as well as to generate and implement potentially effective solutions. Success in this area means that a person can clutch problems and formulate effective solutions, deal with and resolve family issues and meet conflicts within his social group and in the workplace.

The Stress Management Realm – This is the ability to endure stress without yielding, breaking down, losing control or going under. It is the ability to withstand adverse

events and stressful situations without developing physical or emotional symptoms by actively and positively coping with stress. Success in this area means that you are usually composed, seldom impulsive and handle pressure well.

The General Mood Realm - This realm of emotional intelligence is about a person's view of life, ability to feel satisfied with life, to enjoy self and others and have fun. Happy people often feel good and at ease in both work and leisure; they are able to 'let go', and enjoy having fun.

12.16.4 Transactional leadership

According to Kreitner and Kinicki (2001), transactional leadership pay attention to interpersonal transactions between managers and employees. The understanding of a leader is that of someone who engages in behaviours that maintain a quality interface between themselves and their followers. Transactional leadership seeks to uphold stability rather than encouraging change within an organisation, through regular economic and social exchanges that realize specific goals for both the leaders and their followers.

The transactional leader depends on contingent reward and on management by exception. Contingent reward is defined by Gibson, Ivancevich, and Donnelly (1997) as someone who informs followers about what must be done to receive the rewards they prefer. A leader allows his followers to work on the task and doesn't intervene unless he anticipates that goals are not going to be met on time and at a reasonable cost.

In his study, Bass (1985) contends that "transactional leadership is determined by contingent reinforcement and could be either a positive contingent reward (CR) or more negative active or passive forms of management by exception". "The transactional leader goes into certain contractual arrangements with followers. In exchange for meeting specific objectives or performing certain duties; the leader offers benefits that fulfil followers' needs and desires" (Visser et al., 2004, p. 19). The exchanges involve specific goods that are tangible, not intangible incentives

(inspiring vision, shared values, or emotional bonding) associated with transformational exchange relationships.

Napolitano and Hendersen, 1997 (as quoted in London, 2002) outlined the leadership skills needed to deal effectively with an ever-changing business environment. They included self-leadership (exploring values and perspectives), abiding to a set of business values, such as integrity and honesty, facilitating individual and team performance, managing cross-departmental and organisational boundaries, creating a corporate culture, anticipating the future, and taking responsibility for their own development and learning how to learn.

12.16.5 Transformational leadership

Transformational leadership is about the empowerment of employees, paying individual attention to subordinates and supporting their ideas. Transformational leaders allow their employees to influence outcomes of decisions that impact them. Through proper communication and engagement, transformational leaders promote employee involvement and commitment to the company vision.

According to Bass and Avolio (1995), a transformational leader makes a concerted effort to provide followers with direction, attention, structure, advice and feedback. . Transformational leadership is about developing people through delegation and empowerment. It is about making them responsible and accountable for corporate goals (London, 2002). Transformational leadership can develop in individuals at lower levels in the organisation if those individuals have the opportunity to observe the behaviour of successful, appealing and higher-level leaders (Avolio & Bass 1991). However, the aspiring transformational leader must be keen to reassess his strengths and weak points as a leader.

Research studies by Visser et al., *(*2004) in a power utility, on establishing a statistical significant difference in the leadership styles of inexperienced and experienced engineers, found that “statistically there is a significant relationship between transformational leadership and the experience of an engineer” (p. 22).

Inexperienced engineers were found to be less transformational and transactional than the utility company engineers.

According to Robbins (2005), evidence advocating the superiority of transformational leadership over transactional leadership is overwhelmingly remarkable. Studies done with the United States, Canadian and German military officers found that at every level, transformational leaders were evaluated as more effective than transactional leaders (Avolio & Bass 1991). However, Robbins pointed out that transactional and transformational leadership should not be seen as conflicting approaches. Transformational leadership is built on top of transactional leadership; it produces levels of subordinate effort and performance that go beyond what would happen with a transactional approach alone. Bass (1985) maintains that transformational leadership is not the only answer; in certain situations transactional processes are also needed, particularly for firms that are operating in stable markets. When faced with stormy conditions, transformational leadership needs to be adopted at all levels in the firm.

12.17 LEADERSHIP COMPETENCIES FOR FUTURE LEADERSHIP

Complexity in the world of work would need more business leaders to be able to do work associated with both the current and anticipated future leadership competencies. Notwithstanding the perceived differences between the current and future descriptions of the nature and work of business leaders, current leadership competences will still be applicable in future. Table 2.6 below presents the leadership competencies required for first-line and middle managers:

Table 2.6

Current and future leadership meta-competencies

COMPETENCY	DESCRIPTION
Current leadership meta-competencies	
Thinking strategically	-Convey the organisational vision -Convey the organisational strategy through constructing, connecting and fine-tuning systems
Acting strategically	- Through the enablement of people, execute the intended organisational strategy - Prepare for external trends and alternative scenarios, potentially impacting the business in the medium term
Organisational resilience	- Is able to convey a clear understanding of the need to and steps of change and assists employees and colleagues in dealing with change - Manage the paradox of stability and change
Technical competence	- Able to utilize the knowledge, expertise and skills associated with a technical domain, like the retail industry, with the purpose of constructing, connecting and fine-tuning systems to optimal utilization of resources
Customer orientation	-Direct energy towards the creation of meaningful solutions for identified customer base -Know the detail of customer needs and how it affects service requirements
Business acumen	-Clear understanding of the operational business drivers -Develop and implement plans that anticipate business demands -Identify root causes of problems -Design and develop innovative solutions regarding systems and resource utilization

COMPETENCY	DESCRIPTION
Future leadership meta-competencies	
Learning and knowledge	- Participate in continuous “knowledge networks” that aren’t limited to technical and professional topics
Networking	- Able to share the learning and knowledge with other
Influencing others	- Is able to identify the paradigms and needs of various individuals and groups and can adapt own leadership style to these - Able to sell ideas and concepts to people and get them to willingly follow the set direction, without comprising the contributions and growth of the follower
Information processing	- Relevant information is gathered, selected and processed in a practical, step-wise manner to identify potential answers, which are then evaluated
Talent management	-Attract and retain talent that fits the business requirements -Develop talent by assisting the people in continuous appropriate learning and development -Optimize systems and processes that foster the free expression of ideas, and empowering others to contribute to the organisation
Developing high-performing teams	- Optimize the crested environment in which people are involved, included and have a sense of ownership - Encourage and support team work within own team
Self-insight	-Understands own strengths and weaknesses in terms of the demands of being a representative of the organisation -Ensure that own capability profile is aligned with the appropriate level and nature of job outputs

Extracted from Van Der Merwe and Verwey (2007).

12.18 CONCLUSION

The chapter summarized the career of an engineer within the context of career management principles. Engineers like every career occupant need to engage in career management practices that will assist them analyze their skills requirements and their career development needs. Today's 'protean career' places the responsibility of managing the career on the individual. Organisations now have no formal systems to prepare employees to face management responsibilities. An employee is expected to define and forge ahead his career paths within the ever-changing world of work.

In preparation for the transition from engineer to manager, the literature highlighted the things that an engineer needs to do. To drive his career into management an engineer has to first understand himself. In theoretical terms he has to form a 'self-concept'. Self-knowledge will help him spot career opportunities that match his motives, values, skills, and self-perceived talents.

The literature highlighted that before any career move an engineer need to understand the challenges he will encounter in his transition from manager to management. He has to research about what the manager role entails. A lack of understanding of the management role; may bring about a lot of surprises upon an engineer. It may even cause him to fail in his new assignment as a manager.

Understanding the company culture may also help an engineer when making career decisions. It provides underlying values, beliefs and principles that serve as a base for organisation management systems. That's serves as an indication of whether the company has a commitment of matching employee career goals with organisational goals

The discussion on the literature also emphasized that in career management there is no one solution that fits all. The literature also highlighted that psychometric assessment instruments play a very crucial role in helping individuals understand themselves. In the context of an engineer using psychometric assessment

instruments like the career orientations inventory would help them make informed career decisions, and will help the business understand what engineers expect from their careers.

The following chapter provides a detailed discussion of the methodology used to conduct the research study. This includes the research design, formulated hypothesis, data collection method, the sample, as well as the data analysis procedures used. The sample for the study and demographics of the participants is discussed in detail. Measurement instruments used throughout the study will be discussed, with reference to their applicability as well as their reliability and validity properties.

CHAPTER 3

METHOD OF INVESTIGATION

3.1 INTRODUCTION

An individual's career anchors have been profoundly discussed in the past. Studies by Schein (1978) argued that, an individual can maintain only one dominant career anchor. However, his own and other empirical evidence (as discussed in the previous chapters) suggests that individuals can have more than one strong career anchor; but do individuals really uphold one dominant career anchor or they have a variety of independent career anchors.

This study will add to the body of knowledge presented and will be based on South African data with a black and white sample from an engineering setting.

This chapter will involve a detailed discussion surrounding the decision of the appropriate research strategy and design utilised in the present study. The implications for the chosen research design for reliability and validity are presented thereafter. For the purpose of this study, a customised questionnaire devised by Schein (1990) was used and is discussed herein.

A sample selection procedure as well as the appropriateness of the sample for the research will be discussed. The method for capturing, computerising, and analysing the data obtained from the sample in question is expanded upon, as well as the statistical analyses processes employed.

3.2 RESEARCH DESIGN

According to Creswell (2009), a research design is considered to be a plan that includes the procedures by which data will be collected and analysed. There are three types of research design, namely the qualitative, quantitative and mixed methods approach. For the purpose of this study, a quantitative research design was

utilised because the data will be primary data. Defining quantitative research, Creswell (2009) mentions that this is a type of research that focuses on exploring and understanding the meaning that individuals or groups ascribe to a social or human problem.

