CAUSES AND CONSEQUENCES OF THE SHORTAGE OF ELECTRICAL ARTISANS AT ESKOM

By

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DECLARATION

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In accordance with Rule G4.6.3, I hereby declare that the above-mentioned treatise is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

SIGNATURE:

DATE:
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ABSTRACT

The aim of this research was to examine the causes and consequences of the shortage of electrical artisans at Eskom, using the Southern Region as a case study.

Eskom used to be one of the leading public enterprises in the training of artisans to fulfil its own demand as well as to meet industry demand. This research reveals that this is no longer the case.

Eskom Southern Region, a sub-division of Eskom Holdings, employs about 1700 employees. More than three quarters of these employees are employed in departments that utilise mostly electrical artisans. Natural attrition and the curtailment on the number of employees indentured and trained as electrical artisans has presented the Eskom Southern Region with a skills acquisition and retention challenge.

Against this background, the study sought to discover how far Eskom Southern Region implements training and development interventions and recruitment and retention strategies in response to skill shortages.

The study is based on a review of literature on skill shortages, a questionnaire opinion survey on skill shortages completed by employees at Eskom Southern Region, document study, and interviews with relevant stakeholders.

The empirical study confirmed the findings of the research and skills shortages were identified for particular positions employing electrical artisans. The results show worsening skill shortages and hard-to-fill vacancies.

The study proposes recommendations that encompass strategic responses, workplace-based strategies, and training-based strategies to address the shortage of electrical artisans.

Key terms: Skill shortages, electrical artisans, Eskom Southern Region.
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CHAPTER ONE

PROBLEM STATEMENT AND SCOPE OF THE STUDY

1.1 INTRODUCTION

The Skills Development Act of 1998, which proposed the establishment of Sector Education and Training Authorities (SETAs), and the government’s Skills Development Strategy for Economic and Employment Growth in South Africa, released in 2001, were intended as mechanisms for delivery on the skills that the country requires. However, since their establishment, SETAs have been dogged by claims of non-delivery and mismanagement. Criticism and scepticism about their ability to deliver increased in early 2006, at the time of the introduction of government’s Accelerated and Shared Growth Initiative for South Africa (ASGISA), which identified the skills shortage as the most pressing constraint on the economy and biggest impediment to achieving 6 percent growth. According to Grawitzky (2006), the launching of the Joint Initiative on Priority Skills Acquisition (JIPSA), a key component of ASGISA, reflects the failure at various levels to drive the government’s national skills development strategy and ensure coordination between demand and supply of skills in the economy.

In a report prepared by the University of Cape Town’s Development Policy Research Unit for JIPSA, in May 2007, Daniels (2007) highlights government’s own shortcoming in having defined skills shortages without taking into account their relationship to productivity in the firm. She notes that this has resulted in disputes between government departments (e.g., Department of Labour, Department of Home Affairs, etc.) over the precise numbers of occupational skills shortages. This particular shortcoming could also be a factor in the apparent slow response by industry to the skills shortage problem.
1.2 MAIN PROBLEM STATEMENT
The purpose of this study is to examine the causes and consequences of the shortage of electrical artisans at Eskom Distribution.

The main research question to answer is:
Is the Southern Region of Eskom Distribution Business addressing the skills shortage problem with specific focus on electrical artisans?

1.3 SUB-PROBLEMS
An analysis of the main problem within the context of background reading allows for identification of the following sub-problems:

1. At what level of skill and/or position does the greatest shortage of electrical artisans exist?
2. What do stakeholders in Eskom’s Southern Region believe is the cause of the shortage of electrical artisans?
3. What does research reveal about the role of the apprenticeship system in Eskom’s Southern Region?
4. Has Eskom Southern Region implemented effective Learnerships to address the shortage of electrical artisans?
5. What are the formal education and training interventions employed by Eskom’s Southern Region to reduce the skill shortages?
6. What other internal strategies are being applied by Eskom Southern Region to resolve the skill shortage of electrical artisans?

1.4 DELIMITATION OF RESEARCH
The parameters within which this study is conducted are defined with the purpose of creating a manageable research structure.

Among the divisions that make up Eskom, South Africa’s electric utility, are three major divisions, namely, Generation, Transmission, and Distribution. This study will be limited to the Distribution Division which is a key role-player in the Electricity Distribution Industry (EDI). This division of Eskom is
made up of six identical regional distributors. The study will focus on one of these distributors, the Southern Region which includes areas in the Eastern Cape in and around Port Elizabeth, East London, Mthatha, Queenstown etc. The study will be limited to the skills shortage problem within the skill category of electrical artisan (electrician).

1.4.1 Organization to be researched

The study will be limited to Eskom Distribution, Southern Region.

1.4.2 Geographical demarcation

The case study company is the Southern Region of Eskom Distribution which stretches from Flagstaff in the east to Uniondale in the west; and also from the southern coastline (Port Elizabeth) in the south to the Orange River (Aliwal-North) in the north. The regional head-office is based in East London.

1.4.3 Sector Education and Training Authority Demarcation

The Electricity Distribution Industry is the industry that connects electricity to customers, specifically quantifying the distribution of electricity to the customers through the installation of meters. Eskom Distribution falls under the Energy SETA (ESETA), and the case study will be limited to this sector.

1.5 DEFINITION OF SELECTED CONCEPTS

1.5.1 Shortage

Skill shortage will be defined generally as meaning shortages that “exist when employers are unable to fill or have considerable difficulty in filling vacancies for an occupation, or specialized skill needs within that occupation, at current levels of remuneration and conditions of employment, and reasonably accessible location” (DEST, 2002:3).

1.5.2 Skill

In the report on the Skills Development Strategy for Economic and Employment Growth in South Africa (2001), ‘skill’ is defined as “applied competence”. ‘Applied competence’ is the overarching term for three kinds of competence:
• Practical competence
  - Our demonstrated ability to perform a set of tasks.
• Foundational competence
  - Our demonstrated understanding of what we or others are doing and why.
• Reflexive competence
  - Our demonstrated ability to integrate or connect our performances with our understanding of those performances so that we learn from our actions and are able to adapt to changes and unforeseen circumstances.

1.5.3 Skills gap
A skills gap describes a situation where existing employees do not have the required qualifications, experience and/or specialised skills to meet the firm’s skill needs for an occupation (DEST, 2002:3). The key for identifying a skills gap against an occupation is that the gap can be addressed through a skills program-type intervention (MQA Skills Guide, 2008:5).

1.5.4 Scarce Skills
Scarce skills refer to those occupations in which there is a scarcity of qualified and experienced people, currently or anticipated in the future either (a) because such skilled people are not available or (b) they are available but do not meet employment criteria (DoL, 2006).

This scarcity can arise from one or a combination of the following, grouped as relative or absolute:

(i) Absolute scarcity: suitably skilled people are not available in the labour market. Specific contexts in which absolute scarcities may arise include:
  • A new or emerging occupation, i.e. there are few, if any, people in the country with the requisite skills (qualification and experience) and education and training providers yet to develop learning programs to meet the skills requirements.
• Firms, sectors and even the country are unable to implement planned growth strategies because productivity, service delivery and quality problems are directly attributable to a lack of skilled people.

• Replacement demand would reflect an absolute scarcity where there are no people enrolled or engaged in the process of acquiring the skills that need to be replaced (DoL, 2006).

(ii) Relative scarcity: suitably skilled people are in fact available in the labour market but they do not exhibit other employment criteria, for example:

• Geographical locations, i.e. people are unwilling to work outside of urban areas.

• Equity considerations, i.e. there are few if any candidates with the requisite skills (qualifications and experience) from specific groups available to meet the skills requirements of firms and enterprises.

• Replacement demand would reflect a relative scarcity if there are people in education and training (formal and work-place) who are in the process of acquiring the necessary skills (qualification and experience) but where the lead time will mean that they are not available in the short term to meet replacement demand (DoL, 2006).

### 1.5.5 Critical Skills

Critical skills refer to specific key or generic and “top-up” skills within an occupation. In the South African context there are two groups of critical skills:

• Key or generic skills are those skills which enhance performance, and which apply to all occupations. They would include cognitive skills (problem solving, learning to learn), language and literacy skills, mathematical skills, ICT skills and working in teams.

• Particular occupationally specific “top-up” skills required for performance within that occupation to fill a “skills gap” that might
have arisen as a result of changing technology or new forms of work organisation (DoL, 2006).

1.5.6 Core Skills
They are occupations which are core to production and operations. They are essential to the business, and without them the organisation cannot perform (MQA, 2008).

1.5.7 Priority Skills
These are occupations which are essential to economic growth, and whose scarcity is constraining economic growth (MQA, 2008).

1.5.8 National Qualifications Framework (NQF)
The NQF is the qualifications framework that governs all levels of formal education in South Africa. It comprises eight qualification levels, the first four of which are associated with formal schooling. Level 5 relates primarily to university of technology pre-degree qualifications such as diplomas and certificates. Level 6 refers to tertiary-level undergraduate degree qualifications. Levels 7 and 8 are associated with postgraduate qualifications (Kraak and Press, 2008:xiv).

1.5.9 Formal education
Formal education is classroom-based and provided by trained teachers.

1.5.10 Basic technical qualification
For the purpose of this study, basic technical qualification will refer to any theoretical qualification with an N2, N3 or N4 certification. It will not include any practical training towards qualification in a trade.

1.5.11 Electrical artisan trade
Whilst the duties of an electrical artisan normally involve mainly manual work, their skills require a fairly high degree of scientific and engineering knowledge and a considerable amount of experience in the electrical trade. (http://www.careerexpo.co.za/viewcareer.asp?code=252).
Electrical artisans in South Africa are trained by companies such as Sasol, Spoornet, Harmony Gold Mine, Municipalities, and Eskom to mention but a few. All these companies fall under some type of industry such as the Petro-Chemical Industry, Mining Industry, and Electricity Distribution Industry. (http://www.ecasa.co.za/courses/index.asp).

Electrical artisans trained by a specific company in a specific industry could be trained as anyone of the following:

- Electrician
- Electrician Engineering
- Electrician Construction
- Electrician Mining
- Millwright

The tasks of the electrical artisan in the workplace could entail:

- Installation
- Maintenance
- Repairs
- Servicing
- Operating of, for example, control systems, generators, transformers, power-lines, etc.

1.5.12 Skilled Manual Trades
These refer to a broad range of job titles that require workers to possess specialized skills, traditionally learned over a period of time as an apprentice (Manpower Inc Talent Survey, 2008).

1.5.13 Different Artisan Training Routes
A trainee wishing to qualify as an artisan may register on one of the following training routes (Government Gazette No. 30571, 2007):

(i) Apprenticeship
A learner that registers as an apprentice with a SETA on an NQF registered artisan trade qualification and spends between 2 and 4 years on a single apprenticeship contract linked to a competency based modular learning
program that ends in a trade test. This pathway has one entry and one exit point. Certification occurs at the end of the single contract period. Registration as an artisan occurs after successful completion of a trade test (Government Gazette No. 30571, 2007).

(ii) Learnership
A learner that registers as a learner with a SETA on an NQF registered artisan trade qualification that spends between 2 and 4 years on multi-learnership year contracts linked to a competency based modular learning program that ends in a trade test after completion of the highest NQF level qualification that needs to be achieved before undergoing a trade test. This pathway has multi-entry and multi-exit points. Certification occurs at the end of each completed contract period. Registration as an artisan occurs after successful completion of a trade test (Government Gazette No. 30571, 2007).

(iii) Internship/Skills Program
A Learner that has a relevant trade related “National Certificate: Vocational (NCV)” that registers on an internship or a skills program with a SETA on an NQF registered artisan trade qualification and that spends a pre-determined period of time in the workplace on a single internship or skills program contract that ends in a trade test. This pathway has two entry and two exit points. Certification occurs at the end of the NCV and at the end of the internship or skills program. Registration as an artisan occurs after successful completion of a trade test (Government Gazette No. 30571, 2007).

(iv) Recognition of Prior Learning
A learner that registers as Recognition of Prior Learning (RPL) learner with the National Institute for Artisan Development on an NQF registered artisan trade qualification and that spends a pre-determined period of time on a single RPL contract that ends in a trade test. The RPL contract will guide the learner in the compilation of a portfolio of evidence that is assessed prior to
undergoing the trade test. Certification occurs at the successful assessment and moderation of the portfolio of evidence. Registration as an artisan occurs after successful completion of a trade test (Government Gazette No. 30571, 2007).

1.5.14 Relevant Departments in Eskom

(i) Field Services
The department is responsible for the construction, operation and maintenance of electrical power systems in order to ensure continuity of supply to consumers. It employs the majority of electrical artisans

(ii) Major Engineering Works
The department fulfils the role of internal construction contractor. It is responsible for the construction and refurbishment of power-lines and substations. Some of the artisans are employed

(iii) Network Services
This department is responsible for ensuring safe and optimally designed and maintained power systems to meet the region’s needs. It employs mostly technicians and engineers who work very closely with the electrical artisans in both Field Services and Major Engineering Works.

(iv) Human Resources – Recruitment
This department is responsible for offering a recruitment service to all line management functions.

(v) Human Resources – Training and Development
This department manages and directs all education, training and development within Eskom Southern Region.

1.5.15 The Paterson Job Grading
Job grading is the rating of jobs according to a specifically planned procedure in order to determine the relative worth of each job. Selected
Paterson Grades used at Eskom and referred to in this research are described below.

Table 1.1 Paterson Job Grading

<table>
<thead>
<tr>
<th>Paterson Band</th>
<th>Decision Level</th>
<th>Task Skill Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMU</td>
<td>Middle Management</td>
<td>Tactical:</td>
</tr>
<tr>
<td>MMM</td>
<td>Interpretative Decisions</td>
<td>• Middle Management</td>
</tr>
<tr>
<td>PPP</td>
<td>Professional Qualified and Experienced Specialist</td>
<td>• High Level/Advisory/Supervisory</td>
</tr>
<tr>
<td>PPG</td>
<td>Tactical:</td>
<td>Specialised:</td>
</tr>
<tr>
<td>PA0</td>
<td>Skilled, Technical and Academically Qualified Employees</td>
<td>• Skilled</td>
</tr>
<tr>
<td>CCU</td>
<td>Junior Specialists</td>
<td>• Technical</td>
</tr>
<tr>
<td>CCL</td>
<td>Supervisors</td>
<td>• Specialist</td>
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<td></td>
<td>Foremen</td>
<td>• Senior Supervisory</td>
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<td></td>
<td>Superintendents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Routine or Process Decisions</td>
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<tr>
<td>BBU</td>
<td>Discretionary/Operative Decisions</td>
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<td>BBL</td>
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<td>• Semi-Skilled</td>
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<td>• Junior Supervisory</td>
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Source: Government Gazette No. 29759, 2007

1.6 SIGNIFICANCE OF THE RESEARCH
The prevailing skills shortage problem in South Africa has the potential to undermine the country’s ability to execute long-term development projects. In an effort to address the skills shortage in the country, the government introduced ASGISA in early 2006, with one of its key components being JIPSA. The main aim of JIPSA is to bring together social partners to act on
immediate and medium-term skills needs, particularly skilled professionals,
managers and artisans (JIPSA Report, 2007).

As a state-owned enterprise, Eskom is one of the most important partners in
JIPSA and is working with both the Department of Public Enterprises and
the Department of Minerals and Energy to develop strategies that will
enhance the utility’s ability to impact on ASGISA initiatives.

It is the objective of this case study to investigate the contributing factors to
the skill shortage problem at an Eskom business unit level, and strategies
that can be applied to alleviate the situation.

1.7 MOTIVATION FOR RESEARCH
The Electrical Contractors Association of South Africa has identified
electrical artisan skill as a scarce skill. The Energy SETA’s Sector Skills Plan
for 2007-2008 (ESETA Sector Skills Plan Update, 2007 : 16) refers to the
loss of electricians to electricity companies in Europe and Australia as being
a major threat to the South African economy. Manpower Inc recently
released the results of the annual talent shortage survey, revealing that 38
percent of employers across South Africa are finding it more difficult to fill
jobs. The top three skills most in demand are: Skilled Manual Trades
(primarily electricians, carpenters/ joiners or welders), Engineers, and
Accounting and Finance Employees (Manpower Inc Talent Survey, 2008).

The overriding interest in wishing to pursue this study is to understand the
skills shortage problem at company level. As electricity demand in South
Africa is rapidly catching up with supply capacity, the government is still
pressing forward with the establishment of the Regional Electricity
Distributors (REDs). Other challenges to the REDs will include shortages of
skills, especially at the operational level of an electrician. As Eskom is a
major stakeholder in the EDI, it should help this industry to know where in
the Eskom Distribution Business the shortages exist, (i.e., if they exist, in
what occupations), the magnitude of the problem, and how the problem can be alleviated.

1.8 RESEARCH DESIGN
The broad research methodology is described in this section.

1.8.1. Research Methodology
The following procedure will be adopted to solve the main and sub-problems:

1.8.2. Literature Review
A preliminary literature review has been conducted. A full review of published and unpublished works relevant to the topic will be undertaken to ensure the integrity of the study and to enhance understanding of the skills shortage problem at the case study company.

1.8.3. Empirical Study
A questionnaire will be compiled for completion by selected employees, supervisors/managers and human resources personnel.

In addition to the questionnaire, interviews will be conducted with management, union officials, company personnel involved in skills development, as well as technical college administrators.

The purpose of the questionnaire and interviews will be to address in more detail the research questions.
1.8.4. Data Analysis
The data collected will be analysed through coding which should allow for ease of summarising, categorising, and identifying of patterns or themes that may emerge (Collis & Hussey, 2003).

1.8.5. Development of a conclusion
The results of the literature survey and the empirical study will be integrated to determine the potential strategies needed for assuring an adequate pool of skilled electricians to sustain the business of electricity distribution in Eskom Southern Region.

1.9 PROPOSED PROGRAM OF STUDY
Flowing from this first chapter, the succeeding chapters are designed to include the following:

Chapter Two: The review of existing literature on electrical skills shortages.

Chapter Three: The research methodology which will entail the use of a questionnaire and interviews.

Chapter Four: Presentation and analysis of the results from the questionnaire.

Chapter Five: An integration of results from the interviews and document study with findings from the literature study and empirical study.

Chapter Six: Recommendations and conclusions.
1.10 SUMMARY

In Chapter One, the purpose of the study and the research questions were introduced. The significance of the study and motivation for it were covered. Key terms and concepts used in the research have been defined. Thereafter, an outline of the proposed research study program is presented which is to be used to resolve the main problem and sub-problems.

In Chapter Two the researcher will conduct a literature review. The review will consist of a detailed interrogation of the skills shortage problem, in general, and the shortage of electricians at Eskom Distribution Southern Region in particular.
CHAPTER TWO
TOWARDS ESTABLISHING A PRACTICAL UNDERSTANDING OF SKILL SHORTAGES

2.1 INTRODUCTION
This chapter will focus primarily on providing a theoretical perspective on electrical artisan skill shortages. The review of literature on the concept of electrical artisan skill shortages has revealed alternative definitions of shortage and helped identify types of skill shortages. The review has also highlighted a number of indicators that assist in recognising the existence of a skill shortage situation. Current production activities of a firm are analysed, from the perspective of an economist, with shortages being defined in the internal labour market and outlining how these spill over into the external labour market. The understanding of skill shortages is further enhanced with an example using medical doctors.

2.2 DEFINITION OF SKILL SHORTAGES
Various studies provide a theoretical framework explaining the concept of skills imbalance (shortage or surplus) and its associated consequences. Some of those reviewed include Bosworth, Dutton and Lewis (1992), Shah and Burke (2003), Australia’s Department of Employment and Workplace Relations (2005), Richardson (2006), and a study sanctioned by New Zealand’s Department of Labour (2006). This section will attempt to explain what skills are, and discuss the various meanings of skill shortages.

2.2.1. What are Skills?
Shah and Burke (2003:5) assert that the lack of a common understanding of what ‘skill’ actually means can make it problematic to define skill and can obscure identification of problems, their causes and possible solutions. The Concise Oxford Dictionary (1995) defines skill as “expertness, practised ability, facility in an action; dexterity or tact”. A literature review reveals that according to some researchers, the meaning of skill would differ with the context in which it is used. According to the report on the Skills Development Strategy for
Economic and Employment Growth in South Africa (2001), skill is defined as ‘applied competence’. Applied competence is the overarching term for three kinds of competence:

- Practical competence: meaning, our demonstrated ability to perform a set of tasks
- Foundational competence: meaning, our demonstrated understanding of what we or others are doing and why
- Reflexive competence: meaning, our demonstrated ability to integrate or connect our performances with our understanding of those performances so that we learn from our actions and are able to adapt to changes and unforeseen circumstances.

Shah and Burke (2003) define skill as an ability to perform a productive task at a certain level of competence. As a skill is related to a particular task, a person who does not possess such a skill is unlikely to be able to perform this task or will be less productive than a person who possesses this skill. Skills are normally associated with a qualification and its achievement through formal education and training. According to Australia’s Department of Employment and Workplace Relations (DEWR) (2005) the term skill, when applied to individuals, usually denotes knowledge or ability, both of which are more or less acquired by people through education, training and experience at work. However, skill may also refer to the requirements of a job, in which case it is best viewed as a property of the task rather than the individual. When applied to occupations, skill often denotes prestige or social status, which may be loosely associated with practitioners’ abilities or the tasks they perform.

There are generally four dimensions of skills:

- motor skills: for example, the degree of dexterity;
- perceptual skills: sensing, measuring and judging;
- conceptual skills: abstracting, calculating and inferring; and
- discretionary skills: decision-making and responsibility.
In addition to the above, the classification of skills is either general or specific although the distinction between the two is often hazy. General skills are assumed to be transferable or portable across a wide array of occupations. These may include those general skills that are now known as generic including basic literacy and numeracy, but increasingly computer literacy. These skills are referred to as the basic generic skills. Specific skills on the other hand are more industry, firm or occupation specific. Other skills such as employability skills are often considered generic in nature.

Employability skills are defined as ‘skills required not only to gain employment, but also to progress within an enterprise so as to achieve one’s potential and contribute successfully to enterprise strategic directions’ (DEWR, 2005:2). Employers consider that employability skills are as important as job-specific or technical skills. Employers will seek those employability skills that are most important to their business and will choose workers who are strong in these areas, thereby leading to improved matching of jobs and jobseekers, better job satisfaction and more productive firms.

Firms often realise that to achieve a high level of productivity they need people who can communicate, work with other people, solve problems, show initiative, plan and manage their own workload; people who are prepared to continue to work; and who know how to use new technology. Employability skills are of two facets: generic skills and personal attributes (for example, loyalty, enthusiasm, motivation, and sense of humour). The DEWR (2005) research highlights the following as known generic skills, and how they contribute to the firm:

- communication: productive and harmonious relations between employees and customers
- teamwork: productive working relationships and outcomes
- problem-solving: productive firm/enterprise outcomes
- initiative/enterprise: innovative ideas and outcomes
- planning/organisation: long-term and short-term strategic planning for the enterprise
- self-management: employee satisfaction and growth
Towards Establishing a Practical Understanding of Skill Shortages

- learning: improvement and expansion in employee and company operations and outcomes
- technology: more effective work practices.

Bosworth, Dutton and Lewis (1992) warn of the ever present possibility of the term ‘skill’ being open to a number of interpretations by employers. To some employers it may refer to the ability to learn tasks rather than an acquired skill. Other employers may place a higher value on behavioural skills exhibited at an interview rather than on certified skills. This can happen when a particular certified skill is common among many applicants or its quality is in doubt. It may also happen that the recruiter is looking for a particular type of person, perhaps in his or her own image, rather than for the skills necessary to undertake a particular job.

Shah and Burke (2003) argue that skills can also disappear over time, with new skills needing to be developed because of technological and organisational changes. The other important source of skill erosion, Shah and Burke (2003) further argue, is underutilisation of the skill thereby leading to the skill being forgotten. They point out that, in this regard, the erosion of skills is very different to the depreciation of physical capital, which occurs because of the wear and tear from the use of equipment or through exposure to the environment over a long period. They advocate that, as a general rule, skills have to be maintained by regular use.

2.2.2. Meanings of Skill Shortages

As Shah and Burke (2003:6) attempt to elucidate the concept of ‘skill’ and its different dimensions they note that some notions of skills shortages have to do with the absence of particular skills among existing employees in a firm rather than a shortage of numbers of people required for work. This reveals the different meanings associated with the term ‘skills shortages’. According to Shah and Burke (2003) three different concepts ought to be
defined first before any discussion on the shortage of skills, these being skills shortages, skills gaps, and recruitment difficulties.

2.2.2.1. Skills Shortages
Skills shortages exist when the demand for workers for a particular occupation is greater than the supply of workers who are qualified, available and willing to work under existing market conditions, and if the supply is greater than demand, then there is a surplus (Shah & Burke, 2003:v). According to an Australian government report on skill shortages (DEWR, 2005:3), shortages are typically encountered for specialised and experienced workers, and can happen at the same time as a time of relatively high unemployment overall, or in the particular occupation. The report further states that it is possible for an occupation to be in shortage even though not all specialisations are in shortage. Occupations may be in shortage in particular geographical areas and not in others. DEWR (2005) indicates that, generally, skills shortages would involve skills that take a significantly long training time to develop.

According to Bosworth, Dutton and Lewis (1992) economists might regard a shortage of any kind as a temporary disequilibrium between demand and supply which, given time, could be overcome by a price adjustment. This was illustrated by using an example of a temporary shortage of word processor operators that might have arisen due to an increase in demand before supply had time to adjust. An increase in the relative wage of word processor operators would encourage more typists to acquire the necessary skills, because the reward for doing so would have increased. At the same time, employers would find that the investment in training yielded benefits to the firm. However, if wage differentials failed to adjust, if individuals were unaware of the wage differential being paid to word processor operators, or if employers were reluctant to invest in a general skill which would be equally valuable to other firms that did not train, then a shortage of word processor operators might persist.
Towards Establishing a Practical Understanding of Skill Shortages

The above example may serve to highlight the different concepts in the definition of skills shortages. Shah and Burke (2003) are of the view that a shortage might be seen to exist for the employer if there were individuals who could undertake the task but not to the employer’s expected standard or speed of operation. According to these authors (Shah & Burke, 2003), this could happen, in a tight labour market, where employers accept applicants whose skills do not match the ‘ideal’, in which case from the employers’ perspective a shortage exists, but from a market perspective the vacancies have been filled and therefore no shortage exists. The converse would be true, if, in a slack labour market, employers fill vacancies with over-qualified people, and then the market may not show an imbalance. Also, employers might perceive that a shortage existed if they offered wages which were low or not market related and/or there were unattractive conditions of employment. A rise in the relative wage or an improvement in working conditions might overcome this shortage and restore equilibrium (Bosworth, Dutton & Lewis, 1992:2).

Bosworth, Dutton and Lewis (1992) contend that even when market signals are picked up from both the demand and supply sides, it may take some time to eliminate a skill shortage because of training lead times. They paint the scenario of both the training market and the labour market starting from a situation of equilibrium, followed by an unexpected increase in demand for a particular skill, and the effect being an increase in the relative wage of the skill in short supply. In this scenario, the consequence will be that workers wishing to acquire the skill will initially not be able to find training places. Likewise, employers wishing to support training will find no spare capacity. The suggestion from Bosworth, Dutton and Lewis (2003) is that an increase in demand for training will force a rise in the relative price of training in that particular skill and that this will eventually attract the necessary resources.

2.2.2.2. Skills Gap

A skills gap describes a situation where existing employees do not have the required qualifications, experience and/or specialised skills to meet the firm’s skill needs for an occupation (DEST, 2002:3). Workers may be under-skilled
Towards Establishing a Practical Understanding of Skill Shortages

relative to some desired level of performance for certain tasks, or may not have up-skilled for emerging skill requirements. It is important to note that skill gaps do not only refer to the absence of formal qualifications. Employees in an occupation may have the necessary vocational qualifications for the occupation, but not the specialised knowledge, skills and experience needed to adapt to new technology and new methods of working.

2.2.2.3. Recruitment Difficulties

Recruitment difficulties describe a situation when employers cannot fill vacancies although there is an adequate supply of potential workers in the labour market with the appropriate skills. There could be a variety of reasons for this situation. Shah and Burke (2003) cite the following reasons, as examples: (i) relatively low remuneration with employers not prepared to pay an adequate wage to attract the desired workers (thus suggesting that there is no genuine demand for the employer’s products); (ii) poor working conditions in which case there could be some institutional factors limiting the employer’s ability to offer adequate employment conditions to new recruits (for example, there may be regulations influencing who can be hired in different positions, union or occupation association limits on flexibility, etc.); (iii) poor image of the industry; (iv) unsatisfactory working hours; (v) location difficult to commute to; (vi) inadequate recruitment effort by the firm; and (v) highly specialised skills needs that are very specific to the firm.

In everyday language, shortages are often interpreted or even defined directly, in terms of difficulties in filling vacancies. In Shah and Burke (2003), a shortage in an occupation is generally described as an aggregation of ‘hard-to-fill’ vacancies across firms. These vacancies would be those that remain unfilled after a certain time despite all reasonable efforts having been made by the firm.

According to Shah and Burke (2003) recruitment difficulties are, essentially, also hard-to-fill vacancies but, according to these authors, these difficulties are often not experienced by sufficiently large numbers of firms to translate into a market-wide difficulty or shortage.
2.2.2.4. Latent Skill Gaps
A New Zealand Department of Labour report, Infometrics (2006), on skills shortages, also covers what the report refers to as latent skill gaps. The presence of latent skill gaps could be either because employers fail to report problems or because they do not realise that they have a problem. It becomes difficult to assist firms that do not perceive they have a problem; in the end it is left to business sector competitive forces (or political processes in the public sector) to either force such firms to confront their latent problem or to divert resources to those firms with more perceptive management teams.

The Infometrics (2006) report does warn that the presence of latent skill gaps can mean that surveys of business perspectives on recruitment can understate the true level of skill shortages. An alternative view is that some firms or industry organisations might overstate the presence of skill shortages, either because they cannot perceive the true macro situation or because they see some benefit from doing so (for example, by encouraging government assistance). To explain the inability to perceive the true macro situation the following illustration should assist:

When excess demand conditions exist in a market, most businesses in the industry will be aware that there is more demand than they can meet, but they will not be aware of the extent that extra labour might alleviate this demand pressure. The Infometrics (2006:10) report illustrates this by an example where in a town that has ten car repair shops with excess demand conditions, all the repair shops perceive they need to hire more mechanics; they all advertise, giving the perception of strong demand for mechanics, but potentially one or two extra mechanics might resolve the excess demand and thus eight of the ten advertised positions are not actually required.
Towards Establishing a Practical Understanding of Skill Shortages

2.3 AN ECONOMIC PERSPECTIVE
In trying to understand the different meanings of skills shortages, it is also essential that the difference is highlighted between skills shortage in the internal labour market of the firm and the external labour market. Firms need to know how to adjust their production activities to the skills available at the time as skill shortages have the potential to damage the economy.

2.3.1. Skills Shortages in the Internal and External Labour Markets
The external labour market is the aggregation of the demands of all firms and supplies of a specific skill of individuals at a given time in a given geographical location and under average market conditions. The internal labour market is an individual firm’s own workforce, which can be reassigned within the firm. The interaction between the internal market and the external market occurs when, due to losses of workers, the firm must recruit replacement workers from outside the firm. Further discussion of shortages in the internal labour market follows below based on a presentation in Bosworth and Warren (1992:25-26).