The purpose of the research design is to plan and structure a research project in such a way that it enhances the ultimate validity of the research findings (Creswell, 2009). A survey design is used to attain the research objectives by means of which a sample is drawn from a population at a particular point in time (Saunders & Thornhill, 2007).

The researcher collected and analysed primary data using a survey research technique. Survery research like other types of field psychology can help in developing theory and can contribute to the advancement of scientific knowledge in different ways. Information is gathered via *a sample*, which is a fraction of the population which the researcher needs to be able to generalize findings from the sample to the population (Malhotra & Grover, 1998)

The survey used in this study is exploratory research. Exploratory research takes place when the objective is to gain preliminary insight on a topic, and provide basis for more in-depth survey. It can help explore the valid boundary of theory (Forza, 2002). A survey involves the collection of information from a large group of people or population (Babbie, 2007). Survey research involves acquiring information about one or groups of people – perhaps about their characteristics, opinions, attitudes, or previous experiences – by asking them questions and tabulating their answers (Leedy & Ormorod 2005).

Malhotra and Grover (1998) maintained that there are four constraints that could halt the survey research, failure to minimise them can lead to erroneous conclusions and regression rather than progress in contributing to theory. The four types of errors associated with survey research include:-

- *The sampling error* – this refers to a sample that unknown capability of representing the population due to inadequate sample selection. This however excludes the possibility of generalising the results beyond the original sample.
- *The measurement error* – this refers to the data derived from the use of measures which do not match the theoretical dimensions, or are not reliable, and make any test meaningless. Measurement error represents one of the most significant sources of error in survey research. Inappropriate measurement can be due to a number of factors including poorly worded questions, the length of the instrument, bias induced by method, etc.
- *The statistical conclusion error* - when performing statistical tests, there is a probability of accepting a conclusion that the investigated relationship does not exist even when it does exist.
- *Internal validity error* – this happens when the explanation given of what has been observed is less plausible than rival ones, then the conclusions can be considered erroneous.

This study arose from a post-positivist world view. This method is also known as the scientific method, which means that an individual begins with a theory, collects data to either support or disprove the theory and report on findings (Creswell, 2009).

3.3 THE SAMPLE

The researcher has access to the names of managers in the organisation and they sampled these managers directly from the power utility's human resources system. According to Babbie and Mouton (2007), self-administered questionnaires are only appropriate when the population is adequately literate. The assumption made by the researcher was that participants would be able to comprehend the content of the questionnaire because they are engineers by profession and should be fully conversant with English as a language.

The research was done on a total target population of 388 managers who are engineers by profession and employed by the South African power utility. No particular sampling procedure was conducted. Out of a total of 388 managers, 144

responded. The respondents were representative of males and females, and other characteristics, like age and race. See table 3.1 to 3.7 below:

Table 3.1

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26-35 years	65	45.1	45.1	45.1
	36-45 years	50	34.7	34.7	79.9
	45 years and older	29	20.1	20.1	100.0
	Total	144	100.0	100.0	

Table 3.1 above shows that from 144 who responded, 45% ranged between 26 and 35 years; 35% between 36 and 45 years; and 20% of respondents were 45 years and older.

Table 3.2

Gender

		Frequency	Percent	Valid Percent
Valid	Male	115	79.9	79.9
	Female	29	20.1	20.1
	Total	144	100.0	100.0

Table 3.2 above shows that with regards to gender, 80% consisted of males and 20% were females. This is a reflection of the demographics of the South African population.

Table 3.3

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African	78	54.2	54.2	54.2
	White	35	24.3	24.3	78.5
	Coloured	9	6.3	6.3	84.7
	Asian	22	15.3	15.3	100.0
	Total	144	100.0	100.0	

Table 3.3 above shows that out of the 144 respondents, 54% were African, 25% white, 15% Asian and (six) 6% coloured.

Table 3.4

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree/Btech	115	79.9	79.9	79.9
	Honours	6	4.2	4.2	84.0
	Masters	22	15.3	15.3	99.3
	Doctorate	1	.7	.7	100.0
	Total	144	100.0	100.0	

An examination of table 3.4 above shows that in terms of the educational levels, all the candidates (100%) had at least a degree; 20% had a post- graduate degree ranging from honours, masters and doctorate.

Table 3.5

Tenure in Organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	19	13.2	13.2	13.2
	2-5 years	27	18.8	18.8	31.9
	6-10 years	38	26.4	26.4	58.3
	11 years or more	60	41.7	41.7	100.0
	Total	144	100.0	100.0	

Table 3.5 above shows that from the 144 who responded, 13.2% had less than one year tenure in the organisation, 18.8% were two to five years in the organisation, 26.4% were 6 to 10 years in the organisation, and 41.7% were 11 years and more in the organisation.

Table 3.6

Tenure in Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	4	2.8	2.8	2.8
	2-5 years	29	20.1	20.1	22.9
	6-10 years	48	33.3	33.3	56.3
	11 years or more	63	43.8	43.8	100.0
	Total	144	100.0	100.0	

An examination of table 3.6 above shows that only (three) 3% had less than a year, tenure in a management position, 20% were 2 to 5 years in a management position,

33% were 6 to 10 years in management, and 44% were 11 years and longer in management.

Table 3.7

Type of Engineering

		Frequency	Percent	Valid Percent	Cumulative Percentage
Valid	Engineering	70	48.6	48.6	48.6
	Electrical	51	35.4	35.4	84.0
	Mechanical	15	10.4	10.4	94.4
	Chemical	4	2.8	2.8	97.2
	Civil	2	1.4	1.4	98.6
	Other	2	1.4	1.4	100.0
	Total	144	100.0	100.0	

An examination of table 3.7 above shows that in terms of the different engineering degree categories, 49% had a pure engineering degree, 35% electrical engineering, 11% mechanical engineering, (three) 3% chemical engineering, (one) 1% civil engineering and (one) 1% “other”. “Other” was B.Sc. and B.Sc. engineering.

3.4 DATA COLLECTION

The data collection method used adopted the following steps:

- Permission to conduct the research was requested and granted by the organisation.
- Respondents were informed that their involvement and participation in the study was voluntary.
- To avoid neutral answers, a six-point Likert scale was used for subject responses on each of the 40 items.
- The questionnaires were e-mailed to the targeted population of 476 middle managers, and 146 responses were received back by the researcher.

- Each questionnaire included a covering message inviting subjects to participate in the study and assuring them that their individual responses would remain confidential.
- Participants were requested to complete the questionnaires and return them to the researcher by e-mail.
- Multiple repeat e-mailing was sent to non-respondents, which resulted in more responses than it would initially have been.
- The researcher was aware of the challenge of missing information from the collected questionnaire. To curb this, the researcher physically checked the completeness of responses and asked respondents to make the necessary corrections.
- Respondents were also requested to add four additional points to the three statements that are most true to them, in order to determine their most dominant career anchors.
- The responses were captured on a spreadsheet and captured on the software program SPSS version 17.0 (Statistical Package for the Social Sciences).
- The researcher kept a record of sent e-mails and received responses. If a response was not received within a week, the researcher sent a gentle reminder e-mail.
- The researcher offered to give feedback to the respondents that showed interest in the results of the survey.

3.5 THE MEASUREMENT INSTRUMENT

The measuring instrument used for this study is a Career Orientations Inventory (COI) by Schein (1990). The rationale for using this instrument is its ability to measure the elements that this study purports to measure, as well as their reliability and validity. De Long (1982) describes the rationale of the COI as being able to assess individuals' career orientations in a valid and reliable manner. As a central part of the construct career anchor, career orientations may provide insight into the stable and salient values and motivations governing individual career decisions and experience (Coetzee & Bergh, 2009). The Career Orientations Inventory (COI) will

be discussed in detail, as well as its reliability and validity as previously tested by test developers and verified by other previous researchers.

The Career Orientations Inventory questionnaire (COI) is a self-report questionnaire which measures the preferences individuals have for specific career patterns as well as the importance of a set of career decision factors in making career decisions (Coetzee & Schreuder, 2002). This is a research version of the Career Orientations Inventory (COI) developed by Schein (1990) consisting of 40 items, all of which are considered to be of equal value and to which subjects respond in terms of how true the statement is. The COI is aimed at measuring the following career anchors: technical/functional competence, general managerial competence, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge, and lifestyle.

The COI developed by Schein (1990) can be administered to individuals and groups, and requires about 10 to 20 minutes for administration. The instructions are stipulated on the response sheet. Respondents are also requested to add four additional points to the three statements that are most true to them, in order to determine their most dominant career anchors. The researcher can either score the response sheet manually or by means of a software program. To avoid neutral answers, a six-point Likert-type scale is used for subject responses on each of the 40 items.

It should be noted that the Career Orientation Inventory (COI) does not purport to measure career anchors as such; it rather measures a central part of the concept of career anchors, namely career orientation (DeLong, 1982b). However, applying the COI as a measurement of career anchors for research purposes is regarded as an acceptable and reliable practice by researchers in the field (Burke & Deszca, 1988; Custodio, 2004; Erdogmus, 2003; Marshall & Bonner, 2003; Tladinyane, 2006; Van Vuuren & Fourie, 2000).Table 3.8 below demonstrates how each career anchor scale was scored, and the scale under which each item belongs.

Table 3.8

Summary of COI - Scoring Key

TF	GM	AU	SE	EC	SV	CH	LS
Questions	Questions	Questions	Questions	Questions	Questions	Questions	Questions
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40

Extracted from Schein (1990).