A firm will typically have a potential pool of labour services that is always available from its existing employees. The exact nature of the skill shortages problem would differ between the firm’s present production activities and its commitment of investments associated with its future growth and development. The potential pool of labour services available to the firm (i.e., in terms of the present production activities) would be defined by the size of its workforce, the number of hours worked and the intensity of work effort of each employee.

The following factor demand model can represent the present production activities of a firm:

\[ Y = f (K, U, E, H), \]

(1)
Where \( Y \) denotes the current output, \( K \) is capital stock, \( U \) is the proportionate utilisation of capital stock, \( E \) denotes the total number of employees, and \( H \) is the hours of work per employee (Bosworth & Warren, 1992). All factor inputs
Towards Establishing a Practical Understanding of Skill Shortages

are considered to be imperfect substitutes, although additional capital stock and
greater utilisation of existing capital (K and U) and the number of employees
and hours worked per employee are likely to be close substitutes.

A rise in product demand will produce a gap between current and desired factor
demands. A similar gap can also be produced because of a reduction in the
normal hours of work or a loss of employees due to wastage.

Bosworth and Warren (1992: 25) suggest that the equation of current output,
above, provides an indication of how firms may react to increases in the
demand for their product. The reaction, in the short run, may involve the
reallocations of resources within the internal labour market because of the time
lags involved in recruitment from the external market. Firms may increase hours
of work per employee by reducing short time or increasing overtime and/or by
offering to convert part-time contracts to full-time. This may be associated with
increases in capital utilisation. The simple connection between hours of work
per employee and capital utilisation can, however, be broken by the introduction
of more intensive shift systems that can result in higher operating hours of
equipment even in the face of lower average hours per employee.

According to Bosworth and Warren (1992:26) changing the incentive system
could alter worker effort, thus driving a wedge between the number of hours of
work per employee and effective worker effort. This implies that increased
incentives would affect the coefficients on E and H in equation (1), thereby
resulting in improved efficiency.

2.3.2. Interaction of Internal and External Labour Markets
Bosworth and Warren (1992) also suggest that, in equation (1), hours of work
per employee and capital utilisation can be speedily adjusted, followed by
number of employees and, lastly capital stock. When the firm tries to change
the number of employees to meet new product demand, then it shifts its
response from the internal to the external labour market.
Delays in recruitment through the external labour market may mean that, in the short run, the firm may have no choice but to fulfil its requirements from the internal labour market. Bosworth and Warren (1992) also highlight the cost implications of such delays in recruitment, i.e., the hiring costs through the external labour market will increase disproportionately with reductions in the period of recruitment; these hiring costs would be associated with advertising, interview time, etc. Bosworth and Warren (1992) further argue that in a tight external labour market, the firm may conclude that there are skill shortages if the costs of making an appointment within some target time are considered excessive. It is argued that if the new product demand levels are not sustained, then additional costs in terms of firing/retrenchment costs will be involved. In such a situation, the firm may decide to only hire new labour on a casual basis, and only when there is more certainty in the demand for the product being sustainable will the firm begin to place the new employees on ongoing contracts.

Shah and Burke (2003) are of the opinion that the firm is more likely to rely on its internal labour market, failing which, it will resort to recruiting from the external labour market provided that this market can supply the required labour services more cost effectively than the internal labour market. Both these options involve increasing costs at the margin. Shah and Burke (2003) further argue that a firm may perceive the existence of a skills shortage in terms of an increase in its labour costs over and above normal wages rates, normal hiring costs, etc. In a competitive market where the firm has to sell its product at the going price, the increasing labour costs at the margin may mean that it may not be profitable for the firm to meet the whole of the potential increase in demand for its product. Only expansion in output by other existing firms can meet the increased product demand. Firms perceive a gap between potential demand and current output levels. They are not able to close this gap because it raises their costs excessively, making the marginal output unprofitable. However, each firm would still perceive this as a shortage situation because the higher output would be profitable if they had sufficient employees working at 'normal' levels of wages, hours and effort. (Shah and Burke, 2003:8).
2.4 TYPES OF SKILL SHORTAGES

The above discussion should have provided a clear demonstration of how slippery a concept skills shortage can be. Commenting on the shortages seen in 2007 a highly placed civil servant, and high ranking official of South Africa’s Black Management Forum (Jekwa, 2007), dismissed any reference to the existence of skill shortages as being an “urban legend”. As skill shortages can have many causes, this easy denial of the existence of shortages could have been influenced by the fact that there are no objective measures or direct indicators of skill shortages.

For a better understanding of the concept of skill shortages, Richardson (2006) suggests the following scheme for classifying shortages:

1. Level 1 shortage:
   - There are few people who have the essential technical skills who are not already using them and there is a long training time to develop the skills.

2. Level 2 shortage:
   - There are few people who have the essential technical skills who are not already using them, but there is a short training time to develop the skills.

3. Skills mismatch:
   - There are sufficient people who have the essential technical skills who are not already using them, but they are not willing to apply for the vacancies under current conditions.

4. Quality gap:
   - There are sufficient people with the essential technical skills who are not already using them and who are willing to apply for the vacancies, but they lack some qualities that employers consider to be important.

Richardson (2006) places much emphasis on the need to make a further distinction between workers who do not have the essential technical skill, on the one hand, and workers who are judged not to have the degree of motivation and other personal characteristics that the employers desire, on the other hand. To illustrate this point, we could imagine South Africa having sufficient qualified
electricians to fill all the vacancies and that these electricians are willing to apply for the available jobs. However, among these electricians there are not enough who are self-motivated, versatile and willing to work overtime to meet employers’ requirements. Would we say that there is a shortage? Well, if there is, it would be of a form that is different from the absence of specific skills. (Richardson, 2006:9).

It is always difficult to measure the supply of workers with a particular skill. Richardson (2006:8) points to the following as reasons for this difficulty:

- It is not just the number of people that is important, but also the number of hours that they are willing to work. While some people will be keen to work long hours, others will only want to work part-time.
- Also, within an occupation, there may be specialised subsets of skills or geographical areas having difficulty recruiting, while other areas have no such difficulty.
- It is also very likely that vacancies may stay unfilled, not necessarily because there are no people available to do the work, but because the remuneration and conditions of employment on offer are not attractive.
- Every skill group has a range of ability, from ordinary to exceptional. This is a difference in quality that is not observable in measures of labour supply, but is a differentiation that is important to employers.
- It is not surprising to find many people working in jobs that do not directly utilise their formal qualifications. Alternatively, people may have the required qualifications and be of working age but not seeking employment.

2.5 ILLUSTRATION OF SHORTAGE USING MEDICAL DOCTORS

Richardson (2006:12-14) simplifies the concept of ‘shortage’ with an example that uses the case of doctors. Below is a summary of the example, clarifying both the supply and demand sides:
2.5.1. The Level of Supply

It is an international norm that unless one has the relevant medical qualifications, and is registered with the relevant professional body, one cannot work as a medical doctor. According to Richardson (2006) the pool of potential doctors should, for all intents and purposes, be quite clear. It is accepted that very few from this pool may elect to pursue other interests like politics, health administration, teaching etcetera, on a full-time basis. For a particular country, therefore, the supply of doctors would be deemed to be the number of residents of working age who are qualified to work as doctors. Richardson (2006) argues that a feeling of a shortage of doctors may be felt if, from this pool, a large number of doctors are not willing to work the standard hours per week and per year. It is said that with no change in the number of doctors available in the pool, this unwillingness will reduce the supply of doctors’ services.

There are a number of other complications in trying to identify the supply of doctors. Richardson (2006) points out that doctors wishing to specialise may not be able to do so because of unavailability of training places, or perhaps because they failed the training and examination process. Richardson (2006) contends that it is always difficult to recruit doctors to work in public hospitals as preference is for the more lucrative wages available in private practice. The difficulty in recruiting for public practice would not necessarily mean that there is a shortage of doctors overall (Richardson, 2006:12). Exceptionally skilled and very good doctors are easily wooed to overseas countries that offer highly competitive wage rates. Locally, as well, doctors prefer to locate in urban areas rather than rural areas.

It can be seen from this example that what was expected to be a clear cut issue of identifying the supply of doctors is not that simple. It involves looking at hours worked, the proportion of people qualified for the work who are working in the occupation in question, sub-specialisations within the broad occupational category, quality differences, international worker movement, and geographical location of people with the required skills. All of these aspects that hold true for doctors also hold true for every other skill. (Richardson, 2006:13)
2.5.2. The Level of Demand

Richardson (2006) attempts to make the understanding of demand side easier by using the same example of doctors, and ignoring self-employed doctors but rather focusing on doctors who are employed by hospitals and other health services. The quantity of hours of doctors’ services demanded will be the sum of the quantity currently employed plus the quantity that employers are seeking to recruit (Richardson, 2006:13). This would mean that if a hospital, in a particular district, is seeking to recruit five doctors, say, in estimating the hospital’s demand it would be necessary to first establish whether the five doctors are to replace turnover, or whether they are to be additional to the existing number employed (Richardson, 2006:14).

For this example, as well, Richardson (2006) highlights the importance of thinking in terms of number of hours of doctors’ time required, instead of looking at the number of people. It is argued that the same issues as with supply will also apply here:

- Is the hospital looking for a general medical practitioner or a specialist?
- Must the doctor be willing to work overtime, including weekends, or a person that can work the normal 8-to-5 week-day?
- Is related experience in the field necessary, or would a recently qualified doctor be satisfactory?
- Are leadership and/or management skills also necessary over and above medical skills?
- What conditions of employment and benefits are offered?

Richardson (2006:14) concedes that the above example does not account for all the complexities on the issue of a shortage of doctors. It is said that the example is merely intended to highlight the many dimensions involved in the apparently simple concepts of shortage and supply and demand.
2.6 INDICATORS OF SKILL SHORTAGES
Objective information about the shortage of particular skills is not readily obtainable from employers as they have every incentive to exaggerate the problem of shortage. Such exaggeration is with the hope that outside assistance to find the skills will be forthcoming with less cost to the employer. Trade Unions are also another interest group in the firm that cannot be relied upon for objective information on skills shortages. It is usually in the interest of both parties to exaggerate the problem. Often, it is reputable recruitment firms that are canvassed for this information. (Richardson, 2006:27).

A report prepared by Infometrics (2006) for the New Zealand Department of Labour on indicators of skill shortages, recommends the following three indicators as a means for identifying the presence of a skill shortage in a firm:

- Vacancy fill rates; a low fill rate of vacancies is evidence that employers have a shortage.
- Volume of vacancies relative to the size of the occupation; a low fill rate may not be sufficient as an indicator, there has to be a strong demand for the occupation relative to the potential supply.
- Evidence of excessive wage pressure; a shortage should push relative remuneration up. A skill shortage that does not result in wage pressure may be due to other institutional factors.

It is expected that the above indicators will guide the researcher on how to recognize a skill shortage in the case study firm.

2.7 SOUTH AFRICAN PERSPECTIVE: CRITICAL AND SCARCE SKILLS
The literature study reveals that very little of the domestic research delves much into the theoretical framework of the skill shortage problem. Daniels (2007:1) notes that while “for economists the most important aspect of any discussion of skills is its relationship to productivity in the firm”, the South African Government literature on skills has defined skill shortages without taking this relationship into consideration.
Informed by definitions of skill shortages presented in the Government literature (DoL, 2006), two distinct types of skills are identified. The two types of skills are defined in the context in which skills are understood to refer to both qualifications and experience.

- **Scarce skills** refer to occupations in which there is a “scarcity of qualified and experienced people, currently or anticipated in the future, either (a) because such skilled people are not available, or (b) because they are available but do not meet employment criteria” (Daniels, 2007:2).

- **Critical skills** refer to specific skills within an occupation.

At Eskom, an electrician is classified as a core, critical and scarce skill. Core refers to the fact that it is an occupational skill that is essential to support core business.

### 2.8 THE APPRENTICESHIP LABOUR MARKET IN SOUTH AFRICA
In a chapter dedicated to the relationship between education and the economy in South Africa between 2001 and 2005, Kraak (2008:2) advances the argument that the education-economy relationship in South Africa is characterised by disconnection and misalignment. Kraak (2008) argues that although the South African economy has dramatically improved during the period 2001 to 2005, with a growth rate approaching 5 percent in 2006, these positive developments have not filtered down into the education and training sphere. He makes the observation that South African society has shifted from an era characterised by economic stagnation in the 1990s to one in which the rate of economic growth is far outstripping the ability of supply-side institutions to provide the necessary quantity and quality of skills.
2.8.1. Background to ASGISA

A background policy document, outlining the main components of the ASGISA approach, was produced in February 2006 (PCAS, 2006). The document spells out government’s intention as being to realize an annual economic growth rate that averages 4.5 percent or higher, between 2005 and 2009; and that the government seeks an average growth rate of at least 6.0 percent of Growth Domestic Product (GDP) between 2010 and 2014 (PCAS, 2006:2).

Elaborating on those issues that hinder faster economic growth, the ASGISA policy document has identified six “binding constraints” to economic growth which must be overcome for the ASGISA growth targets to be achieved. The six constraints are:

- The volatility and level of South Africa’s currency;
- The cost, efficiency and capacity of the national logistics system;
- **A shortage of suitably skilled labour**;
- Barriers to entry, limits to competition and limited new investment opportunities;
- The regulatory environment and the burden on small and medium businesses;
- Deficiencies in state organisation, capacity and leadership (PCAS, 2006).

The government’s response to these “binding constraints” falls into six categories:

- Macroeconomic issues;
- Infrastructure programs;
- **Skills and education initiatives**;
- Sector investment strategies (or industrial strategies);
- Second economy interventions; and
- Public administration issues (PCAS, 2006:3-4).
Towards Establishing a Practical Understanding of Skill Shortages

To illustrate the nature of the intervention, skills and education initiatives to address the constraint of a shortage of suitably skilled labour are described below.

2.8.2. Education and Skills Development

The ASGISA policy document acknowledges that the shortage of skills is the single greatest obstacle for both the public infrastructure and the private investment programmes (PCAS, 2006:7). Skills that were identified as being in shortage included professional skills such as engineers and scientists, managers such as financial, personnel and project managers; and skilled technical employees such as artisans and IT technicians. The shortage is attributed to bad policies of the apartheid era and the slowness of South Africa’s education and skills development institutions to catch up with the acceleration of economic growth (PCAS, 2006:7).

The key measures that were identified to address the skills challenge in the educational sphere were:

- Embarking on a quality improvement, development, support and upliftment (Quids-Up) programme aimed at achieving high levels of literacy and numeracy in the lowest grades;
- The Maths and Science (Dinaledi) programme for 529 high schools to double maths and science high school graduates to 50 000 by 2008;
- An upgraded career guidance programme; and
- A huge upgrading of the Further Education and Training colleges. In addition, the Adult Basic and Education Training programme to be ramped up, based on a model developed in Cuba and New Zealand (PCAS, 2006:7).

Other key interventions in the skills sphere included the development of an Employment Services System (to close the gap between potential employers and employees), and Phase 2 of the National Skills Development Strategy. A short-term project was to be the development of a scarce skills database based directly on the expected needs of the over 100 individual projects included in ASGISA (PCAS, 2006:7).
Other key skills projects included the deployment of experienced professionals and managers to local governments to improve project development implementation and maintenance capabilities. The project managed by the Development Bank of Southern Africa (DBSA) would deploy an estimated total of 150 expert staff, with the first 30 to have been deployed in April 2006. The project would also have included skills transfer to new graduates. The DBSA would compile a database of “retired experts” for this and further possible deployments (PCAS, 2006:7).