TF stands for Technical/functional; GM stands for General management; AU stands for Autonomy; SE stands for Security; EC stands for Entrepreneurial creativity; SV stands for Service/dedication to a cause; CH stands for Challenge; and LS stands for Lifestyle.

On the Career Orientations Inventory (COI), each subscale (technical/functional, general management, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge and lifestyle) is measured separately and reflects the participants' perception and feelings on these dimensions. As a result, an analysis can be carried out as to which dimensions are perceived to be true for the participants and which are not. Subscales with the highest mean scores are regarded as the respondents' dominant career anchor. Total scores obtained for each of the eight categories of career anchors are summed up and averaged, to yield an individual score for each career anchor. The category that yields the highest score is regarded as the individual's dominant career anchor.

3.6 THE RELIABILITY OF THE INSTRUMENT

The Cronbach Coefficient Alpha is used for tests where there are no right or wrong answers (multiple-scored items). Cronbach's Coefficient Alpha is a more general estimation of reliability than that of Kuder and Richardson, this is because the variance in Cronbach's method is expressed in a more diverse way (the variance in Cronbach's method can be calculated without being bimodal) (Kaplan & Saccuzzo, 2001). Cronbach's Alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's Alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale. Table 3.9 below shows the overall reliability for all items.

Table 3.9

Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.892	.897	40

Using the Cronbach Alpha coefficient, the quantitative data were analysed for *internal consistency*. The Cronbach Alpha gives an indication of consistent answering of questions by respondents. The overall Alpha coefficient for all the items is *0.892*. This indicates a very high level of agreement among respondents in their answers to all the questions that were asked.

An examination of table 3.10 below shows the Cronbach Alpha coeffient per scale.

Table 3.10

Chronbach Alpha coeffient per scale

Scale	Cronbach's Alpha	N of Items
TF	.488	5
GM	.767	5
AU	.749	5
SE	.815	5
EC	.790	5
SV	.812	5
CH	.802	5
LS	.793	5

All the career anchors' scales had good reliability coefficients (close to or above .8), except for the *technical/functional scale*, which has a Cronbach Alpha value of *.488*. This value is considered *unacceptably low*. This scale was included in the analysis however; interpretations are considered in the light of the poor reliability of the scale and caution was used when interpreting the results.

An examination of table 3.11 below shows the inter-item analysis of the eight scales that were investigated. This gives an indication of whether the reliability of an instrument improves or deteriorates with each item being removed from the questionnaire.

Table 3.11

*Inter-item reliability for Technical/Functional – Cronbach Alpha **0.488***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.1	16.08	10.329	.155	.501
Sec 1.9	16.11	9.037	.365	.367
Sec 1.17	16.89	8.757	.253	.445
Sec 1.25	17.99	9.056	.241	.452
Sec 1.33	16.03	10.146	.360	.395

The *technical/functional scale* has a Cronbach Alpha of *0.488,* which will *improve* from *0.488 to 0.501 if item 1 is deleted*. The Cronbach Alpha will however, *mostly decrease* from *0.488 to 0.367 when item 9 is deleted* from the scale, which indicates the impact the item has in influencing the total reliability of the instrument for this scale.

Table 3.12

*Item-total statistics for General Management - Cronbach Alpha **0.767***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.2	12.47	17.453	.280	.800

Sec 1.10	12.69	13.671	.540	.726
Sec 1.18	14.04	13.187	.678	.674
Sec 1.26	13.94	12.864	.656	.680
Sec 1.34	14.28	14.901	.548	.723

The *general management* scale has a Cronbach Alpha of 0.767, which will *improve* from *0.767 to 0.800 if item 2 is deleted*. The Cronbach Alpha will however, *mostly decrease* from 0*.488 to 0.674 when item 18 is deleted* from the scale, which shows the impact of this item in influencing the total reliability of the instrument for this scale.

Table 3.13

Item-total statistics for Autonomy - Cronbach Alpha ***0.749***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.3	14.46	11.970	.455	.730
Sec 1.11	14.56	12.766	.558	.693
Sec 1.19	15.56	11.660	.543	.693
Sec 1.27	15.63	11.858	.541	.694
Sec 1.35	15.63	12.668	.491	.713

The Autonomy scale has a Cronbach Alpha of 0.749, which will *mostly decrease* from *0.749 to 0,693 when item 35 is deleted* from the scale.

Table 3.14

*Item-total statistics for Security - Cronbach Alpha **0.815***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item deleted	Corrected Item-Total Correlation	Cronbach's Alpha Item Deleted
Sec 1.4	14.44	16.151	.601	.780
Sec 1.12	14.81	16.783	.454	.825
Sec 1.20	14.47	14.740	.695	.750
Sec 1.28	14.25	15.755	.624	.773
Sec 1.36	14.16	15.911	.668	.762

The Security scale has a Cronbach Alpha of 0.815, which will *improve* from *0.815 to 0.825 if item 12* is deleted. The Cronbach Alpha will however, *mostly decrease* from *0.815 to 0.750 when item 20 is deleted* from the scale, indicating an impact of this item in influencing the total reliability of the instrument for this scale.

Table 3.15

*Item-total statistics for Entrepreneurial Creativity - Cronbach Alpha **0.790***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.5	14.28	15.394	.701	.703

Sec 1.13	15.10	16.262	.633	.729
Sec 1.21	14.13	21.383	.330	.814
Sec 1.29	14.58	19.435	.446	.787
Sec 1.37	14.38	15.161	.740	.688

The Entrepreneurial Creativity scale has a Cronbach Alpha of 0.790, which will improve from 0*.790 to 0.814 if item 21 is deleted*. The Cronbach Alpha will however, *mostly decrease* from *0.790 to 0.688 if item 37 is deleted* from the scale. This indicates the strength of this item in influencing the total reliability of the instrument for this scale.

Table 3.16

Item-total statistics for Service - Cronbach Alpha ***0.812***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.6	16.71	15.565	.604	.775
Sec 1.14	16.65	16.706	.537	.794
Sec 1.22	17.09	15.565	.510	.804
Sec 1.30	16.95	13.473	.777	.718
Sec 1.38	17.74	14.206	.598	.779

The Service scale has a Cronbach Alpha of 0.812, which will *mostly decrease to0.718 if item 30 is deleted* from the scale.

Table 3.17

*Inter-item reliability for Challenge - Cronbach Alpha **0.802***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.7	17.27	11.136	.685	.735
Sec 1.15	17.58	10.734	.681	.733
Sec 1.23	17.44	11.088	.636	.749
Sec 1.31	17.38	12.378	.566	.773
Sec 1.39	18.65	11.613	.416	.828

The Challenge scale has a Cronbach Alpha of 0.802, which will *improve* from *0.802 to 0.828 if item 39 is deleted*. The Cronbach Alpha will however, *mostly decrease* from *0.802 to 0.733 if item 15 is deleted* from the scale. This shows the impact of this item in influencing the total reliability of the instrument for this scale.

Table 3.18

*Inter-item reliability for Lifestyle – Cronbach Alpha **0.793***

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sec 1.8	17.76	12.857	.585	.752
Sec 1.16	16.98	14.944	.557	.759
Sec 1.24	16.98	14.874	.587	.752

Sec 1.32	17.59	14.230	.601	.745
Sec 1.40	18.25	13.336	.560	.760

As illustrated above, lifestyle had a Cronbach Alpha of 0.793, which will *mostly decrease to 0.745 when item 32 is deleted* from the scale.

3.7 DATA ANALYSIS

The computer program used to analyse data was the SPSS (Statistical Package for the Social Sciences) version 17.0. This is a computer program used to process statistical information to arrive at objective scientific outcomes. To begin the analysis, data clean-up was done in order to eliminate any human errors.

Descriptive statistics were conducted to investigate the quality of data. There were no outliers identified, as the researcher made sure that the data was cleaned up on the spreadsheet before it was captured on SPSS version 17.0. An outlier is “an observation very different from most others” (Field, 2005). Outliers have the ability to make statistics biased, for example by affecting the mean score.

The variables and the data used for testing hypothesis in the study are independent variables and dependent variables

3.7.1 Independent variables

- Position (all participants were in a managerial position) – Nominal data
- Gender (male and female) – Nominal data
- Race (categorized in the standard South African races) – Nominal data
- Tenure in company (grouped from less than a year to 11 years or more) – Ordinal data
- Tenure in management (grouped from less than a year to 11 years or more) – Ordinal data

3.7.2 Dependent variables

COI scales (8), summed to create composite scores for each scale – Ordinal data
COI scales (8), with data weighted for importance by respondents – Ordinal data
The data for this study did not meet all the assumptions for parametric statistics. In particular, the assumption of a normal distribution of data was not met, so non-parametric statistics were used in this study.

In order to prove normal distribution, descriptive statistics were conducted and analysed by looking at the skewness and obtaining kurtosis results. Skewness is described by Field (2005) as the measure of a symmetry of a frequency distribution. Kurtosis, on the other hand, measures the degree to which scores cluster in the tails of a frequency distribution. Both the skewness and the Kurtosis scores should be as close to zero as possible in order to indicate that the distribution is normal. Table 3.9 indicates the skewness and Kurtosis scores of the sample in the study. Both the kurtosis and skewness range too far from 0, the mode, mean and medians differ, and for some of the scales, multiple modes exist (TF, GM and SV).