A new institution, the Joint Initiative for Priority Skills Acquisition (JIPSA) was launched, in early 2006, to identify solutions for the major skills shortages. JIPSA is a high-level joint task team consisting of key government ministers, business leaders, trade unionists and education and training providers or experts. At the helm of this task team is the Deputy President of South Africa (JIPSA Report, 2007:7). The mandate that was given to the JIPSA task team is described in the next section.

2.8.3. The Joint Initiative on Priority Skills Acquisition

JIPSA is an initiative that determines skills priorities in support of ASGISA’s economic objectives. The mandate given to its task team was set out as follows:

- Lead the implementation of a joint initiative of government, business and organised labour to accelerate the provision of priority skills to meet ASGISA’s objectives;
- Give momentum and support to the implementation of ASGISA;
- Prioritize key skills and develop appropriate human resource development (HRD) strategies to address these in the short to medium term;
- Mobilize senior leadership in business, government, organised labour and institutions concerned with education and training and science and technology to address national priorities in a more coordinated and targeted way;
- Promote greater relevance and responsiveness in the education and training system and strengthen the employability of graduates;
Towards Establishing a Practical Understanding of Skill Shortages

- Lay the foundations for more coordinated and effective HRD strategies;
- Report to the ASGISA Task Team and Cabinet on progress made towards agreed objectives;
- Identify blockages and obstacles within the system of education and training that stand in the way of the achievement of JIPSA’s objectives; and

- Lead an effective program to communicate JIPSA’s objectives and consult with stakeholders (JIPSA Report, 2007:7).

As part of its skills prioritisation strategy, the JIPSA task team identified five high-profile priority skills that needed immediate attention as follows:

i. High-level, world-class engineering and planning skills for the ‘network industries’ (transport, communications, water, energy);

ii. City, urban and regional planning and engineering skills;

iii. Artisanal and technical skills, with priority attention to infrastructure development, housing and energy, and in other areas identified as being in strong demand in the labour market;

iv. Management and planning skills in education and health; and


Following an analysis of the artisan training capacity, JIPSA (2007) has recommended that over the period 2007 – 2010, 7500 additional artisans be produced each year, over and above the current output of 5000 per year, to total 12500 per year. This translates to a projected increase of 30000 artisans over four years. JIPSA has identified the following enablers as key to the achievement of this four-year target (JIPSA Report, 2007:14):

(a) Prioritization of 16 trades as well as the requirements for each, namely, automotive electricians, boilermakers, carpenters and joiners, diesel mechanics, earth-moving equipment mechanics, light and heavy current electricians, fitters, fitters and turners, instrument mechanics,
Towards Establishing a Practical Understanding of Skill Shortages

millwrights, motor mechanics, sheet metal trades workers, shutter hands and steel fixers, toolmakers and patternmakers, and welders.

(b) Alignment of the different pathways (i.e. apprenticeships, learnerships, and vocational qualifications in Further Education and Training colleges) to attaining artisan status across the different trades.

(c) Provision of financial support to employer-led initiatives through the fiscus, the national Skills Fund and SETAs in addition to private-sector contributions.

(d) Closer cooperation and coordination between the Departments of Education and of Labour, and between government, business and labour.

2.8.4. The Skills Situation in the Sectors of the Energy SETA

The Energy SETA (ESETA) is registered by the Department of Labour to address the training needs of the sectors as outlined in the table below (ESETA Update, 2008:9):

Table 2.1: Sectors within the Energy SETA

<table>
<thead>
<tr>
<th>*SIC Code</th>
<th>Scope of Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>41111</td>
<td>Generation of energy</td>
</tr>
<tr>
<td>41112</td>
<td>Distribution of purchased electricity energy only</td>
</tr>
<tr>
<td>41114</td>
<td>Generation of renewable energy</td>
</tr>
<tr>
<td>41115</td>
<td>Transmission of energy</td>
</tr>
<tr>
<td>41116</td>
<td>Project management, maintenance and operation of electrical generation, transmission and distribution plants, networks and systems.</td>
</tr>
<tr>
<td>41118</td>
<td>Marketing of electricity</td>
</tr>
<tr>
<td>41200</td>
<td>Manufacture of gas; distribution of gaseous fuels through mains</td>
</tr>
<tr>
<td>50222</td>
<td>Construction of pylons for electric transmission lines</td>
</tr>
<tr>
<td>50320</td>
<td>Electrical contracting</td>
</tr>
<tr>
<td>87141</td>
<td>Industrial research for electrical energy</td>
</tr>
<tr>
<td>41300</td>
<td>Steam and hot water supply</td>
</tr>
<tr>
<td>42000</td>
<td>Collection, purification and distribution of water</td>
</tr>
<tr>
<td>42001</td>
<td>Public water enterprises: collection, purification and distribution of water, including potable water supply, domestic waste and sewage services,</td>
</tr>
</tbody>
</table>
refuse and sanitation services

<table>
<thead>
<tr>
<th>SIC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42002</td>
<td>Private water companies: collection, purification and distribution of water, including potable water supply, domestic waste and sewage services, refuse and sanitation services</td>
</tr>
<tr>
<td>42003</td>
<td>Irrigation boards: collection, purification and distribution of water, including potable water supply, domestic waste and sewage services, refuse and sanitation services</td>
</tr>
<tr>
<td>94003</td>
<td>Water and sanitation services (potable water supply, domestic waste water and sewage systems).</td>
</tr>
</tbody>
</table>

Source: ESETA Sector Skills Plan Update 2007-8 *(SIC = Standard Industrial Code)*

The National Skills Development Strategy (NSDS) 2005-2010 serves as the guideline for skills development planning for all the sectors (ESETA Update, 2008:8). The guiding principles of the NSDS are as follows:

(a) Support economic growth for employment creation and poverty alleviation.

(b) Promote productive citizenship for all by aligning skills development with national strategies for growth and development.

(c) Accelerate Broad Based Black Economic Empowerment and Employment Equity (85% Black, 54% women and 4% people with disabilities, including youth in all categories). Learners with disabilities to be provided with reasonable accommodation such as assistive devices and access to learning and training material to enable them to have access to and participate in skills development.

(d) Support, monitor and evaluate the delivery and quality assurance systems necessary for the implementation of the NSDS.

(e) Advance the culture of excellence in skills development and lifelong learning.

The ESETA Sector Skills Update (2008:28) reveals that, in 2006, municipalities had a total of 9948 engineering and artisan positions of which 4056 were vacant. The same report shows that out of the total of 9948 positions, 4524 were positions for electricians and that 36 percent of those were not filled. The ESETA Sector Skills Update (2008:33) also reflects on the skills requirements of the electricity industry for the period 2006 to 2010.
to support electrical infrastructure development. The report indicates that 5265 technical skills would have been required for projects in state owned enterprises. Twenty-seven percent of these technical skills would have been required for Eskom projects. Two hundred of the 27 percent would have been electricians.

The Eskom Annual Report (2008:87) shows that Eskom will need to recruit 2958 additional core, critical and scarce skills or develop them cumulatively over the next five years to replace losses and cater for its new infrastructure build programme. The Eskom Annual Report (2008:87) makes a further elucidation of the cumulative projected additional core, critical and scarce skills requirements as follows:

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills required</td>
<td>1431</td>
<td>1712</td>
<td>2054</td>
<td>2465</td>
<td>2958</td>
</tr>
</tbody>
</table>

The ESETA Sector Skills Update (2008) cites the recruitment of artisans by European Union and Australian electricity companies as an “emerging threat” to the skills development efforts by South African companies in the electricity sector. The report emphasises the need to formulate new strategies to counter this new source of skills loss.

At a summit held in June 2008 to review the state of electricity network maintenance in the electricity distribution industry, there was also reflection on the skills development challenges faced by the industry. This Electricity Distribution Maintenance Summit (2008:4) resolved to act on the following recommendations pertaining to skills development:

- A holistic strategy to be developed to address the skills shortage within the industry, including bringing back displaced and early retired skills for transfer, nurturing and mentoring skills as well as transferring the knowledge from the ageing workforce.
Partnerships must be formed with higher education to develop the required skills.

New training programmes must be developed and existing programmes be improved to meet the needs for skills development.

Successful models such as JIPSA must be expanded.

Bursaries and learnership programmes must be provided and apprenticeship training must be re-looked at.

The summit also called for the implementation of proper and appropriate remuneration frameworks. It recommended that the skills shortage be addressed by recruitment from abroad, in the short term.

### 2.8.5. The Skills Situation at Eskom Southern Region

The Eskom Southern Region electrical artisans maintain an electrical infrastructure made up of about 35,497 kilometres of powerlines, 162 substations, and 489,000 electrified rural households (SmallWorld Database, 2008). The Eskom Southern Region’s five-year load forecast (ESR Load Forecast Report, 2008) reveals that the region’s electrical infrastructure network will grow over the next five years as shown in Table 2.2 below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Powerlines in km</th>
<th>Number of Substations</th>
<th>Rural Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>35497</td>
<td>162</td>
<td>489000</td>
</tr>
<tr>
<td>2008</td>
<td>1122</td>
<td>3</td>
<td>20604</td>
</tr>
<tr>
<td>2009</td>
<td>1414</td>
<td>0</td>
<td>33748</td>
</tr>
<tr>
<td>2010</td>
<td>1321</td>
<td>2</td>
<td>23661</td>
</tr>
<tr>
<td>2011</td>
<td>1342</td>
<td>7</td>
<td>40486</td>
</tr>
<tr>
<td>2012</td>
<td>1119</td>
<td>2</td>
<td>26494</td>
</tr>
<tr>
<td>2013</td>
<td>967</td>
<td>2</td>
<td>20164</td>
</tr>
</tbody>
</table>

Towards Establishing a Practical Understanding of Skill Shortages

From Table 2.2 above, it can be seen that the customer base as well as the powerlines within the electrical network of Southern Region will grow substantially over the next five years. According to the Eskom Southern Region’s Balanced Score Card (September, 2008), the region has a capital expenditure plan of R251.482m for refurbishment and strengthening of the existing electrical infrastructure during the 2008/2009 financial year. The region’s five-year Capital Business Plan (2008) indicates that more will be invested on refurbishment and strengthening of existing infrastructure as well as on new infrastructure in the next five years, as follows:

Table 2.3: Five Year Investment Plan 2009 - 2013 (in R’000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Refurbishment</th>
<th>Strengthening</th>
<th>Rural Electrification</th>
<th>New Customer Extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>115 273</td>
<td>136 209</td>
<td>228 441</td>
<td>122 769</td>
</tr>
<tr>
<td>2009</td>
<td>145 986</td>
<td>336 756</td>
<td>323 232</td>
<td>146 406</td>
</tr>
<tr>
<td>2010</td>
<td>146 243</td>
<td>681 552</td>
<td>271 644</td>
<td>324 913</td>
</tr>
<tr>
<td>2011</td>
<td>126 916</td>
<td>386 230</td>
<td>360 467</td>
<td>308 563</td>
</tr>
<tr>
<td>2012</td>
<td>158 016</td>
<td>342 000</td>
<td>224 396</td>
<td>208 251</td>
</tr>
<tr>
<td>2013</td>
<td>84 310</td>
<td>133 000</td>
<td>154 484</td>
<td>208 752</td>
</tr>
</tbody>
</table>

Source: Capital Business Plan 2008 -2013, Eskom Southern Region.

Eskom Southern Region had a manpower complement of 1564 at the end of September 2008 (ESR BSC, September, 2008). The majority of employees, 1035 in all, which is 66.2% of the total complement, work in engineering departments (ESR BSC, September, 2008). At the end of September 2008, the two departments that employ the majority of electrical artisans, Field Services and Major Engineering Works, had 558 and 81 people, respectively. Major Engineering Works had almost reached its planned year-end complement of 84, while the targeted year-end complement for Field Services was 642 (ESR BSC, September, 2008). While it takes about 63 days on average, against a norm of 65 days, to recruit for any of the positions in engineering, the combined vacancy rate for all the engineering departments is 16.44 percent against a norm of 5 percent (ESR BSC, September, 2008).
Towards Establishing a Practical Understanding of Skill Shortages

According to Southern Region’s Workforce Plan (2007) prepared in 2007 for a five-year period, and shown below for only the engineering departments, Field Services would grow by 174 positions over the next five years, and Major Engineering Works by 32 positions. Although these two departments employ mostly electrical artisans,

(i) it is uncertain as to exactly how many of them are in the planned five-year growth. It is also not certain at this stage whether or not the growth is adequate,

given the planned expansion of the electrical network over the next five years.

(ii) Another uncertainty is whether or not Eskom Southern Region will be able to fill the new positions considering the indication in the Eskom Annual Report (2008:86) that the organisation is facing major challenges in terms of key-skills planning, attraction, development and retention.

According to the same Eskom Annual Report (2008), these challenges should be understandable given that major infrastructure building projects are happening simultaneously in South Africa, and that everyone is sourcing the same skills-set. For example, while Eskom is building power-stations to increase generation capacity, the metropolitan municipalities are building stadiums for the 2010 Soccer World Cup.

Table 2.4: Southern Region Workforce Plan 2008 - 2012

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>Skills Demand (Line Request)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
</tr>
<tr>
<td>Programme Mgt (Incl Electrification)</td>
<td>6</td>
</tr>
<tr>
<td>Electricity Delivery</td>
<td>7</td>
</tr>
<tr>
<td>Field Services</td>
<td>37</td>
</tr>
<tr>
<td>Major Engineering Works</td>
<td>8</td>
</tr>
</tbody>
</table>
Towards Establishing a Practical Understanding of Skill Shortages

<table>
<thead>
<tr>
<th></th>
<th>26</th>
<th>22</th>
<th>17</th>
<th>15</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Management</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strategic Support</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Workforce Plan 2008-2012, Eskom Southern Region

2.9 SUMMARY

In Chapter Two a literature study was conducted. The chapter served to create a basic understanding of what skill shortages are, and why their interpretation is important if firms are to respond appropriately to shortage situations. The definitions covered revealed the different types of skills shortages that could be experienced. Indicators of skills shortages were also highlighted.

The chapter reviewed the skills shortage problem in South Africa, and the high-level approaches that have been adopted in responding to it. An overview of the skills shortage challenges facing Eskom Southern Region was also given.

Chapter Three will discuss the methodology to be used in examining the causes and consequences of the shortage of electrical artisans in Eskom Southern Region.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 INTRODUCTION
In Chapter Two, a review of the literature on skills shortages was presented. The chapter served to create a basic understanding of what skills shortages are, and why their interpretation is important if firms are to respond appropriately to shortage situations. The skills situation at Eskom Southern Region was also reviewed.

Chapter Three discusses the qualitative inquiry in detail and explains how it was employed in this research, the rationale for the case study research strategy and the methods used for data collection. Then the data analysis is discussed followed by the important issues of reliability and validity and the measures that were taken to ensure these.

In order to gain a full understanding of the problem of the shortage of electrical artisans in the Southern Region of Eskom’s Distribution Business, the research study was conducted on the basis of a phenomenological paradigm. According to Collis and Hussey (2003:55), the phenomenological paradigm (i) tends to produce qualitative data; (ii) uses small samples; (iii) is concerned with generating theories; (iv) produces data that are rich and subjective; (v) has a natural location; (vi) has low reliability; (vii) has high validity; and (viii) generalises from one setting to another. Hammond, Howarth and Keat (1991) view the phenomenological paradigm as aiming to identify and describe the subjective experiences of respondents in a research study. For this study, the phenomenological paradigm was adopted because of the depth and richness of detail it can provide.

3.2 THEORETICAL ASSUMPTIONS
The issue of whether the study would employ a quantitative or a qualitative methodology has had to be addressed. Bryman (1988:108) suggests that “the distinction between qualitative and quantitative research is really a technical
matter whereby the choice between them is to do with their suitability in answering particular research questions”. Creswell (1994), however, suggests that for a researcher to know how to design all the phases of his research study, it is important to understand the assumptions of both the quantitative and qualitative paradigms. These assumptions are based on ontological, epistemological, axiological, rhetorical, and methodological approaches (Collis and Hussey, 2003:49).

The ontological assumption is concerned with what the nature of reality is (Creswell, 1994:5). According to Collis and Hussey (2003:48), the researcher must decide whether he considers the world to be objective and external to the researcher, or socially constructed and understood by examining the perceptions of the human actors. From a qualitative view, reality is subjective and multiple as seen by participants in a study (Creswell, 1994:5).

Epistemology is concerned with the study of knowledge and what is accepted as being valid knowledge (Creswell, 1994:6). According to Collis and Hussey (2003:48)), this assumption involves an examination of the relationship between the researcher and that which is being researched. Creswell (1994:6) contends that the quantitative approach holds that the researcher should remain distant and independent of that which is being researched. According to Creswell (1994), the qualitative stance is different. Researchers interact with those they study, whether this interaction assumes the form of living with or observing informants over a prolonged period of time, or actual collaboration.

The axiological assumption is concerned with values (Creswell, 1994:6). According to Collis and Hussey (2003:48), under the positivistic paradigm the belief is that science and the process of research is value-free. Under the phenomenological paradigm, on the other hand, it is considered that researchers have values, even if they have not been made explicit (Collis and Hussey, 2003:48).
The rhetorical assumption is concerned with the language of research (Creswell, 1994:6). According to Creswell (1994:6-7), while the language of quantitative studies is impersonal, formal, and based on set definitions, the language of qualitative studies is personal, informal, and based on definitions that evolve during the study.

The methodological assumption is concerned with the process of the research (Creswell, 1994:7). A further contention from Creswell (1994) is that a methodology emerges from the distinctions about reality, the relationship between the researcher and that researched, the role of values, and the rhetoric of the study. According to Denzin and Lincoln (1998:3), qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. Denzin and Lincoln (1998:3-4) argue that the use of multiple methods, or triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question and not an attempt to ensure validation because objective reality can never be captured.

It is for all the above reasons that a qualitative research design was chosen as the most suitable for understanding how Eskom Southern Region is responding to the skills shortage problem as it relates to electrical artisans.

By employing multiple methods to conduct this study, the aim was to capture, in a qualitative sense, as much reality as possible regarding the response to the electrical artisans’ skills shortage problem.

3.3 RESEARCH STRATEGY: The Case Study Method

A case study is an extensive examination of a single instance of a phenomenon ("the case") of interest and is an example of a phenomenological methodology (Collis and Hussey, 2003:68). According to Collis and Hussey (2003), a unit of analysis is the kind of case to which the variables or phenomena being studied and the research problem refer, and about which data are collected and analysed. A case study approach implies a single unit of analysis, such as a company or a group of workers, an event, a process or even an individual (Collis and Hussey, 2003:68).
According to Collis and Hussey (2003:68) case studies are often described as exploratory research, and used in areas where there are few theories or a deficient body of knowledge. Scapens (in Collis and Hussey, 2003:68) adds the following types of case studies:

- Descriptive case studies where the objective is restricted to describing current practice
- Illustrative case studies where the research attempts to illustrate new and possibly innovative practices adopted by particular companies
- Experimental case studies where the research examines the difficulties in implementing new procedures and techniques in an organisation and evaluating the benefits
- Explanatory case studies where existing theory is used to understand and explain what is happening.

Yin (2003:9) argues that a case study strategy is preferred when the researcher seeks answers to “how” and “why” questions, when the researcher has little control over events being studied, when the object of study is a contemporary phenomenon in a real-life context, when boundaries between the phenomenon and the context are not clear, and when it is desirable to use multiple sources of evidence. Stake (1995:3) acknowledges that cases can be chosen and studied because they are thought to be instrumentally useful in furthering understanding of a particular problem, issue, concept, and so on.

Yin (1994:13) identifies the following characteristics of case study research:

- The research aims not only to explore certain phenomena, but to understand them within a particular context
- The research does not commence with a set of questions and notions about the limits within which the study will take place
- The research uses multiple methods for collecting data which may be both qualitative and quantitative.
In this study, the phenomenon of interest is the electrical artisans skills shortage problem; and Eskom Southern Region is the unit of analysis. A skills shortage is a contemporary phenomenon which exists in a socio-economic context, and affects many companies. This study has used multiple sources of evidence (namely, survey questionnaire, document analysis, and interviews) to further the understanding of the electrical skills shortage problem. The case study strategy was chosen, for this research, as it helps in probing for answers to how Eskom Southern Region is responding to the skills shortage problem as it relates to electrical artisans.

Both Yin (2003) and Stake (1995) argue that case studies can be used for theoretical elaboration or analytical generalization.

### 3.3.1. Selection of the Unit of Analysis

According to Fouche and de Vos (2005:104), the selection of a unit of analysis happens almost automatically at the problem identification stage. Mouton (1996:47-50) identifies various kinds of units of analysis, which he refers to as the "furniture in the social world". The different kinds of units of analysis that Mouton (1996) identifies are individuals, groups, organisations, institutions, social actions and events, cultural objects and interventions. Mouton (1996) further adds that one should understand that the unit of analysis refers to the "what" of the study (i.e. what object, phenomenon, entity, process or event forms part of the study).

Yin (1993:33) observes that, once defined, the unit of analysis provides stability to a case study design. The criteria for selecting a single-case or multiple cases to study depend on whether the case is critical, topical or feasible (Yin, 1993:34). Eskom Southern Region was selected as a case to study because of its critical and unique position in the socio-economic development of the Eastern Cape Province. Its situation in this geographical area is unique, and its interaction with the population of the Eastern Cape was thought to be very complex and intertwined. The selection also satisfied the other criteria in that the phenomenon being studied is contemporary and topically relevant because
the absence of adequate skills in a business may render the business ineffectual, thereby impacting negatively on society.

3.4 METHODS OF DATA COLLECTION
A case study is suited to data triangulation, where data are collected from different sources in the study of a phenomenon (Collis and Hussey, 2003). Jick (in Collis and Hussey, 2003:78) contends that triangulation has vital strengths, encourages productive research, enhances qualitative methods and allows the complementary use of quantitative methods. Yin (1993:32) reinforces this view by observing that an important aspect of case study data collection is the use of multiple sources of evidence in order to converge on the same set of issues.

According to Cooper and Schindler (in Froon, 2007:35), there are two basic approaches to data collection, and these being observation and communication. Froon (2007:35) notes that if the research questions and objectives are concerned with what people do, then an obvious way in which to discover this is to watch the people do it. This is what observation involves. The communication approach, on the other hand, involves questioning or surveying people and recording their responses for analysis (Froon, 2007:35). Froon (2007) contends that questioning is more economical and efficient than observation, and that a few well-chosen questions can yield information that would take much more time and effort to gather by observation.

Cooper and Schindler (in Froon, 2007:36) acknowledge that the communication approach does have weaknesses. They cite the quality and quantity of information gathered being dependent on the ability and willingness of respondents to cooperate. The unwillingness to cooperate may be due to people failing to see any value in participation, they may fear the interview experience for some personal reason, or they may view the topic as too sensitive and thus the interview as potentially embarrassing or intrusive.

Since this study requires the gathering of information about opinions, attitudes and perceptions, the communication approach is preferred despite its
weaknesses. It would be very difficult or impossible to source this information through observation. This difficulty is confirmed by Babbie and Mouton (2001:294) when they acknowledge that “just as you cannot hope to observe everything, neither can you record everything you observe”.

### 3.4.1. Communication Approach to Data Collection

The questionnaire and the interview were the two approaches adopted as the main means of collecting data at source. Document study was used during the literature review to also collect primary data. Henning, van Rensburg and Smit (2004:100) argue that if documents and other modes of data collection are omitted from a study there could be gaps that are left unfilled. They further argue that it is useful to practice data collection in as many modes as possible, and then select a specific method in a specific design that may capture data optimally and purposefully.

### 3.4.2. Questionnaire

According to Collis and Hussey (2003), questionnaires are associated with both positivistic and phenomenological methodologies. They also describe a questionnaire as a list of carefully structured questions, chosen after considerable testing, with a view to eliciting reliable responses from a chosen sample. The main aim of a questionnaire, according to Collis and Hussey (2003:173), is to find out what a selected group of participants do, think or feel. Delport (2005:166) concurs with Collis and Hussey (2003) in that the basic objective of a questionnaire is to obtain facts and opinions about a phenomenon from people who are informed on the particular issue.

Babbie and Mouton (2001:233) express the view that although the term ‘questionnaire’ suggests a collection of questions, a typical questionnaire will probably contain as many statements as questions, especially if the researcher is interested in determining the extent to which respondents hold a particular attitude or perspective. There are also different types of questionnaires as are described in Delport (2005:167) as follows:
A mailed questionnaire is a questionnaire which is sent off by mail in the hope that the respondent will complete and return it. There is also a telephonic questionnaire which, from a methodological point of view, is more a type of structured interview schedule whereby the researcher asks the questions telephonically through a person-to-person interview. A self-administered questionnaire is handed to the respondent, who completes it on his own, but the researcher is available in case problems arise. Questionnaires are sometimes delivered by hand, so that respondents can complete them in their own time, and then get collected later by the fieldworkers. The last type is the group-administered questionnaire in which case respondents who are present in a group would each complete a questionnaire on their own without discussion with the other members of the group.

The mailed questionnaire type was used for this study. As the survey was conducted in the case study company, an internal email distribution of the questionnaires was utilised instead of the traditional postal distribution. As a means of collecting primary data, the questionnaire was designed to answer the main research problem as well as sub-problems as interviews and document study could not satisfactorily answer all of them.

The questionnaire is divided into two sections, with the first section requiring the respondent’s biographical information while the second section is the actual opinion survey.

The questionnaire was emailed to a number of individuals within engineering departments of Eskom Southern Region that utilise electrical artisans or work very closely with electrical artisans. Individuals in these departments would be quite close to occupations that utilise electrical artisans, and would therefore be able to perceive any problems that arise because of a shortage of electrical artisans and are also more likely to know what the cause of the shortage is. The questionnaire was also distributed among recruitment and training and development practitioners within the human resources department of Eskom Southern Region. These individuals, although placed within the human
resources department, work very closely with the engineering departments, and would be in a position to know all about skills shortages as well as interventions or strategies adopted to mitigate the shortages. Another data collection approach employed was the interview, to complement the information gathered with the questionnaire. This approach is described in the next section.

3.4.3. Interviews

Collis and Hussey (2003:167) state that interviews are a method of collecting data in which selected participants are asked questions in order to find out what they do, think or feel. They acknowledge that interviews are associated with both positivist and phenomenological methodologies. Schwandt (2007 : 163) classifies interviews as either structured (closed, forced-choice responses) or unstructured (open-ended responses). Collis and Hussey (2003) suggest unstructured interviews are suitable for a phenomenological (qualitative) approach, which this study has adopted.

According to Easterby-Smith, Thorpe and Lowe (1991), unstructured or semi-structured interviews are an appropriate method when:

- it is necessary to understand the construct that the interviewee uses as a basis for his or her opinions and beliefs about a particular matter or situation
- one aim of the interview is to develop an understanding of the respondent’s ‘world’ so that the researcher might influence it, either independently or collaboratively
- the step-by-step logic of a situation is not clear
- the subject matter is highly confidential or commercially sensitive
- the interviewee may be reluctant to be truthful about this issue other than confidentially in a one-on-one situation.

The strength of phenomenological approaches lies in their capacity for the exploration and understanding of meaning frames, subjective experiences, and feelings, which are of particular interest in the current study (Hammond et al, 1991). Greef (2005:293) contends that although the unstructured interview is
often dismissed as lacking objective data, it is nevertheless a type of interview which the researcher uses to elicit information in order to achieve understanding of the participant’s point of view or situation. A questionnaire lacks such flexibility.

An important step in qualitative research is identifying the parameters for data collection. According to Creswell (1994:148), the idea of qualitative research is to purposefully select informants (or documents or visual material) that will best answer the research question, and no attempt is made to select informants randomly. The interviewees in this case study were selected because they were strategically important for the study and they could provide details of how Eskom Southern Region is responding to the shortage of electrical artisans which the researcher was trying to investigate.

The semi-structured in-depth interview was also used in this case study as it is less structured than a questionnaire, but more structured than everyday conversations. For this case study, it was also “necessary to understand the construct that the interviewee uses as a basis for his or her opinions and beliefs about a particular matter or situation” (Easterby-Smith et al, 1991).

The individuals from Eskom Southern Region who were interviewed were selected from different levels of management in the company in order to cover a broad spectrum of perspectives on the issue of the shortage of electrical artisans. A non-management view was also sought, and two labour union representatives were interviewed. According to Tellis (1997:2), case studies should lend themselves to multi-perspective analysis such that the researcher is able to consider not just the voices of the actors but also those of relevant groups of actors in the study and the interaction between these groups. For this reason, apart from selecting people within the case study company to interview, other external stakeholders were interviewed to solicit their views on the shortage of electrical artisans in Eskom Southern Region. In this regard, a senior manager based at Eskom Distribution head-office was interviewed. He is associated with the Maintain Network Value Chain which incorporates the Field
Services Department that utilises mostly electrical artisans. This manager also managed the Field Services Department of Eskom Southern Region for eleven years up to the end of 2007. Also interviewed externally was an administrator from a local Further Education and Training (FET) college.

In total, eight people were interviewed. To capture all verbal data accurately, the interviews were recorded. Greef (2005:298) mentions that a tape recorder allows a much fuller record than notes taken during the interview. For this study, field notes were written to record new issues and the researcher’s own impressions that came up during the interview.

3.4.4. Document Study
According to Strydom and Delport (2005:315), documents such as minutes of meetings, reports, and internal memos are not written with a view to research, but rather with a view to continual functioning of an organisation or for the execution of a particular matter. Unlike opinion survey or interview respondents who would be conscious that they are being studied, producers of documents would not necessarily anticipate the analysis of their documents at a later stage. In the course of the literature review for this study, information relevant to the issue of the shortage of electrical artisans was collected from internal company reports as well as local newspapers.

Creswell (1994:152) insists on the importance of noting whether information gleaned from documents represents primary material (i.e. information directly from the people or situation being studied) or secondary material (i.e. second-hand accounts of the people or situation). It can be confirmed that, for this study, the documents from the company served as primary sources of information.

3.5 DATA ANALYSIS
Collis and Hussey (2003) believe that analysing qualitative data always presents both positivists and phenomenologists with challenges. According to Robson (1993:370), the main challenge to qualitative data analysis is that there
is no clear and accepted set of conventions for analysis corresponding to those observed with quantitative data (cited in Collis & Hussey, 2003:253). Creswell (1994:153) explains that in qualitative analysis several simultaneous activities engage the attention of the researcher. These activities could be collecting information from the field, sorting the information into categories, formatting the information into a story or picture, and actually writing the qualitative text. Creswell (1994) also admits that the data generated by qualitative methods are usually voluminous. De Vos (2005:333) concurs that the mere amount of data generated by qualitative research, in the form of hundreds of pages of field notes or mountains of dictation on tape, is even more awe-inspiring to the inexperienced qualitative researcher than the quantitative researcher.

According to Henning et al (2004), analysing qualitative data literally means taking words, sentences and paragraphs apart, which is an important act in the research project in order to make sense of, interpret and theorise, the data. Schwandt (2007:6) advises that in organising, reducing and describing the data, an analysis ought to be rigorous, systematic, disciplined, carefully documented, and methodical.

Although it is acknowledged by Tesch (1990) that the process of data analysis has no right way (cited in Creswell, 1994:153), Collis and Hussey (2003:253 – 254) concede that one approach to analysis is to quantify the data, either formally or informally. This means that qualitative data are turned into numerical data. Collis and Hussey (2003) say that researchers would quantify data in the process of reducing the information or examining themes or patterned behaviour.