Table 3.19
Statistics for normality of data

		TF	GM	AU	SE	EC	SV	CH	LS
N	Valid	144	144	144	144	144	144	144	144
	Missing	3	3	3	3	3	3	3	3
Mean		20.78	16.85	18.96	18.03	18.12	21.28	22.08	21.89
Median		21.00	16.50	19.00	18.00	18.00	22.00	22.00	22.00
Mode		21[a]	14[a]	20	21	17	22[a]	24	20
Std Deviation		3.621	4.614	4.233	4.868	5.101	4.748	4.118	4.568
Skewness		-.203	.303	.054	-.148	.056	-.324	-.433	-.546
Std Error of Skewness		.202	.202	.202	.202	.202	.202	.202	.202
Kurtosis		-.145	-.189	-.119	-.213	-.686	-.447	-.118	.802
Std Error of Kurtosis		.401	.401	.401	.401	.401	.401	.401	.401
Percentiles	25	18.25	14.00	16.00	15.00	14.00	18.00	19.00	19.00

	50	21.00	16.50	19.00	18.00	18.00	22.00	22.00	22.00
	75	23.00	20.00	22.00	21.00	22.00	25.00	25.00	25.00

Multiple modes exist. The smallest value is shown.

To further examine the normality of the data, the Kolmorov-Smirnov test was conducted (see Table 3.20 below). The Kolmogorov-Smirnov indicates significant non-normality for all the scales, except for GM and SE.

Table 3.20

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TF	.080	144	.025	.983	144	.070
GM	.073	144	.055	.985	144	.118
AU	.084	144	.014	.985	144	.125
SE	.067	144	.200*	.990	144	.364
EC	.080	144	.025	.982	144	.052
SV	.081	144	.023	.978	144	.018
CH	.089	144	.007	.976	144	.014
LS	.076	144	.042	.967	144	.002

a. Lilliefors Significance Correction.

This is a lower bound of the true significance.

3.7.3 Comparison of career anchors

In comparing the career anchors, the composite scores of the career anchors were created based on the scoring key of the COI. Summing Likert scale data is considered standard practice in the social sciences, which is why Likert scale data is often referred to as summative scales (Field, 2009). Each anchor had five items, and

the Likert scale answers ranged from one to six (statement never true of person to statement always true). The scores could thus range from one to 30.

The test also asked respondents to weight their own data, by adding four additional points for anchors they felt were especially important. The weighted and unweighted composite scores were used in two separate analyses and results were compared. The composite scores of the scales were investigated to see whether these scores would meet the requirements of parametric tests. Some of the assumptions of parametric tests were violated (sample size, scale of data, random selection and normality of data for some of the scales), and due to this, the data were analysed using non-parametric tests.

To compare the anchors in terms of importance, the Friedman ANOVA was used to test the hypothesis that one or more scales would be significantly higher scored than other scales (each case contributes several scores to the data). First the Friedman was applied to the unweighted scores, and then it was applied to the scores the participants themselves weighted. When statistically significant results were found, the Wilcoxon test was applied as a post-hoc test to find out which scales differed significantly from other scales, with the Bonferroni correction applied to the significance value. When tactical significance was found with Wilcoxon comparisons, the effect sizes were calculated to establish the magnitude of the differences.

3.8 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE PROPOSED RESEARCH METHODOLOGY

Not all data that come to the researcher's attention are acceptable to be used in a research project. Data can be defective. If they are, they may affect the validity of the researcher's conclusions (Leedy and Ormorod, 2005).

Data for this study was collected using a questionnaire which is considered to be reliable and valid for collecting data on a large scale. The respondents completed the questionnaire at their own time and e-mailed the responses back to the researcher. The assumption made by the researcher was that participants would be able to

comprehend the content of the questionnaire because they are engineers by profession and should be fully conversant with English as a language. The questionnaire had instructions on the first page, which clearly stated what needed to be done. The examples of the instructions can be found on the example of the question under Appendix A. However, it should be noted that room for error and deviations from the instructions may never be ruled out.

The data was handled by only two people, the researcher and the statistician. In the research environment, the researcher cannot avoid having data contaminated by bias of one sort. That means, room for interpreter bias must not be ruled out because the researcher may include some subjective opinions, which may lead to researcher subjectivity.

3.9 ETHICAL PROCEDURES

Research ethics refer to the appropriateness of the researcher's behaviour in relation to the rights of those who become the subject of the research. Permission to conduct the research was requested and granted by the organisation.. The anonymity of the respondents may have not been possible because data will be collected by e-mail. This breaks the anonymity rule because if anonymity is maintained, even the researcher is not supposed to see the name of the respondent. The researcher used code numbers to label the responses and a spreadsheet to control the number of returned questionnaires. This possibility was declared to the participants and they were assured that their names would be kept confidential and would not be disclosed when reporting results.

Research participants were informed about the nature of the study to be conducted. This information, together with a statement indicating that the participation is voluntary and participation can be terminated at any time, were mentioned in an introductory e-mail. It is therefore, assumed that the candidates that took part in the survey consented to their results being used for research purposes.

3.10 CONCLUSION

In this chapter, an outline of the empirical research was discussed. The chapter documented the research approach, the research participants, the research, data collection method, and the techniques and procedures used to analyse the data. The research approach chosen was designed in such a way that it could adequately answer the research question in order to fulfil the objectives of the study. In the next chapter the researcher will discuss the results of the statistical analysis.

CHAPTER 4

RESULTS OF THE STUDY

4.1 INTRODUCTION

This chapter consist of a summary of the descriptive statistics of the sample and of the results found, using the data that was collected and the statistical analysis used to interpret research data. By performing the analysis, it would be possible to confirm or reject the hypotheses as put forward in chapter 1.

The hypotheses for this study are as follows:

H0: Engineers in managerial positions would exhibit technical/functional competence as a dominant career anchor.

H1: Engineers in managerial positions would exhibit managerial competence as a dominant career anchor.

H2: At least 40% of engineers would possess a wide variety of independent career anchors.

H3: There would be other situational factors that may cause engineers to pursue general management as a career anchor.

4.2 DESCRIPTIVE STATISTICS

As illustrated on figure 4.1 below, out of 144 individuals , 45% were between 26 and 35 years of age 35% between 36 and 45 years and 20% are 45 years and older. Therefore, it can be assumed that the sample falls within the working-class population of 26 to 65 years of age.

Figure 4.1 Age

Figure 4.2 below shows the gender statistics. With regards to gender, out of the 144 respondents 80% were males and 20% are females. This is a reflection of the demographics of the South African population.

Figure 4.2 Gender

Figure 4.3 below shows that out of the 144 individuals, 54% are African, 25% white, 15% Asian and six (6) % coloured. This is a reflection of the demographics of the South African population; even the South African workforce is more African, followed by whites, Asians, and then coloureds.

Figure 4.3 Race

Figure 4.4 below illustrates that in terms of the educational level of this sample, all the candidates (100%) had at least a degree. Only 20% of respondents had a postgraduate degree, ranging from honours, masters to doctorate.

Figure 4.4 Education

Of the 144 respondents, 13.2% have less than one year tenure in the organisation, against 18.8% who were two (2) to five (5) years in the organisation, 26.4% six (6) to 10 years, and 41.7% 11 years and more. See figure 4.5 below.

Figure 4.5 Tenure in organisation

Figure 4.6 below shows that only three (3) % had less than one year tenure in a management position, while 20% were two (2) to five (5) years in management, 33% six (6) to 10 years and 44% 11 years and longer.

Figure 4.6 Tenure in management

Of the respondents, 49% have an engineering degree, against 35% who are electrical engineers, 11% mechanical engineers, three (3) % chemical engineers, one (1) % civil engineers and one (1) % “other”. “Other” could be individuals with BSc and BSc engineering. See figure 4.7 below.

Figure 4.7 Type of Engineering

4.2.1 Descriptive statistics for unweighted data

The *means* of each Lilliefors Significance Correction (COI) unweighted scale range from 16.85 to 22.08, and the *standard deviations* from 3.621 to 5.101. Minimum and maximum scores per scale give further indication of the range (i.e. 5 to 30) in the data. See table 4.1 below.

Table 4.1

Descriptives from Friedman output unweighted

						Percentiles		
	N	Mean	Std. Deviation	Minimum	Maximum	25th	50th (Median)	75th
TF	144	20.78	3.621	12	30	18.25	21.00	23.00
GM	144	16.85	4.614	6	28	14.00	16.50	20.00
AU	144	18.96	4.233	7	29	16.00	19.00	22.00
SE	144	18.03	4.868	6	30	15.00	18.00	21.00

EC	144	18.12	5.101	5	29	14.00	18.00	22.00
SV	144	21.28	4.748	7	30	18.00	22.00	25.00
CH	144	22.08	4.118	9	30	19.00	22.00	25.00
LS	144	21.89	4.568	5	30	19.00	22.00	25.00

As illustrated in Table 4.1 above from the unweighted data, the most prominent career anchor is *CH (challenge),* followed by *LS (lifestyle)* and then *SV (service).* There were no statistically significant differences between CH (challenge) and LS (lifestyle), CH (challenge and SV (service), and LS (lifestyle) and SV (service). The top three selected anchors, namely CH (challenge), LS (lifestyle) followed by SV (service) in the unweighted data, could be considered to be equally important anchors for the engineers, with TF (technical/functional) being a possible fourth anchor.

4.2.2 Descriptive statistics for weighted data

For this analysis, Friedman's ANOVA (analysis of variance) was used to test the hypothesis that one or more scales would be significantly higher scored than other scales (each case contributes several scores to the data). First, the Friedman was applied to the unweighted scores, then to the scores the participants themselves weighted (they added four additional points for anchors they felt was especially important).

The *means* of each COI weighted scale range from 17.58 to 24.61, and the *standard deviations* from 5.207 to 6.635. Minimum and maximum scores per scale give further indication of the range (i.e. 5 to 40) in the data. See table 4.2 below.