The data analysis approach adopted in this case study was both descriptive as well as interpretational. Descriptive statistics were used in the analysis of the responses to the questionnaire. Translating the responses to each of the questions in the questionnaire into the number of times a certain answer appeared has helped in the understanding of the nature of the shortage of electrical artisans in Eskom’s Southern Region. Interpretation of information
from documents reviewed and from the interviews necessitated a close examination of the content in order to find constructs, themes, and patterns. The common themes and patterns that formed were useful in shedding light on the main research problem and its sub-problems.

3.6 RELIABILITY AND VALIDITY
Marshall and Rossman (in de Vos, 2005:345) contend that all research must respond to questions that will evaluate the research project for trustworthiness. Lincoln and Guba (in Creswell, 1994:157-158) discuss establishing quality criteria such as “trustworthiness” and “authenticity” as viable stances on the question of validity and reliability. According to Creswell (1994), there is no common approach to addressing the question of validity and reliability in the qualitative paradigm. De Vos (2005:346) suggests that the qualitative researcher address the question of validity and reliability by testing the research findings against four criteria that were developed by Lincoln and Guba (1985). The four criteria are credibility, transferability, dependability and confirmability of the research results.

Credibility is the alternative to internal validity where it is necessary to demonstrate that the research was conducted in such a manner as to ensure that the subject was accurately identified and described. In this study, triangulation was employed which allowed for multiple sources of evidence to be used (Creswell, 2005: 158). Convergence found among data collected from personal interviews, company documents and newspapers reports is a reflection of the credibility of the study.

Transferability or limited generalisability of a qualitative study to other settings may be problematic (de Vos, 2005:346). The generalisation of qualitative findings to other settings (i.e. external validity) is not the intent of qualitative research. For this study, however, limited generalisability is possible for some of the themes that have emerged from the data analysis. It is, therefore, possible that those themes or theories can be applied to another organisation that is in a
similar situation as Eskom Southern Region in terms of the shortage of electrical artisans.

Dependability is the alternative to reliability (de Vos, 2005:346). According to Cohen, Manion and Morrison (2000), case studies do not have to demonstrate a positivist paradigm notion of reliability which assumes an unchanging universe where inquiry could, quite logically, be replicated. This assumption of an unchanging universe is in direct contrast to the qualitative assumption that the social world is always being constructed, and that the concept of replication is itself problematic (de Vos, 2005:347). As this study investigates the shortage of electrical artisans within the context of a particular region, in a particular company, and a particular industry, such an approach mitigates against replicating it exactly in another context (Creswell, 2005:159).

The final construct, confirmability, captures the traditional concept of objectivity (de Vos, 2005:347). According to Lincoln and Guba (1985), the emphasis of confirmability is on whether the findings of the study can be confirmed by another study. They take away evaluation of the researcher for objectivity, and place it on the data. In evaluating the data for objectivity, Lincoln and Guba (1985) offer the following qualitative criterion as appropriate: Do the data help confirm the general findings and lead to the implications? For this study, the definition of clear research questions and the use of multiple sources of data collection elicited credible data which should be able to withstand an evaluation for objectivity.

3.7 ETHICAL CONSIDERATIONS
Bell (1993) advises that permission to carry out an investigation must always be sought at an early stage. Since the researcher is employed by the Eskom Southern Region it was easy to obtain permission to use the company as a case for this research study. It was established that the research process would not harm any of the participants or any of those about whom information was to be collected. The opinion survey questionnaire that was sent out to participants was accompanied by an explanation of the purpose of the research. The same
was done when documents were requested from the company for this study. The purpose of the study was also explained to those who were asked to participate in the personal interviews.

It is the view of the researcher that, in conducting the research, no accepted research practices were violated. Confidentiality/anonymity was guaranteed to participants who responded to the opinion survey questionnaire. Inputs from both the questionnaire respondents and the interviewees were treated with equal dignity. It is also the researcher’s view that at no time, during the course of the research, would any of Eskom’s standards of conduct have been violated.

3.8 LIMITATIONS OF THE RESEARCH AND MITIGATING FACTORS

3.8.1. Sample Size
It would not be appropriate to generalise the findings of this study to whole populations as the research was based on only a single case study. As with all case studies, cases are not sampling units; and Eskom Southern Region would not have been randomly selected from a large universe. Natural sampling was the approach to this case study. Respondents to the opinion survey questionnaire were consciously selected from those departments of the case study company where people’s opinions would offer the researcher in-depth understanding of the research problem (Creswell, 1994:148). This approach proved to be a limitation to the number of participants.

3.8.2. Data Collection Methods
Observation was not used as a data collection method in this study. The researcher would have wished to visit all of the Technical Service Centres (TSC) in the Southern Region to observe, first hand, what the situation was like in terms of the shortage of electrical artisans. This was not possible as time was a major constraint.
3.8.3. Interview Bias
Interviews are a method of collecting data, and the researcher as an interviewer becomes a participant in the research process. The researcher’s involvement with the interview can help bring out rich data for the study. However, this involvement has the potential for interview bias. To avoid this potential for bias, an attempt was made by the researcher to maintain an identical procedure in arrangements with the participants from the initial contact until the conclusion of the interview (Collis and Hussey, 2003).

3.9 SUMMARY
In this chapter, the research methodology adopted for this study was presented. The presentation involved a detailed discussion of the empirical approach that was used in the study, including the research design, research methods, as well as the theoretical basis for the design. A discussion of how the questionnaire was administered as well as how the interviews were set up was given. The chapter was concluded with a discussion of the validity and reliability of the findings arising from this study, as well as a discussion of ethical considerations and possible bias during the course of the research.

In Chapter Four, focus will be given to the presentation and interpretation of the research results.
CHAPTER FOUR
PRESENTATION OF RESULTS FROM THE QUESTIONNAIRE

4.1 INTRODUCTION

In Chapter Three, the focus was on the research methodology adopted for this study. One of the sections of that chapter was devoted to a description of a questionnaire as a data collection tool. The questionnaire type used for this study was also described.

This chapter will present an analysis and interpretation of the results of the questionnaire. An interpretation of the data collected from the interviews and documents studied will be presented in the next chapter.

4.2 ANALYSIS OF THE RESULTS OF THE QUESTIONNAIRE

A sample of the questionnaire used is presented in Annexure A. The analysis is based on 72 responses out of the 100 questionnaires that were sent out.

Table 4.1: Overall Response Rate

<table>
<thead>
<tr>
<th>Number Distributed</th>
<th>Number of Responses</th>
<th>% of Responses to Number Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>72</td>
<td>72%</td>
</tr>
</tbody>
</table>

This indicates a population response rate of 72 percent.

The questionnaire was divided into two distinct segments, namely,

(i) Section A, which asked for biographical information; and

(ii) Section B, which looked at the following areas

- Part 1: Areas of Shortage:- seeking to confirm areas of skill shortages and thereby answer sub-problem one which sought to find out about particular occupations in shortage;
• Part 2: Reasons for the Brain Drain:- which sought to resolve sub-problem two by determining what stakeholders believe is the cause of the shortage of electrical artisans;
• Part 3: Education and Training:- looking at education and training interventions with a view to finding answers to
  (a) the main research problem, which seeks to determine whether the organisation is responding to the shortage of electrical artisans;
  (b) sub-problem three, on the role of the apprenticeship system;
  (c) sub-problem four, on progress made with respect to the implementation of learnerships; and
  (d) sub-problem five, which sought to investigate other education and training interventions used in Southern Region;
• Part 4: Employment Conditions:- looking at conditions of employment under which electrical artisans work, and further seeking to address sub-problem two in determining the cause of the shortage of electrical artisans in the Southern Region;
• Part 5: An open-ended question on what respondents thought was the cause of the shortage of electricians in the Southern Region.

4.3 SECTION A: BIOGRAPHICAL INFORMATION
This section of the questionnaire consisted of four questions which required that the respondent answer by ticking in a box with a check mark against an appropriate answer from a list of possible answers. Each question was analysed in MS Excel using frequency tables. The frequency tables were then translated into a graphic form to facilitate ease of interpretation.

4.3.1. Responses to Question 1
Responses to the first question are presented below. The question that was being answered was:

In which department do you work?
Presentation of Results from the Questionnaire

Table 4.2: Respondents According to Department (n=72)

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Services</td>
<td>51</td>
<td>70</td>
</tr>
<tr>
<td>Major Engineering Works (MEW)</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Network Services</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>HR (Recruitment)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HR (Training &amp; Development)</td>
<td>9</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Own Research

For ease of reading and interpretation, Table 4.2 is translated into a pie-chart as follows:

Figure 4.1: Respondents According to Department (n=72)

Percentage of Respondents by Department

From Table 4.2 and Figure 4.1 it can be seen that the majority of respondents, 70 percent of the total number of respondents, were from the Field Services Department. These respondents would either be personnel working very closely with the electrical artisans employed in this department, or would themselves be electrical artisans. Similarly, the 13 percent of respondents who were from the Major Engineering Works (MEW) Department could either have been individuals working very closely with the electrical artisans in this department or were themselves electrical artisans. Another 13 percent of respondents were from the Human Resources’ Training and Development Department, and they would also be individuals who are intimately involved with the development of electrical artisans.
The response was very low from both the Network Services Department and the recruitment personnel of the Human Resources Department. This low response is understandable as there are very few maintenance planning personnel from Network Services who work very closely with the Field Services electrical artisans. Recruitment personnel generally cover all areas of the business with no special focus on a particular department.

It can be inferred from the responses received that the majority of respondents would be individuals who are exposed to electrical artisans working in the Field Services Department. It can be inferred further that these respondents would be knowledgeable about general issues concerning electrical artisans in Field Services.

4.3.2. Responses to Question 2

Responses to this question are tabulated below:

**In which regional area is your workstation?**

<table>
<thead>
<tr>
<th>REGIONAL AREA</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mthatha</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>East London</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Queenstown</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Port Elizabeth / Uitenhage</td>
<td>43</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: Own Research
For the Field Services Department, any one regional area has a number of Technical Services Centres (TSC) which are organisationally structured exactly the same as another TSC in another area. As the majority of electrical artisans are employed in the TSCs, this means that, if the study had focused solely on electrical artisans within the Field Services Department, the sample could have been drawn from just one regional area. However, as there are other electrical artisans employed in the Technical Support Section and Technical Specialists Group (TSG) of the Field Services Department, and artisans employed by the Major Engineering Works Department, it was necessary that the sample be drawn from all four regional areas.

From Table 4.3 and Figure 4.2 it is apparent that the majority of the respondents, i.e. 60 percent of the total, were from the Port Elizabeth/Uitenhage regional area. This high response rate from this area is attributed to the effectiveness of the follow-ups made by the Human Resources Practitioner from this area, who assisted the researcher in sending reminders to the participants to return their questionnaires.

As respondents seem to be concentrated in the Port Elizabeth/Uitenhage area and Field Services Department, it is expected that there would be a skewness in the results of the questionnaire that reflects this bias.
4.3.3. Responses to Question 3

Responses to this question are presented in the table below. This table is translated into a graphic representation in Figure 4.3. The question responded to read as follows:

What is your current man-grading (Old Paterson Grading)?

Table 4.4: Responses According to the old Paterson Man-grade (n=72)

<table>
<thead>
<tr>
<th>MAN-GRADE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBL / BBU</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>CCL</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>CCU / PA0</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>PPG/PPP/MMM/MMU</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Own Research

Figure 4.3: Responses According to the old Paterson Man-grade (n=72)

From Table 4.4 and Figure 4.3 it is observed that there is a fair distribution of responses across the grades in which electrical artisans are also employed. The greatest response, at 35 percent, was from the BBL/BBU man-grades. These are grades that employ Technical Officials (TO) and Senior Technical Officials (STO) in the Field Services Department. The MEW Department employs Senior Construction Officials (SCO) in these grades. The mode of the distribution was at 29 percent, representing responses from the CCL and the
CCU/PA0 grades. These grades also include, among other occupations, electrical artisans in the positions of Principal Technical Official (PTO), Principal Construction Official, Technical Services Officer (TSO), and Field Services Officer (FSO). The response of 7 percent from the PPG/PPP/MMM/MMU management grades is understandable as these grades represent the managerial level.

### 4.3.4. Responses to Question 4

The fourth question sought to determine the length of time, in years of service, that the respondents had been associated with the Southern Region. The specific question asked was:

**How many years have you worked in the Southern Region?**

The responses are tabulated below.

<table>
<thead>
<tr>
<th>NUMBER OF YEARS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>2 to 5 years</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>48</td>
<td>67</td>
</tr>
</tbody>
</table>

Source: Own Research

![Percentage of Respondents by Years of Service in Southern Region](image)
Table 4.5 and Figure 4.4 indicate that most respondents, i.e. 67 percent of respondents, have worked for Eskom Southern Region for longer than 5 years. This length of service is an indicator that these respondents would be knowledgeable enough about the business in the Southern Region to understand issues concerning the shortage of electrical artisans.

The spread of experience as indicated by the responses to Question 3 and Question 4 should result in a representative feedback from the questionnaire.

4.4 RESPONSES TO PART 1 OF SECTION B

Section B was the second segment of the questionnaire consisting of questions divided into five parts of the questionnaire. Part 1 sought to determine areas of shortage of electrical artisans while Part 2 was probing for reasons for the brain drain. Part 3 covered questions related to education and training interventions while Part 4 sought to understand the reasons why electrical artisans would not want to work in the Southern Region. Part 5 was an open-ended question soliciting more information about the causes of the shortage of electrical artisans in Southern Region.

4.4.1. Responses to Question 1 of Part 1

This question invited respondents to express their opinions on whether or not they agreed with the view that the Southern Region has enough electrical artisans in any one of the four regional areas, namely, Mthatha, Queenstown, East London, and Port Elizabeth/Uitenhage. The question was posed as follows:

Southern Region Field Services has enough electrical artisans in the following Field Services areas:-
Mthatha; Queenstown; East London; Port Elizabeth/Uitenhage.

Although responses to this question will not answer Sub-problem No.2 directly, the responses should nonetheless assist towards resolving the problem. In Chapter One, Sub-problem No.2 is posed as follows:
What do stakeholders in Eskom’s Southern Region believe is the cause of the shortage of electrical artisans?

Table 4.6(a) to Table 4.6(d) below present results reflecting respondents opinions about where they believe areas of shortage are, according to geographical area.

Table 4.6(a): Areas of Shortage According to Regional Area (n=72)

<table>
<thead>
<tr>
<th>MTHATHA AREA</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Neutral</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Disagree</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>34</td>
<td>47</td>
</tr>
</tbody>
</table>

From Table 4.6(a) it can be seen that a very significant proportion of the respondents, 66 percent, disagreed with the view that Southern Region Field Services has enough electrical artisans in the Mthatha Area. A mere 6 percent were in agreement with the statement while 28 percent chose not to express an opinion.

After each question, the questionnaire allowed the respondents to make further comments if they had any. A common theme, from these comments, is that the Mthatha Area is far too big and needs to be allocated additional TSCs and more electrical artisans.

The following table, Table 4.6(b), presents results of the responses to the same question about the Queenstown Area.
Table 4.6(b): Areas of Shortage According to Regional Area (n=72)

QUEENSTOWN AREA

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agree</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Neutral</td>
<td>37</td>
<td>52</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>16</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Own Research

A very significant number of respondents, 52 percent, did not express an opinion about whether or not they were in agreement that the Queenstown Area has enough electrical artisans. About 36 percent of the respondents expressed disagreement that the Queenstown Area has enough electrical artisans while 22 percent were in agreement.

None of the comments made any particular reference to the Queenstown Area.

Responses about the East London Area are presented in Table 4.6(c) below:

Table 4.6(c): Areas of Shortage According to Regional Area (n=72)

EAST LONDON AREA

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Agree</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Neutral</td>
<td>31</td>
<td>43</td>
</tr>
<tr>
<td>Disagree</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.6(c) above it is also noted that a significant number of respondents, 43 percent, chose not to express an opinion. Although 24 percent of the respondents agreed that the East London Area has enough electrical
Presentation of Results from the Questionnaire

Artisans, it was a mere 4 percent that strongly agreed. In contrast, 12 percent disagreed with the statement, while 17 percent strongly disagreed. This reveals that there is a split view between those who agree and those who disagree that the East London Area has enough electrical artisans, at 28 percent and 29 percent respectively.

The additional comments made no particular mention of the East London Area. The balanced view, about East London, from the respondents could be because there are no noticeable gaps, because of a shortage of electrical artisans, in the East London Area Field Services business.

The responses about the Port Elizabeth/Uitenhage Area are presented in Table 4.6(d) below:

Table 4.6(d): Areas of Shortage According to Regional Area (n=72)

<table>
<thead>
<tr>
<th>PORT ELIZABETH/UITENHAGE AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPINION</strong></td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.6(d) a significant number of respondents, 50 percent, disagreed with the view that the Port Elizabeth/Uitenhage Area has enough electrical artisans. It was a few respondents, about 15 percent, who agreed with the statement. A fair proportion of the respondents, i.e. 35 percent, chose not to express an opinion.

The results presented in the four tables are summarized in Table 4.6(e) below.
Table 4.6(e): Where is the Shortage of Electrical Artisans the Greatest?

**PERCENTAGE OF RESPONDENTS (%)**

<table>
<thead>
<tr>
<th>OPINION</th>
<th>MTHATHA</th>
<th>QUEENSTOWN</th>
<th>EAST LONDON</th>
<th>PORT ELIZABETH /UITENHAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>11</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Neutral</td>
<td>28</td>
<td>52</td>
<td>43</td>
<td>35</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>14</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>47</td>
<td>22</td>
<td>17</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: Own Research

The opinions of the respondents suggest that the areas of Mthatha, Queenstown, and Port Elizabeth/Uitenhage have a shortage of electrical artisans in Field Services. From the opinions expressed by the respondents, there can be no doubt that shortages exist in all areas, but the greatest need is in the Mthatha area.

A few comments made by some of the respondents when they answered this question are quoted below:

“The shortage is dire, and the business needs to employ as soon as possible”.

“People do not want to stay in the Mthatha Area, Port St Johns in particular, for the following reasons:-
there are no health facilities, no schools, no garages, no shops, no properties to buy so one can have a home, and no public toilets even”.

“The problem is that the business has no retention plan in place, especially for the remote areas”.

The concerns and suggestions made here will be explored further in the next chapter when the interviews that were conducted and documents that were studied are analysed. An authoritative view about the regional area with the greatest need for electrical artisans will also be explored in Section 5.2.2.2.
4.4.2. Responses to Question 2 of Part 1

The following question was posed:

Southern Region has enough electrical artisans in the following occupations in Field Services: -
Senior Technical Official (STO); Principal Technical Official (PTO); Technical Services Officer (TSO); Field Services Officer (FSO).

Responses to this question should address Sub-problem No.1, posed in Chapter One as follows:

At what level of skill and/or position does the greatest shortage of electrical artisans exist?

Table 4.7(a) to Table 4.7(d) below present results of the opinions of the respondents about areas of shortage according to occupation.

Table 4.7(a): Areas of Shortage According to Occupation (n=72)

<table>
<thead>
<tr>
<th>SENIOR TECHNICAL OFFICIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPINION</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.7(a) it can be seen that 78 percent of the respondents overwhelmingly disagreed with the statement that suggested that Southern Region has enough electrical artisans in the position of Senior Technical Official. About 11 percent expressed no opinion on the question, while another 11 percent agreed that the Southern Region has enough electrical artisans in the position of Senior Technical Official. Those respondents who chose to remain neutral on this question could have done so because they are aware...
that there are STOs who are not qualified electrical artisans. This could be due to Southern Region employing individuals in this position who are not fully qualified, with a view to developing them until they qualify as electrical artisans.

The duties of an STO at the Technical Services Centre involve operating and maintenance on electrical power systems of voltages up to 33 kilovolts under both live and dead circuit conditions. Those of an STO from the Technical Support Group involve specialised repair work and commissioning of power system equipment and components like circuit-breakers and transformer components. In both cases, the job of the artisan is important for ensuring continuous availability of electricity to consumers. The consumers serviced would normally range from residential-type to commercial consumers.

Table 4.7(b), below, presents the responses received about the Principal Technical Official position.

Table 4.7(b): Areas of Shortage According to Occupation (n=72)

<table>
<thead>
<tr>
<th>PRINCIPAL TECHNICAL OFFICIAL</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agree</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Neutral</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Disagree</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>20</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.7(b) the indication is that 46 percent of the respondents did not agree with the statement that Southern Region has enough electrical artisans in the position of PTO. About 30 percent agreed with the statement while 24 percent decided to remain neutral on the question.

A PTO at the Technical Services Centre would also be involved in operating and maintenance work on electrical power systems of up to 132 kilovolts. A Technical Support Group PTO provides specialised intrusive maintenance and
repair service on medium and high voltage equipment up to 132 kilovolts. They provide service to residential, commercial and industrial consumers.

Table 4.7(c), below, presents the responses received about the Technical Services Officer position.

**Table 4.7(c): Areas of Shortage According to Occupation (n=72)**

<table>
<thead>
<tr>
<th>TECHNICAL SERVICES OFFICER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPINION</strong></td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

Source: Own Research

A significant number of respondents, about 43 percent, did not agree with the statement that the Southern Region has enough electrical artisans in the position of Technical Services Officer. About 35 percent, however, expressed agreement while only 22 percent decided not to express an opinion on the statement.

A TSO plays a supervisory role to all resources at a Technical Services Centre. He/she should have the competence to do operating and maintenance work on power systems of up to 132 kilovolts.

The following table presents responses received about the position of Field Services Officer.
An FSO provides support to the Technical Service Centres in terms of quality management, safety, staff development, and environmental management. He/she should also be an artisan who is qualified to operate on power systems of up to 132 kilovolts.

A significantly large number of respondents, about 69 percent, disagreed with the statement that suggests that the Southern Region has enough electrical artisans in the position of Field Services Officer. While 16 percent of the respondents are in agreement with the statement, 15 percent decided not to express an opinion on the question.

In the comments made by some of the respondents there are concerns raised and suggestions made. Some of these comments are quoted below:

"We need to build a pool of Technical Officials (TOs) and use this pool to supply Senior Technical Officials(STOs) and Principal Technical Officials(PTOs)."

"The focus must be on appointing TOs that can later become PTOs, TSOs and FSOs."

"Qualified electricians are scarce. The business has got many TOs who are not trade tested, and the interest of the business is for them to do faults which are S1. There is only one program, Article 28, to develop them to be trade tested."

The Article 28 mentioned is with reference to Section 28 of Chapter 2 of the Manpower Training Act which refers to (adult) persons not indentured under Section 13 but who satisfy the Registrar of Training that they have gained
sufficient work experience over an adequate period of time, and that they can therefore undergo the trade test after which (if they pass) they can become qualified artisans (Kraak, 2008:487).

A further analysis of the comments made will be integrated with the discussion of the interviews and document study results that will be done in the next chapter.

4.4.3. Responses to Question 3 of Part 1
This question was framed in the form of the following statement:

Southern Region has enough electrical artisans in the following occupations in Major Engineering Works (MEW):-
Senior Construction Official (SCO); Principal Construction Official (PCO).

The responses to the question dealing with the SCO are presented below in Table 4.8(a).

Table 4.8(a): Areas of Shortage According to Occupation (n=72)

<table>
<thead>
<tr>
<th>SENIOR CONSTRUCTION OFFICIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPINION</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.8(a) above it can be observed that a significantly large number of respondents, about 61 percent, disagreed with the statement that suggests that the Southern Region has enough electrical artisans in the position of Senior Construction Official. Only 1 respondent, a mere 1 percent, expressed
agreement with the statement, while 38 percent of the respondents decided not to express an opinion.

An SCO is involved in the construction, refurbishment, and repair of powerlines and substation equipment up to 132 kilovolts.

Table 4.8(b) below presents responses received about the Principal Construction Official position.

**Table 4.8(b): Areas of Shortage According to Occupation (n=72)**

<table>
<thead>
<tr>
<th>PRINCIPAL CONSTRUCTION OFFICIAL</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Neutral</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Disagree</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>24</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: Own Research

A significantly large number of respondents, about 58 percent, did not agree with the statement that the Southern Region has enough electrical artisans in the position of Principal Construction Official. Only 4 percent of the respondents agreed with the statement, while 38 percent chose to remain neutral.

In the comments made by the respondents, suggestions were made that the Southern Region needs to focus more on the development of assistants to electrical artisans so that they can later be appointed as SCOs.

A PTO’s duties are similar to those of an SCO with the added responsibility of playing the role of a supervisor to a construction team.
4.4.4. Summary of Part 1 on Areas of Shortage

It is evident from the results presented in the preceding sections that the opinions expressed allow for inferences to be made about areas of shortage of electrical artisans within the Southern Region in terms of occupations.

Table 4.9 below summarizes the results on areas of shortage according to occupation.

Table 4.9: Summary of Respondents by Occupation

<table>
<thead>
<tr>
<th>OPINION</th>
<th>SCO</th>
<th>PCO</th>
<th>STO</th>
<th>PTO</th>
<th>TSO</th>
<th>FSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>29</td>
<td>29</td>
<td>13</td>
</tr>
<tr>
<td>Neutral</td>
<td>38</td>
<td>38</td>
<td>11</td>
<td>24</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Disagree</td>
<td>33</td>
<td>25</td>
<td>31</td>
<td>18</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>28</td>
<td>33</td>
<td>47</td>
<td>28</td>
<td>32</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Own Research

A conclusion can also be drawn about occupations experiencing a shortage of electrical artisans in both Major Engineering Works and Field Services. According to the opinions expressed by respondents, these occupations are SCO, PCO, STO, PTO, TSO, and FSO. From Table 4.9, the respondents' opinions suggest that the greatest need for skills by far is with the STO position.

4.5 RESPONSES TO PART 2 ON REASONS FOR THE BRAIN DRAIN

Respondents were provided with a list of seven possible reasons why electricians leave the Southern Region. They were instructed to select only three from the list in order of importance, with 1 indicating the top-most important reason, 2 indicating the second most important, and 3 as a third place in order of importance.
The question was posed as follows:

**Southern Region electricians leave the region for the following reasons:**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. They leave due to Old Age Retirement</td>
<td>42%</td>
</tr>
<tr>
<td>b. They leave to join other Eskom Divisions</td>
<td>26%</td>
</tr>
<tr>
<td>c. They leave to join other South African companies with better career opportunities</td>
<td>10%</td>
</tr>
<tr>
<td>d. They leave to join other South African companies with better working conditions</td>
<td>7%</td>
</tr>
<tr>
<td>e. They leave to join other South African companies that pay better salaries than Eskom Southern Region</td>
<td>7%</td>
</tr>
<tr>
<td>f. They leave to open their own electrical contracting businesses</td>
<td>4%</td>
</tr>
<tr>
<td>g. They leave South Africa to join companies from other countries</td>
<td>4%</td>
</tr>
</tbody>
</table>

Responses to the question are presented in the following figure in graphic form:

**Figure 4.5: Top Most Reason for the Brain Drain (n=72)**

Out of the seven possible reasons provided, the reason rated top most by 42 percent of the respondents is that electricians leave the Southern Region to join...
other South African companies that pay better salaries than Eskom Southern Region. The reason rated by respondents as second most important is that electricians leave the Southern Region in search of better career opportunities with other South African companies.

From Figure 4.5 above it is evident that not many respondents believe that the loss was to other Eskom divisions. That reason was rated third place.

4.5.1. Summary of Part 2 on Reasons for the Brain Drain
The question to be answered in Sub-problem No.2 is:

What do stakeholders in Eskom Southern Region believe is the cause of the shortage of electrical artisans?

The analysis of the responses as presented in Figure 4.5 revealed that the reasons rated by the respondents as the three most important reasons why electricians are leaving the Southern Region are the following, in order of importance:

(i) Electricians leave to join other South African companies that pay better salaries than the Southern Region.

(ii) Electricians leave to join other South African companies with better career opportunities.

(iii) Electricians leave to join other Eskom Divisions.

The above reasons, expressed as opinions of the respondents, elucidate to some extent the second sub-problem.

4.6 RESPONSES TO PART 3 ON EDUCATION AND TRAINING
The first two questions of the questionnaire sought to determine if there had been a steady intake and placement of trainee artisans from the apprenticeship and learnership programs with the different TSCs or construction teams of MEW. The responses are presented graphically in the figures below.
4.6.1. Responses to Question 1 on Apprenticeships

Figure 4.6 below is a graphic representation of the responses to the following question:

How many apprentice trainees were placed in your business unit (TSC or Construction Team) in the last one year or two?

Figure 4.6: Placement of Apprentice Trainees (n=72)

An overwhelming majority of respondents, about 71 percent, seem to believe that there had never been more than 5 trainees placed in their TSCs or construction teams in the last year or two. Another 18 percent of the respondents indicated that there had never been a placement of trainees in their areas in the last year or two.

Since these responses are based on the perceptions of the respondents, their veracity will be corroborated by information gleaned from the document study that was conducted. Therefore, any inference based on these responses will be postponed until the next chapter when information from the document study is analysed in Section 5.2.2.2.

Table 4.10 below presents responses to the following question:
The Southern Region has been putting enough trainees in the apprenticeship program for electricians.

Table 4.10: Intake to Apprenticeship Program

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Neutral</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Disagree</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>17</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.10 above 52 percent of the respondents disagreed with the statement that the Southern Region has been putting enough trainees in the apprenticeship program. While 23 percent of the respondents indicated agreement with the statement, 25 percent chose to remain neutral.

4.6.2. Responses to Question 2 on Learnerships

Figure 4.7 below is a graphic representation of the responses to the following question:

How many learnership trainees were placed in your business unit (TSC or Construction Team) in the last year or two?
Figure 4.7: Placements of Learnership Trainees

How Many Learnerships Were Placed in Your Business Unit (TSC or construction team) in the Last Year or Two?

![Pie chart showing placements of learnership trainees: Zero 13%, Six to Ten 10%, More than Ten 4%, One to Five 73%, Six to Ten 10%]

From Figure 4.7 above an overwhelming majority comprising 73 percent of respondents indicated that they believe that not more than 5 trainees from the learnership program were placed in their business units. It is interesting to note the closeness and similarity of responses to this question to the responses received on a similar question, above, dealing with trainees from the apprenticeship program. This may be an indication that respondents make no discrimination between the learnership and apprenticeship programs in so far as trainees are concerned. The respondents may perceive all trainees as individuals who are being trained to become electrical artisans.

Table 4.11 below presents responses to the following question:
**Since the implementation of learnerships, Southern Region has been placing enough trainees in the learnership program for electricians.**

**Table 4.11: Intake to Learnership Program**

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Neutral</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Own Research
Presentation of Results from the Questionnaire

From Table 4.11 above 43 percent of the respondents disagreed with the statement that the Southern Region has been placing enough trainees in the learnership program. While 25 percent of the respondents indicated agreement with the statement, 32 percent chose to remain neutral.

A common theme emerging from the additional comments made by respondents is that the region is not appointing enough trainees for training as electrical artisans. Some of the respondents suggested that the training programs should be accelerated so that the region can increase its pool of qualified electrical artisans. Some of the comments are quoted below:

“Not enough trainees; and must shorten training because there is a lack of artisans”.

The trainees that we get are over-educated, and as such do not last in the learnership program”.