Table 4.2

Descriptives from Friedman output weighted

	N	Mean	Std. Deviation	Minimum	Maximum
TF_Weighted	144	23.22	5.421	12	42
GM_Weighted	144	17.58	5.394	6	36

AU_Weighted	144	19.90	5.207	7	40
SE_Weighted	144	18.69	5.916	6	37
EC_Weighted	144	19.31	6.635	5	37
SV_Weighted	144	22.58	5.798	7	36
CH_Weighted	144	23.51	5.314	9	36
LS_Weighted	144	24.61	6.627	5	42

As illustrated in Table 4.2 above, it appears that engineers have four equally important career anchors. They are: ***LS (lifestyle), CH (challenge), TF (technical/functional), and SV (service).*** Other anchors in descending order are: *AU (autonomy), EC entrepreneurial creativity)* and *SE (security)*. The anchor least likely to be endorsed by the engineers is GM (general management).

There are no statistically significant differences between LS (lifestyle) and CH (challenge), CH (challenge) and TF (technical/functional), and LS (lifestyle) and TF (technical/functional). Considering how close the mean differences are, this is not surprising. The effect sizes are large for differences between scales with lower means and scales with higher means. Therefore, the top-three selected anchors in the weighted data – LS (lifestyle), followed by CH (challenge) and TF technical/functional) – could be considered to be equally important anchors for the engineers, with SV (service) being a possible fourth anchor.

4.3 EXPLORATORY ANALYSIS

4.3.1 Wilcoxon test statistic

An examination of table 4.3 below indicates significant differences between seven of the COI scales. The Wilcoxon test was used to identify between which groups there were differences. The Wilcoxon test is a non-parametric test that compares two paired groups. The test essentially calculates the difference between each set of pairs and analyses these differences. The Wilcoxon rank-sum test can be used to test the null hypothesis that two populations have the same continuous distribution.

This test can be used as an alternative to the t-test, when the population data does not follow a normal distribution (Field, 2009).

A Bonferroni correction was also applied, and so all the effects are reported at 0.0625 level of significance. An examination of table 4.3 indicates the strength of differences between scores.

Table 4.3

Wilcoxon test statistic

	Z	Asymp. Sig. (2-Tailed)	P = 0.0625	Stat Sig
GM - TF	-6.609a	.000	0.0625	SIG
AU - TF	-4.894a	.000	0.0625	SIG
SE - TF	-5.785a	.000	0.0625	SIG
EC - TF	-5.414a	.000	0.0625	SIG
SV - TF	-1.297b	.195	0.0625	NON-SIG
CH - TF	-4.012b	.000	0.0625	SIG
LS - TF	-2.727b	.006	0.0625	SIG
AU - GM	-4.726b	.000	0.0625	SIG
SE - GM	-2.389b	.017	0.0625	SIG
EC - GM	-2.374b	.018	0.0625	SIG
SV - GM	-7.342b	.000	0.0625	SIG
CH - GM	-8.836b	.000	0.0625	SIG

LS - GM	-7.835b	.000	0.0625	SIG
SE - AU	-1.641a	.101	0.0625	NON-SIG
EC - AU	-2.572a	.010	0.0625	SIG
SV - AU	-5.035b	.000	0.0625	SIG
CH - AU	-7.366b	.000	0.0625	SIG
LS - AU	-5.961b	.000	0.0625	SIG
EC - SE	-.059a	.953	0.0625	NON-SIG
SV - SE	-5.734b	.000	0.0625	SIG
CH - SE	-7.257b	.000	0.0625	SIG
LS - SE	-7.439b	.000	0.0625	SIG
SV - EC	-6.163b	.000	0.0625	SIG
CH - EC	-7.701b	.000	0.0625	SIG
LS - EC	-6.446b	.000	0.0625	SIG
CH - SV	-1.849b	.064	0.0625	NON-SIG
LS - SV	-1.788b	.074	0.0625	NON-SIG
LS - CH	-.415a	.678	0.0625	NON-SIG

4.3.2 Non-parametric tests - other variables that may influence career anchors

Non-parametric tests were used because data for this study could not meet the requirements of parametric tests. To identify differences between groups, the researcher used the Mann-Whitney test (the non-parametric equivalent of the t-test) to compare two groups. The Kruskal-Wallis (non-parametric equivalent of ANOVA)

was used to identify differences between three or more groups. Where significant results were found, the Mann-Whitney was used for post-hoc comparisons.

The Mann-Whitney (the non-parametric equivalent of the t-test) is a non-parametric test that helps to analyse specific sample pairs for significant differences (Crichton, 1998).

The Kruskal-Wallis test is a well-known non-parametric test which is an extension of the Kruskal-Wallis test, and is generally used to test the median difference in paired data. The test was designed to test the hypothesis on the location or median of a population distribution (Crichton, 1998).

4.3.2.1 Dimension 1 - Gender: The Mann-Whitney test

Table 4.4
Mann-Whitney ranks for Gender

	Q.2 (Gender)	N	Mean Rank	Sum of Ranks
TF	Male	115	73.64	8469.00
	Female	29	67.97	1971.00
	Total	144		
GM	Male	115	73.78	8485.00
	Female	29	67.41	1955.00
	Total	144		
AU	Male	115	73.72	8477.50
	Female	29	67.67	1962.50

	Total	144		
SE	Male	115	69.97	8047.00
	Female	29	82.52	2393.00
	Total	144		
EC	Male	115	71.86	8264.00
	Female	29	75.03	2176.00
	Total	144		
SV	Male	115	71.57	8230.00
	Female	29	76.21	2210.00
	Total	144		
CH	Male	115	71.33	8202.50
	Female	29	77.16	2237.50
	Total	144		
LS	Male	115	70.90	8153.50
	Female	29	78.84	2286.50
	Total	144		

An examination of table 4.5 below shows the output for the Mann-Whitney ranks for Gender as biographical variable. The exact sig. for a two-tailed test was used, as the

Table 4.5

Test Statistics[a] Mann-Whitney ranks for Gender

	TF	GM	AU	SE	EC	SV	CH	LS
Mann-Whitney U	1536.000	1520.000	1527.500	1377.000	1594.000	1560.000	1532.500	1483.500
Wilcoxon W	1971.000	1955.000	1962.500	8047.000	8264.000	8230.000	8202.500	8153.500
Z	-.657	-.736	-.700	-1.451	-.367	-.537	-.675	-.919
Asymp. Sig. (2-tailed)	.511	.461	.484	.147	.714	.591	.500	.358
Exact Sig. (2-tailed)	.514	.464	.487	.148	.716	.594	.503	.361
Exact Sig. (1-tailed)	.257	.232	.243	.074	.358	.297	.251	.180
Point Probability	.001	.001	.001	.000	.001	.001	.001	.001

Grouping variable: Q.2 (Gender)

sample sizes of men and women were not close (29 women versus 115 men) (see Field, 2009). Career anchors do not differ significantly for men and women ($p < 0.05$) and *gender is thus not a predictor of career anchor*.

4.3.2.2 Dimension 2 - Race: The Kruskal-Wallis test

Table 4.6

Kruskal-Wallis ranks for Race

	Q.3 (Race)	N	Mean Rank
TF	African	78	75.82
	white	35	73.84
	coloured	9	47.78
	Asian	22	68.70
	Total	144	
GM	African	78	77.49
	white	35	58.57
	coloured	9	68.44
	Asian	22	78.64
	Total	144	
AU	African	78	67.87
	white	35	78.30
	coloured	9	68.67
	Asian	22	81.27
	Total	144	
SE	African	78	73.37
	white	35	77.51
	coloured	9	68.50
	Asian	22	63.07
	Total	144	
EC	African	78	75.37
	white	35	65.49
	coloured	9	68.39

	Asian	22	75.18
	Total	144	
SV	African	78	77.55
	white	35	64.54
	coloured	9	66.17
	Asian	22	69.84
	Total	144	
CH	African	78	76.71
	white	35	60.23
	coloured	9	66.22
	Asian	22	79.66
	Total	144	
LS	African	78	69.21
	white	35	77.09
	coloured	9	70.83
	Asian	22	77.57
	Total	144	

An examination of table 4.6 above shows the test statistics for the Kruskal-Wallis. There is no statistically significant difference of career anchors for different races ($p < 0.05$) and *race is thus not a predictor of a career anchor*.

Table 4.7

Test Statistics[b,c] Kruskal-Wallis for Race

			TF	GM	AU	SE	EC	SV	CH	LS
Chi-Square			3.90	5.60	2.70	1.75	1.54	2.72	4.70	1.25
df			3	3	3	3	3	3	3	3
Asymp. Sig.			.272	.133	.439	.625	.673	.436	.195	.740
Monte Carlo Sig.			.279	.132	.452	.631	.674	.436	.193	.743
Sig.	99% confidence interval	Lower Bound	.268	.123	.439	.618	.662	.423	.182	.731
		Upper Bound	.291	.141	.465	.643	.686	.449	.203	.754

a. Based on 10 000 sampled tables with starting seed 299883525.

b. Kruskal-Wallis test.

c. Grouping variable: Q.3 (Race).

4.3.2.3 Dimension 3 - Age: The Kruskal-Wallis test

Table 4.8

Kruskal-Wallis ranks for Age

	Q.1 (Age)	N	Mean Rank
TF	26-35 years	65	70.88

	36-45 years	50	75.99
	45 years and older	29	70.10
	Total	144	
GM	26-35 years	65	72.09
	36-45 years	50	78.08
	45 years and older	29	63.79
	Total	144	
AU	26-35 years	65	65.00
	36-45 years	50	79.77
	45 years and older	29	76.78
	Total	144	
SE	26-35 years	65	67.88
	36-45 years	50	76.70
	45 years and older	29	75.62
	Total	144	
EC	26-35 years	65	72.41
	36-45 years	50	72.51
	45 years and older	29	72.69
	Total	144	
SV	26-35 years	65	71.78
	36-45 years	50	82.75
	45 years and older	29	56.45
	Total	144	
CH	26-35 years	65	73.09
	36-45 years	50	76.40
	45 years and older	29	64.45
	Total	144	
LS	26-35 years	65	70.75
	36-45 years	50	74.76

45 years and older	29	72.52
Total	144	

Table 4.9

Test Statistics[a,b,c] Kruskal-Wallis for Age

	TF	GM	AU	SE	EC	SV	CH	LS
Chi-Square	.547	2.174	3.951	1.475	.001	7.366	1.541	.262
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.761	.337	.139	.478	1.000	.025	.463	.877

a. Kruskal-Wallis test.

b. Grouping variable: Q.1 (Age).

c. Some or all exact significances cannot be computed because there is insufficient memory.

Table 4.9 above shows the ranks of the Kruskal-Wallis for age. Table 4.10 below shows the test statistics for the Kruskal-Wallis in terms of age. The only statistically significant result is for SV (service) ($H = 7.366$, $p > 0.05$). The statistically significant result was investigated using the Mann-Whitney test, using the Bonferroni correction ($p = 0.0625$). There were no participants younger than age 26, therefore only group 2, 3 and 4 were compared.

Table 4.10

Ranks of Mann-Whitney for post-hoc comparisons of Age (2 and 3)

	(Age)	N	Mean Rank	Sum of Ranks
SV	26-35 years	65	54.19	3522.50
	36-45 years	50	62.95	3147.50
	Total	115		

Table 4.11

Test Statistics[a] of Mann-Whitney for post-hoc comparisons of Age (2 and 3)

	SV
Mann-Whitney U	1377.500
Wilcoxon W	3522.500
Z	-1.400
Asymp. Sig. (2-tailed)	.161
Exact Sig. (2-tailed)	.162
Exact Sig. (1-tailed)	.081
Point Probability	.000

Grouping variable: Q.1 (Age).

As seen in table 4.11 above, there are no statistically differences of SV (service) for group 2 and group 3.

Table 4.12

Test Statistics[a] Mann-Whitney for post-hoc comparisons of Age (2 and 4)

	SV
Mann-Whitney U	742.000
Wilcoxon W	1177.000
Z	-1.645
Asymp. Sig. (2-tailed)	.100
Exact Sig. (2-tailed)	.101
Exact Sig. (1-tailed)	.050
Point Probability	.000

Grouping variable: Q.1 (Age).

Table 4.12 above shows that there is no statistically significant difference between group 2 and 4 for SV (service).

Table 4.13

Test Statistics[a] Mann-Whitney for post-hoc comparisons of Age (3 and 4)

	SV
Mann-Whitney U	460.000
Wilcoxon W	895.000
Z	-2.703
Asymp. Sig. (2-tailed)	.007
Exact Sig. (2-tailed)	.006
Exact Sig. (1-tailed)	.003
Point Probability	.000

Grouping Variable: Q.1 (Age).

Table 4.13 above shows that there is a statistically significant result (exact = .007) for group 3 and 4 in terms of SV (service). The 36-45 year olds are more likely to endorse SV (service) as a career anchor than those of 45 years and older. To further investigate this finding, the effect size was calculated (z/wortel sample size). The effect size was r = -0.22525, so even though the finding was statistically significant, the effect was small.

4.3.2.4 Dimension 4 - Education: The Kruskal-Wallis test

Only one respondent had a doctorate, and this case was excluded from the following analysis.

Table 4.14

Ranks of Kruskal-Wallis for Education

	(Educ.)	N	Mean Rank
TF	Degree/BTech.	115	70.62
	Honours	6	97.58
	Masters	22	72.25
	Total	143	
GM	Degree/BTech.	115	71.21
	Honours	6	84.00
	Masters	22	72.84
	Total	143	
AU	Degree/BTech.	115	68.21
	Honours	6	80.83
	Masters	22	89.39
	Total	143	
SE	Degree/BTech.	115	72.88
	Honours	6	57.92
	Masters	22	71.23
	Total	143	
EC	Degree/BTech.	115	67.88
	Honours	6	100.25
	Masters	22	85.82
	Total	143	

SV	Degree/BTech.	115	71.07
	Honours	6	77.83
	Masters	22	75.25
	Total	143	
CH	Degree/BTech.	115	69.24
	Honours	6	83.83
	Masters	22	83.18
	Total	143	
LS	Degree/BTech.	115	68.38
	Honours	6	89.50
	Masters	22	86.14
	Total	143	

Table 4.15

Test Statistics[a,b,c] of Kruskal-Wallis for Education

	TF	GM	AU	SE	EC	SV	CH	LS
Chi-Square	2.435	.557	5.144	.757	6.399	.313	2.619	4.536
Df	2	2	2	2	2	2	2	2
Asymp. Sig.	.296	.757	.076	.685	.041	.855	.270	.103

a. Kruskal-Wallis test.

b. Grouping variable: Q.4 (Educ.).

c. Some or all exact significances cannot be computed because there is insufficient memory.

Table 4.15 above shows that there is one statistically significant result for education and EC. To further investigate this result, post-hoc tests using the Mann-Whitney were conducted.

Table 4.16

Test Statistics[a] Mann-Whitney for post-hoc comparisons of education (2 and 3)

	EC
Mann-Whitney U	190.000
Wilcoxon W	6860.000
Z	-1.855
Asymp. Sig. (2-tailed)	.064
Exact Sig. (2-tailed)	.063
Exact Sig. (1-tailed)	.032
Point Probability	.000

a. Grouping Variable: Q.4 (Educ.).

Table 4.16 above shows that there is no statistically significant difference between group 2 and 3 in terms of choice for education (EC) as a career anchor.

Table 4.17

Test Statistics[a] Mann-Whitney for post-hoc comparisons of Education (2 and 4)

	EC
Mann-Whitney U	946.500
Wilcoxon W	7616.500
Z	-1.871
Asymp. Sig. (2-tailed)	.061
Exact Sig. (2-tailed)	.061
Exact Sig. (1-tailed)	.031
Point Probability	.000

Table 4.17 above shows that there is no statistically significant difference between group 2 and 4 in terms of choice for EC (education) as a career anchor.

Table 4.18

Test Statistics[a] Mann-Whitney for post-hoc comparisons of Education (3 and 4)

	EC
Mann-Whitney U	51.500
Wilcoxon W	304.500
Z	-.817
Asymp. Sig. (2-tailed)	.414

Exact Sig. [2*(1-tailed Sig.)]	.427[a]
Exact Sig. (2-tailed)	.430
Exact Sig. (1-tailed)	.216
Point Probability	.010

a. Not corrected for ties.

b. Grouping variable: Q.4 (Educ.).

4.3.2.5 Dimension 5 - Tenure in organisation: The Kruskal-Wallis Test

Table 4.19

Ranks of Kruskal-Wallis for Tenure in organisation

	Q.5 (Ten. in Org.)	N	Mean Rank
TF	Less than a year	19	82.03
	2-5 years	27	69.06
	6-10 years	38	70.00
	11 years or more	60	72.62
	Total	144	
GM	Less than a year	19	81.21
	2-5 years	27	82.59
	6-10 years	38	62.72
	11 years or more	60	71.39
	Total	144	
AU	Less than a year	19	66.03
	2-5 years	27	70.54
	6-10 years	38	68.66

	11 years or more	60	77.87
	Total	144	
SE	Less than a year	19	76.45
	2-5 years	27	69.85
	6-10 years	38	66.75
	11 years or more	60	76.08
	Total	144	
EC	Less than a year	19	80.68
	2-5 years	27	65.89
	6-10 years	38	72.22
	11 years or more	60	73.06
	Total	144	
SV	Less than a year	19	80.11
	2-5 years	27	82.22
	6-10 years	38	62.11
	11 years or more	60	72.30
	Total	144	
CH	Less than a year	19	84.26
	2-5 years	27	69.50
	6-10 years	38	68.84
	11 years or more	60	72.44
	Total	144	
LS	Less than a year	19	73.97
	2-5 years	27	87.07
	6-10 years	38	58.32
	11 years or more	60	74.46
	Total	144	

Table 4.19 above shows that there is no statistically significant result for tenure in terms of career anchor selection.

4.3.2.6 Dimension 6 - Tenure in management: The Kruskal-Wallis test

Table 4.20

Test Statistics[b,c] Kruskal-Wallis for Tenure in management

			TF	GM	AU	SE	EC	SV	CH	LS
Chi-Square			2.036	1.327	.584	.189	.516	1.423	1.154	.470
Df			2	2	2	2	2	2	2	2
Asymp. Sig.			.361	.515	.747	.910	.773	.491	.562	.790
Monte Carlo Sig.	Sig.		.362[a]	.522[a]	.749[a]	.910[a]	.772[a]	.497[a]	.575[a]	.793
	99% confidence interval	Lower Bound	.350	.509	.737	.903	.761	.485	.562	.783
		Upper Bound	.375	.535	.760	.918	.782	.510	.588	.804

a. Based on 10000 sampled tables with starting seed 1310155034.

b. Kruskal-Wallis test.

c. Grouping variable: Q.6 (Ten. in Man.).

Table 4.20 above shows that there are no statistically significant differences among tenure groups in terms of anchor selection.

The only statistical significant difference detected in the five dimensions measured, is:-

- Age – SV (service) with a statistical significant difference of 0.025
- Education – EC (entrepreneurial creativity), with a statistical significant difference of 0.041.

Table 4.21 Test Statistics[b,c] of Kruskal-Wallis for Tenure in organisation

				TF	GM	AU	SE	EC	SV	CH	LS
Chi-Square				1.32	4.56	1.84	1.45	1.42	4.47	1.95	7.89
Df				3	3	3	3	3	3	3	3
Asymp. Sig.				.724	.207	.605	.694	.699	.214	.582	.048
Monte Carlo Sig.	Sig.			.729	.210	.611	.702	.704	.214	.587	.052
	99%	confidence interval	Lower Bound	.717	.200	.598	.690	.692	.203	.575	.047
			Upper Bound	.740	.221	.623	.714	.716	.224	.600	.058

Table 4.21 above shows that there is no statistically significant difference between group 3 and 4 of in terms of choice of EC (education) as a career anchor.

4.4 TEST HYPOTHESIS

H0: Engineers in managerial positions would exhibit technical/functional competence as a dominant career anchor.

For the weighted data, it is found that the most prominent career anchors are LS (lifestyle), followed by CH (challenge), TF (technical/functional), and SV (service). Therefore, the top-three selected anchors, namely LS (lifestyle), followed by CH (challenge) and TF (technical/functional) in the weighted, data could be considered to be equally important anchors for the engineers, with SV (service) being a possible fourth anchor.

In terms of H0, technical/functional competence was found to be a dominant career anchor. *H0 is thus accepted.*

H1: Engineers in managerial positions would exhibit managerial competence as a career anchor.

For the weighted data, it is found that in descending order, engineers least prefer the following career anchors: AU (autonomy), EC (entrepreneurial creativity) and SE (security).The anchor *least likely* to be endorsed by engineers is GM (general management).

Based on the above statistical analysis, general management competence is not found to be a dominant career anchor. *H1 is thus rejected.*

H2: At least 40% of engineers would possess a wide variety of independent career anchors.

For the weighted data, it is found that on average, 76.5% of respondents chose LS (lifestyle), CH (challenge), TF (technical/functional), and SV (service) as the most preferred career anchors. The top-three selected anchors LS (lifestyle), followed by CH (challenge) and TF (technical/functional) in the weighted data, could be

considered to be *equally important anchors* for the engineers, with SV (service) being a possible fourth anchor.

Based on the above statistical analysis, it is found that four career anchors were equally likely to be selected; engineers therefore, do seem to possess a wide variety of largely independent career anchors. *H2 is thus accepted*.

H3: There may be other situational factors that may cause engineers to pursue general management as a career anchor.

The statistical significant difference detected in the five dimensions measured, is age which demonstrated a statistical significant difference of 0.025 towards SV (service), and education which demonstrated a statistical significant difference of 0.041 towards EC (entrepreneurial creativity).

Based on the above statistical analysis, it can be concluded that age, gender, race, education, tenure in organisation and management are not found to significantly influence choice of general management as a career anchor. *H3 is thus accepted*.

4.5 CONCLUSION

In this chapter, the results of the various statistical procedures were documented and observations were made. The results of the descriptive statistics and exploratory analysis were provided.

The results of the *descriptive statistics* revealed that the sample consisted of a non-normal distribution. Both the kurtosis and skewness ranged too far from zero, the mode, the mean and the medians differed, and for some of the scales, multiple modes existed.

From the analyses of the career anchors of engineering managers, it was also found that engineers equally preferred four career anchors, i.e. LS (lifestyle), CH (challenge), TF (technical/functional), and SV (service). Career anchors least preferred by engineering managers were in descending order: AU (autonomy), EC (entrepreneurial creativity), SE (security) – and the anchor least likely to be endorsed by the engineers is GM (general management).

The results of the *exploratory analysis* were found to be statistically not significant, the only statistical significant difference detected in the six dimensions measured were on dimension three (age) and four (education). On dimension three (age), SV (service) presented a statistical significant difference of 0.025. On dimension four (education), EC (entrepreneurial creativity) presented a statistical significant difference of 0.041.

The next chapter covers interpretation of results and recommendations for future research.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this study was to investigate career anchors of engineers who occupy management positions in the South African power utility. The researcher's further aim was to determine whether engineering managers are more prone to have technical/functional career anchors or general management competences. There has been some debate in the past as to whether individuals possess different kinds of career anchors or they have one dominant career anchor that cause them to pursue certain types of jobs. Literature and evidence from this study has confirmed that participants do not have only one career orientation; they are more likely to adopt a diversity of career anchors when making career decisions.

One main and three alternative hypotheses were compiled for the purposes of this study. The hypotheses were as follows:

H0: Engineers in managerial positions would exhibit technical/functional competence as a dominant career anchor.

H1: Engineers in managerial positions would exhibit general management competence as a dominant career anchor.

H2: At least 40% of engineers would possess a wide variety of independent career anchors.

H3: There may be other situational factors that may cause engineers to pursue general management as a career anchor.

In order to assist in investigating the career anchors of engineering managers in the South African power utility, an extensive study was conducted using Schein's (1978) eight career anchors. In chapter 1, the background to the study, emphasized the

importance of knowing one's career anchors when making career decisions in a South African context. The career anchor distribution data from this study is important in the field of psychology, and specifically industrial and organisational psychology because it will help in determining appropriate career development strategies for engineering professionals.

Chapter 2 provides an extensive theoretical framework, which highlights past and current knowledge on the challenges faced by engineers in their transition to managerial positions. Special reference was made to Schein's career anchors theory, which emphasizes the importance of knowing one's career anchors when making career decisions.

In Chapter 3, a detailed discussion of the empirical research was discussed. The method of investigation, the research design, the research process, the sample and the data collection method was highlighted. The Career Orientations Inventory (COI) instrument utilised in the study and the statistical procedures used, were discussed in detail. The research approach was designed in such a way that it could achieve the objectives of the study and adequately address the research hypotheses.

Chapter 4 documented the results of the statistical procedures. A summary of the descriptive and exploratory statistics were presented. Relevant findings and summaries of the statistical information assisted in the acceptance or rejection of the hypotheses. Further statistical analyses also revealed that there were no other situational factors found to be a possible cause for engineers to pursue general management as a career anchor.

This chapter indicates how findings from this study achieved the initial objectives of the study. These findings are based on the literature review and empirical research. Recommendations are made on the basis of the findings from this study. In this chapter, the researcher has also pointed out the implications of the findings, the value and the limitations of the study.

5.2 DISCUSSION OF THE RESULTS

The objective of this study was to investigate the career anchors of engineers who occupy management positions at a South African power utility. The researcher also wanted to determine whether engineering managers were more prone to have technical/functional and/or general management career anchors, or they demonstrate different types of career anchors. To achieve this, the researcher used descriptive and exploratory analyses.

After an examination of their career anchors, it was found that engineering managers have four equally important career anchor preferences. Those career anchors were: LS (lifestyle), CH (challenge), TF (technical/functional), and SV (service). The career anchor least likely to be endorsed by engineering managers was GM (general management). These results show a noticeable shift away from the *talent-based* (technical/functional) career anchor to *needs-based* (lifestyle), and *values-based* (challenge) career anchors. The high preference for the lifestyle career anchor indicates that today's workforce prefer work environments in which they have flexible work arrangements that allows for an increased balance between their professional and private lives. Findings from this study also indicate that engineers in management positions chose the pure-challenge career anchor as their second most-preferred/dominant career anchor. This is an indication that this group is motivated by challenging tasks and would therefore, be most inclined to career opportunities that allow for the development of their knowledge and capabilities.

It is noteworthy to learn from the results that the technical/functional career anchor came on the third place on the list of most-preferred career anchors. Contrary to what the main hypothesis from the researcher was, this study highlights the fact that participants do not possess only one career anchor; they are more likely to adopt a diversity of career anchors. The results showed that general management competence is not a dominant career anchor. General management is in fact, last on the list of preferred career anchors by engineers in management positions. Thus, H1 (engineers in managerial positions would exhibit general management competence as a dominant career anchor) is rejected.

From the results of this study, lifestyle was mostly indicated as a career anchor of choice across all the groups. These findings are in line with the global shift taking place towards an overriding need for an increased balanced professional and family life. As Marshall and Bonner (2003) points out, the possible increase in the number of employees who value lifestyle, will impact significantly on the relationship between organisations and individuals in terms of satisfying employees' work and career values, particularly with more women entering the South African workplace.

The results showed that participants in this study placed a higher value on being in challenging positions. This is generally almost every individual's wish to fulfil amongst others, a need for motivation, achievement and power. The participants in this study showed a preference for authority and power to influence and lead others in the task of making the world a better place to work and live in. This is a significant indicator that provides organisations with a valuable framework to help them offer employees opportunities that are congruent with their career orientations (Coetzee & Schreuder, 2009).

It was noteworthy to learn that the technical/functional career anchor was only the third most-preferred career anchor. This trend indicates that, although it is important for an engineer or engineering manager to be in possession of technical skills, it however does not end there. The fact that the results indicate divergent career anchor preferences by engineers in management positions is a classical case that demonstrates a diverse workforce and work values which prevails in the current globally attuned world of work.

Marshall and Bonner (2003) highlight the importance of a diverse workforce. They contend that organisations need people with divergent career anchors, since this provides organisations with a flexible and diverse workforce. It is evident from the findings that overall emphasis for engineers is not only focussing on one specific career anchor. The fact that they are engineers in management positions, does not mean that they are only technically/functionally- or management-inclined in terms of their career orientations. This however, does not mean to downplay the importance

of developing the general management skills of staff. There is still a need to develop management skills of staff at all levels of the organisation.

There were no situational factors that were found to be the cause for engineers to pursue general management positions. This may however, not be an absolute conclusion; in other instances, perceived financial difficulties, professional limitations and personal obligations may result in increased pressures on an individual to search for better opportunities in management. This is a topic for further research.

5.3 VALUE OF THE STUDY

This study has a theoretical, practical and a methodical value. Within the industrial psychology profession, the study provides a better understanding of a career in engineering. It will help them identify competencies that an engineer view as necessary in his career path. The study adds value towards the improvement of the recruitment & selection strategies as well as leadership development initiatives within the power utility.

5.4 LIMITATIONS OF THE STUDY

This study has provided significant insight into career anchors of engineers in management positions within the South African context. However, some limitations and recommendations must be kept in mind, concerning the findings of this study:

- The data for this study did not meet all the assumptions for parametric statistics, in particular the assumption of a normal distribution of data. Hence, only non-parametric statistics were used for the purposes of this study.

- Social desirability – although all efforts were made to ensure that the candidates understood how to respond honestly in terms of their personal views and not according to what was socially acceptable, possibilities that respondents

attempted to present themselves in a socially desirable or favourable light could not have been omitted.

- Clear questionnaire-completion instructions were provided on the first page. Examples of the instructions can be detected at Appendix A. However, it should be noted that room for error and deviations from the instructions by the candidates could not be ruled out.

- The demographic profile of the sample warrants caution in generalising the results to the larger population. The sample for this study was based on an organisation in South Africa. While the sample represents a large number of engineering professionals working in the South African engineering industry, its membership is not necessarily representative of the general population of engineers.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The research findings from this study provide a preliminary perspective on the value of the Career Orientations Inventory (COI) in measuring employees' inner career orientations. Findings regarding the possibility of multiple dominant career anchors in individuals is worthy of further investigation and consideration. However, further research with a large sample from different organisations in the engineering industry, and perhaps using more than one measure of career orientations, may enhance the generalizability of findings.

Kanye and Crous (2007) conducted research on career orientations. Their findings indicate that employees' inner career orientations are related to their life satisfaction, job/career satisfaction, organisational commitment, performance and motivation, and it is thus suggested that both quantitative and qualitative measures be employed to gain deeper insight into the relationship between individuals' career orientations and career outcomes. Future studies are also required to determine the extent to which the internal career orientations/career anchors of engineering managers as found in

the research done by Kanye and Crous (2007), match the external career options provided by organisations.

The possibility of other moderator variables cannot be ruled out, in other instances perceived financial difficulties, professional limitations and personal obligations may result in increased pressures on an individual to search for better opportunities in management. Since an individual's career anchors evolve through a process of career development by which an individual tests himself/ herself in various job settings, any work-related successes that the individual experiences, strengthen his career anchors in those areas. In understanding these influences, it may also be important for future researchers to investigate the impact of these moderator variables.

5.6 CONCLUSION

The review of the literature and the empirical study by the researcher on career anchors revealed that engineering managers possess different kinds of career anchors. The technical/functional career anchor was found to be one of the dominant career anchors. These results may suggest that clusters of career anchors, rather than a single dominant career anchor, be considered in human resource planning efforts by human resource managers. It is evident from these findings that overall, engineering managers are not only focussing on one specific career anchor; they rather prefer to have a broader organisational outlook in order to satisfy their career/professional needs. This confirms the need for assessing the inner career orientations of employees, as these provide valuable information regarding the motives and values driving individuals' career decision-making.

To achieve individual and organisational effectiveness, human resource professionals need to identify individual dominant career anchors and match these anchors with human resource initiatives. If human resource planning is to be viewed as a total systems approach, both the organisation and the individual must be involved in the planning, implementation and evaluation of the human resource programme. Training and development functions within organisations also need

relevant models to guide and encourage their employees to make career decisions effectively. By doing this effectively, it will benefit the individual as well as the organisation.

Human resource practitioners and psychologists need to understand the human component that needs to be managed during human resource planning, in order to achieve optimum effectiveness in the organisation. Understanding the typology of an organisation's employee mix is very important for human resource planning and development. The results of this study suggest that organisations should not assume that the most prevalent dominant career orientations of engineering managers are managerial and technical/functional.

This may be an indication that people's intentions to pursue a particular type of employment may sometimes not only be a function of an individual's dominant career anchor, but can also be influenced by factors such as the feasibility or the accessibility of the career opportunity. In addition, a number of career-related preferences, values, skills and attitudes may influence people's career anchors or career orientations. Organisations need to find a way to inspire, motivate, and appropriately reward their employees.

CHAPTER 6

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APPENDIX A

INVITATION E-MAIL

APPENDIX B

COI (Schein, 1990) SCORING KEY

COI (Schein, 1990)-SCORING KEY

TF	GM	AU	SE	EC	SV	CH	LS
Questions	Questions	Questions	Questions	Questions	Questions	Questions	Questions
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40

TF: Technical/Functional
GM: General management
AU: Autonomy
SE: Security
EC: Entrepreneurial creativity
SV: Service
CH: Challenge
LS: Lifestyle

APPENDIX C

PERMISSION TO CONDUCT RESEARCH IN ESKOM

Faculty of Economic and Management Scientists

HR Shared Services Manager
Mr Takalani Musekwa
Megawatt Park
Sunninghill

Please receive hereby my formal request to conduct research in Eskom*

CAREER ANCHORS OF ENGINEERS IN MANAGERIAL POSITIONS IN THE SOUTH AFRICAN POWER UTILITY

Research for Masters in Industrial Psychology: Human Resource Management
Department - University of Pretoria

Background to the study

Research about the role of career anchors in making career decisions dates back to the 1970s. In studying careers longitudinally, Schein (1978; 1985) found that during career development most individuals form a strong self-concept which he called a 'career anchor'. Schein maintained that a career anchor keeps an individual internal career intact even when they experience major changes in their external career. An *internal career* is a subjective sense about where one is going in work life, as contrasted with the 'external career' which is more about formal stages and roles as defined by the organisation in respect of what an individual can expect in the occupational structure (Schein, 1990).

Several studies on career perceptions were conducted in western countries with minimal studies conducted in non-western societies. Nonetheless findings from both national (Coetzee 2007; Coetzee and Bergh 2008; Coetzee and Schreuder 2002; 2007; 2008; Coetzee, Schreuder and Tladinyane, 2007; Coetzee, Schreuder and Bergh, 2008, and international studies (De Long 1982; Slabbert, 1987; Feldman and

Bolino, 2000; Marshall and Bonner, 2003; Russell, Morris, Stocks and Graves, 2003) emphasize the importance of career anchors in making career decisions. These studies have revealed that not one but several career anchors form an individual's preference for certain occupations or careers.

Objectives of the study

- To explore career anchors of engineers who occupy management positions in a South African power utility.
- To investigate whether technical/functional competencies are dominant career anchors of engineering managers.
- To establish whether general management competences are dominant career anchors of engineers in management positions.

Significance of the study

The rationale for this research project was to determine whether technical and general management are dominant career anchors of engineering managers. The study will add value towards the improvement of the recruitment & selection strategies as well as leadership development initiatives within the power utility. In the industrial psychology profession, findings from this study will add value in career development, career guidance and counselling practices which will in turn assist individuals identify career opportunities that match their career ambitions. It will assist the human resource professionals gain more understanding about the career of an engineer. It will help them identify competencies that an engineer view as necessary in his career path.

Process

The process will involve the following:-

1. Granting of permission by the Public Utility's further studies committee.
2. Identification of 300 middle-engineering managers.

3. Informed consent and declaration from managers indicating their willingness to participate in the research will be sought (see attached the declaration form).
4. Electronically conduct research by Group Wise.
5. Complete the dissertation with the University of Pretoria.
6. Share the results with the Public Utility regarding the findings.

Instruments

The overall study design will require that individual engineering managers complete a biographical questionnaire, the Career Orientations Inventory (COI.

Confidentiality

Confidentiality will be maintained throughout the study, by ensuring that information remains anonymous. All individual information will be coded and at no time will the personal identity of participants be revealed. Individual profiles will be viewed only by the researcher. The information provided by this study may be used for research purposes, including publications in research journals. This condition will be declared to the participants and they will be assured that their names will be kept confidential and will not be disclosed in the reporting of results.

Voluntary Participation

Respondent involvement and participation will be strictly voluntary. Participants will have the right to withdraw from the study at any time they choose without any negative consequences.

APPENDIX D

LETTER OF CONSENT

Faculty of Economic and Management Sciences

Informed consent for participation in an academic research study

Dept. of Economic & Management Sciences

Career Anchors Of Engineers In Managerial Positions In The South African Power Utility

Research conducted by:
Ms N. Buthelezi (28419805)
Cell: 0738866617

Dear Respondent

You are invited to participate in an academic research study conducted by Ms Ntombizodwa Buthelezi, a Masters student from the Department of Economic & Management Sciences at the University of Pretoria.

The purpose of the study is to investigate the career anchors of engineers who occupy management positions at a South African power utility.

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. You cannot be identified in person based on the answers you give. Your identity will however be revealed as your response will be sent via e-mail. The researcher undertakes to keep this information confidential and will not be linked to your answers whatsoever.
- Your participation in this study is very important to me. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the attached questionnaire as completely and honestly as possible. This should not take more than **5 minutes** of your time.
- The results of the study will be used for academic purposes, may be used for leadership development purposes in Eskom, and may also be published in an academic journal. Participants may be provided with a summary of our findings on request.
- Please contact my supervisor, Professor K. Stanz, on 012-420 3074, e-mail address – karel.stanz@up.ac.za, if you have any questions or comments regarding the study.

Please sign the form by putting your name on the respondent's sisgnature space to indicate that:

- You have read and understood the information provided above.
- You give your consent to participate in the study on a voluntary basis.

Respondent's signature **Date**