“The problem with the Learnership Program is that the TSCs do not have enough manpower in other positions that do not necessarily require qualified artisans, and they end up employing these learners to these positions, and their training towards becoming electrical artisans stops. This practice defeats the purpose”.

“The whole learnership program is questionable. The apprentice program was better. The TSCs do not have people to mentor/coach these learners. In general, the average years’ experience has dropped at the TSCs, and a lot of older hands with experience have left the business”.

The responses to this question have assisted with resolving Sub-problem No.3 and Sub-problem No.4. The questions that were posed in these problems were as follows, respectively:

- What does research reveal about the role of the apprenticeship system in Eskom Southern Region?
- Has Eskom Southern Region implemented effective Learnerships to address the shortage of electrical artisans?

The opinions expressed are compared with authoritative information from the Human Resource Training and Development Department in Table 5.1 of Chapter Five.
4.6.3. Responses to Question 3 on Accessibility of Bursaries

This question was posed to gauge opinion on whether information on bursaries offered to high school and technical college students wishing to follow careers as electrical artisans was easily accessible to students in both urban and rural areas.

Table 4.12 (a) below summarises responses to the following question:

**Southern Region offers bursaries to Math & Science high school students, and technical college students wishing to follow careers as electrical artisans; and**

**Information about these bursaries is easily accessible to students in urban areas.**

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Agree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Neutral</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>21</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.12(a) a significant proportion of respondents, 44 percent, is of the view that information about the bursaries is not easily accessible to students in urban areas. While 28 percent of the respondents agreed that such information is easily accessible to students in urban areas, another 28 percent chose not to express an opinion on the question.

Table 4.12(b) below presents responses to the same question above except that the opinion sought is on whether

**information about these bursaries is easily accessible to students in rural areas.**
Table 4.12(b): Bursary Information Easily Accessible to Rural Students

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Neutral</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>38</td>
<td>53</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.12(b) 68 percent of respondents overwhelmingly disagreed with the statement that information about the bursaries is easily accessible to students in rural areas. This opinion should be expected if the same respondents also felt the same way about accessibility of the information to urban students. Only 8 percent of the respondents agreed with the statement, while 24 percent chose to remain neutral.

A common theme in the additional comments made by respondents was that these bursaries are not publicised widely enough. A selection of some of the comments is quoted verbatim below:

“It is only recently that HR has responded to complaints from chiefs in rural areas about lack of information about bursaries in the rural schools”.
“People in the rural areas don’t even know about this because they do not have access to computers”.
“Eskom must educate students especially those from the Rural Areas”.
“You must advertise more”.

Responses to this question have assisted towards resolving the main research problem as well as towards resolving Sub-problem No.5. The question posed in Sub-problem No.5 was:-

**What are the formal education and training interventions employed by Eskom Southern Region to reduce the skill shortages?**

This sub-problem is still to be addressed further in subsequent questions of the questionnaire.
4.6.4. Responses to Question 4 on Basic Technical Qualifications

This question had three sub-questions posed as follows:

In many organisations many employees have the basic technical qualifications.

(a) Is this the case in Southern Region? If yes,

(b) How many such employees are used in practical/hands-on and technical jobs that are closely related to the job of an electrical artisan? And,

(c) How many such employees are used in non-technical jobs, that are not hands-on, outside of engineering (e.g. in Customer Services)?

Responses to these questions are depicted graphically below:

**Figure 4.8(a): Employees Have the Basic Technical Qualifications**

<table>
<thead>
<tr>
<th>Agree?</th>
<th>Percentage in Agreement/Disagreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>35%</td>
</tr>
<tr>
<td>YES</td>
<td>65%</td>
</tr>
</tbody>
</table>

From Figure 4.8(a) the indication is that 65 percent of respondents are of the opinion that Southern Region employees have the basic technical qualifications.
Presentation of Results from the Questionnaire

This 65 percent would then have responded to both Question 4(b) and Question 4(c).

Figure 4.8(b) is a representation of the responses to Question 4(b).

**Figure 4.8(b): Employees Used in Technical Jobs**

<table>
<thead>
<tr>
<th>Employees with Basic Technical Qualifications that are Used in Practical/Hands-On Jobs</th>
<th>Closely Related to Job of an Electrical Artisan</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 100</td>
<td>28%</td>
</tr>
<tr>
<td>51 to 100</td>
<td>14%</td>
</tr>
<tr>
<td>Less than 51</td>
<td>58%</td>
</tr>
</tbody>
</table>

From Figure 4.8(b) the indication is that a majority 58 percent of those respondents who believe that employees in Southern Region have the basic technical qualifications, also believe that there is a small number (not more than 50) of such employees who are used in practical/hands-on and technical jobs that are closely related to the job of an electrical artisan. Another 42 percent of the respondents are of the opinion that the number is significantly greater than 50.

Although in Figure 4.8(a) the view was that there are many employees with basic technical qualifications, the indication from Figure 4.8(b) could be that few
are placed in technical jobs because they may be lacking in some other qualities that the employer considers important (Richardson, 2006).

Figure 4.8(c) provides responses to Question 4(c).

**Figure 4.8(c): Employees Used in Non-Technical Jobs**

From Figure 4.8(c) the opinion of the respondents seems to be divided as 50 percent of the respondents believe that there are not more than 50 employees with basic technical qualifications that are used in non-technical jobs. Another 50 percent of the respondents have indicated that there are more than 50 such employees. Of these respondents, 22 percent place the number of these employees at more than 100.

The figures above reveal that a significant proportion of respondents believe that there are many employees with the basic technical qualifications who are used in non-technical jobs, outside of engineering.
No discernible themes have emerged from the additional comments that were made by the respondents. However, the fact that there are such employees used in non-technical jobs may indicate the existence of a technical skills quality gap (Richardson, 2006).

4.6.5. Responses to Question 5 on Willingness to be Trained

This question sought to determine whether respondents agreed or disagreed with the view that Southern Region has enough people who have the necessary basic technical qualifications required to be trained as electrical artisans and who are very willing to undergo training.

Responses to the abovementioned question are tabulated in Table 4.13 below.

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Agree</td>
<td>26</td>
<td>36</td>
</tr>
<tr>
<td>Neutral</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.13 above the indication is that 63 percent of the respondents agreed with the statement that the Southern Region has enough people who have the necessary basic technical qualifications required to be trained as electrical artisans and who are very willing to undergo training. Only 19 percent of the respondents disagreed with the statement, while 18 percent chose to remain neutral.

Two statements from the additional comments seem to sum up the rest of the comments made. These are quoted below.

“There is no consistency. Some are given opportunities, others are not".
“We have qualifications, but they are not recognised by our seniors".
In the comments, respondents claimed that it is the policy of the Southern Region to exclude employees from applying for further studies because the ‘attitude’ is that as long as employees fulfil the role expected of them further skills are not required.

4.6.6. Responses to Question 6 on Training Opportunities

This question was meant to solicit opinions on the following statement:

Although there are enough people in Southern Region with the necessary basic technical qualifications required to be trained as electrical artisans and who are willing to undergo such training, Eskom Southern Region does not provide them the opportunity.

The responses are summarised in Table 4.14 below.

Table 4.14: Training Opportunities in Southern Region (n=72)

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Neutral</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Own Research

From Table 4.14 above 50 percent of the respondents agreed with the statement that suggests that although there are enough people in the Southern Region with the necessary basic technical qualifications required to be trained as electrical artisans, and who are willing to undergo such training, Eskom Southern Region does not provide them the opportunity. The proportion of respondents who disagreed with the statement was 32 percent, while 18 percent of the respondents chose to stay neutral on the question.
The single comment quoted below captures the theme that has emerged from the additional comments made on this question.

“People are willing to be developed, but quite often policies are used as an excuse for not giving them a chance to develop”.

The plausibility of these comments is explored further in Chapter Five and Chapter Six under the discussions on training and development.

4.6.7. Responses to Question 7 on Recognition of Prior Learning

This question invited opinion on whether or not respondents agreed with the following statement:

There are enough experienced people who have been working as assistants to electricians who are willing to become electricians but Southern Region does not apply Recognition of Prior Learning.

Responses are presented in Table 4.15 below.

Table 4.15: Application of Recognition of Prior Learning (n=72)

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Agree</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Neutral</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: Own Research

The table above reveals that 46 percent of the respondents agreed that there are enough experienced people who have been working as assistants to electricians who are willing to become electricians but the Southern Region does not apply Recognition of Prior Learning. The remainder of the respondents either disagreed, 25 percent, or chose to remain neutral to the question, 29 percent.
There were too few additional comments made on this question for any
recognisable pattern to emerge. However, the reasonableness of the opinion is
strengthened if one considers the fact that respondents were mostly drawn from
the ranks of electricians.

4.6.8. Responses to Question 8 on Trainer Competence
This question asked the respondents whether they agreed or disagreed with the
following statement:

The Southern Region utilises its most suitable electrical artisans, regardless of age, as trainers in the apprenticeship and learnership programs.

Responses to this question are summarised in the table below.

Table 4.16: Competence of Trainers (n=72)

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Neutral</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Disagree</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.16 above reveals that 49 percent of the respondents did not agree that
the Southern Region utilises its most suitable electrical artisans as trainers in
the apprenticeship and learnership programs. However, 23 percent agreed,
while 28 percent remained neutral.

If this majority opinion of respondents is anything to go by, it may be a
revelation about the quality of training in both the apprenticeship and
learnership programs.
The theme from the additional comments is that there are not enough experienced artisans in the field for the Training and Development Department to tap from for its trainers.

4.6.9. Responses to Question 9 on ‘Grey Beard’ Trainers
This question asked the respondents whether they agreed or disagreed with the following statement:

The Southern Region utilises its older (so-called grey-beard) and experienced electrical artisans as trainers in the apprenticeship and learnership programs.

Responses to this question are summarised in the table below.

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Agree</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Neutral</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Disagree</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>18</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Own Research

Table 4.17 above reveals that 63 percent of the respondents did not agree that the Southern Region utilises its older and experienced electrical artisans as trainers in the apprenticeship and learnership programs. However, only 11 percent agreed, while 26 percent chose to stay neutral.

Comments received on this question were similar to those offered in the previous question. The respondents seemed to indicate that the Southern Region does not have a pool of experienced electrical artisans from which the Training and Development Department could draw its trainers. The grey-beard artisans may be opting for retirement rather than staying on as trainers.
4.6.10. Responses to Question 10 on Mentorship and Coaching

This is one of a number of other questions in the questionnaire that were posed with a view to resolving the main research problem and Sub-Problem No.6. The question to be answered to resolve Sub-Problem No.6 is,

What other internal strategies are being applied by Eskom Southern Region to resolve the skill shortage of electrical artisans?

Question 10 of the questionnaire tested the respondents on whether or not they thought that the Southern Region has a well structured mentorship and coaching program for its apprenticeship and learnership programs.

Responses to this question are presented graphically in the figure below.

Figure 4.9: Structured Mentorship and Coaching Program (n=72)

The figure above shows that 61 percent of the respondents are of the opinion that the Southern Region does not have a well-structured mentorship and coaching program for its apprenticeship and learnership programs.
Mentors and coaches would normally be drawn from the same ranks as those of many of the respondents in the departments surveyed. The opinion expressed by the 61 percent of respondents may well be a real indication of the absence of a structure for the support of mentorship and coaching in the apprenticeship and learnership programs.

The mentoring/coaching program is reviewed further in Section 4.6.13. A further analysis and recommendations are provided in Chapter Five and Chapter Six.

4.6.11. Responses to Question 11 on Accelerated Apprenticeship and Learnership

Respondents were asked to indicate whether they agree or disagree with the statement below:

The Southern Region’s apprenticeship and learnership programs are accelerated so that trainees are able to qualify as electrical artisans earlier than normal.

The responses are presented in the following table, Table 4.18 below:

Table 4.18: Accelerated Apprenticeship and Learnership (n=72)

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Neutral</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>Disagree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Own Research

The majority of respondents, 39 percent, do not agree that the Southern Region’s apprenticeship and learnership programs are accelerated so that trainees are able to qualify as electrical artisans earlier than normal.
Presentation of Results from the Questionnaire

In response to another question on whether or not enough trainees are placed in the apprenticeship and learnership programs, some of the respondents expressed the view that training needs to be shortened so that the pool of artisans is expanded.

A sample of some of the additional comments made by the respondents follows:

“Learnerships are not working the way they are supposed to work”.
“If you push the training and get the artisans to qualify earlier, how will the quality of work be?”
“Southern Region does not care about their apprentices; they get put in the system and they have to fend for themselves with no interest in their training from their seniors”.
“Training takes too long. In the past we had ‘appies’ completing their training in 18months (with the trade test included)”.
“When these trainees go for practicals at the TSCs they get tempted; they do over time and make money (three times their salaries) and the TSCs end up employing them due to the pressure of staff shortages, and they abandon their training”.

4.6.12. Responses to Question 12 on Trainers and Enhancement of Apprentice Training

This question was posed as follows:

How do trainers enhance the training of apprentices to get more of them to pass their trade tests?

The table below indicates how the respondents have answered the question.

Table 4.19: Respondents Answering YES or NO on Trainers (%)

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>YES (%)</th>
<th>NO (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Trainers receive advanced training to improve their training skills.</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>b. The number of trainers made available to train is enough.</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>c. Apprentices are given individual attention by the trainers.</td>
<td>43</td>
<td>57</td>
</tr>
<tr>
<td>d. Trainers allocate up to 8 weeks for pre-trade test preparation.</td>
<td>67</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: Own Research

The indications of how the respondents have expressed their opinions on each of the possible answers are shown in Table 4.19 above.
The indication is that 58 percent of the respondents believe that trainers enhance the training of apprentices because they receive advanced training to improve their training skills.

The indication from Table 4.19 is that 74 percent of the respondents believe that the number of trainers made available to train is not enough to enhance the training of apprentices and to get more of them to pass their trade tests.

The table also indicates that 57 percent of the respondents believe that apprentices are given individual attention by the trainers. At 43 percent, the proportion of respondents who do not believe that apprentices are given individual attention is significant. This dissenting view would be consistent with a negative opinion expressed on another question about the existence of a well structured mentorship/coaching program.

It can be seen from the table that 67 percent of the respondents believe that trainers allocate up to 8 weeks for pre-trade test preparation, and that this enhances the training of apprentices to get more of them to pass their trade tests.

### 4.6.13. Responses to Question 13 on Mentors/Coaches and Enhancement of Apprentice Training

For this question, respondents had to choose from three possible answers. The question was posed as follows:

How do mentors and coaches enhance the training of apprentices to get more of them to pass their trade tests?
Table 4.20: Respondents Answering YES or NO on Mentors/Coaches (%)

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>YES (%)</th>
<th>NO (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mentors/Coaches receive advanced training to improve their mentoring/coaching skills.</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>b. The number of mentors/coaches assigned to apprentices is enough.</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>c. Apprentices are given individual attention by the mentors/coaches</td>
<td>26</td>
<td>74</td>
</tr>
</tbody>
</table>

Source: Own Research

Responses are presented in percentage form as shown in Table 4.20 above.

From Table 4.20 above the indication is that 53 percent of the respondents believe that mentors/coaches do not receive advanced training to improve their mentoring/coaching skills. At 47 percent, the proportion of respondents who do believe that mentors/coaches do receive advanced training is also significant. It is noted that the respondents have been consistent in expressing a negative view whenever asked about mentorship/coaching.

The table indicates that only 17 percent of the respondents believe that the number of mentors/coaches assigned to apprentices is enough. Once more, the response is negative about mentorship/coaching as 83 percent of the respondents expressed the view that the number of mentors/coaches assigned to apprentices is not enough.

There is also an indication that 74 percent of the respondents do not believe that apprentices are given individual attention by the mentors/coaches.

Responses to Question 12 and Question 13 can be summarised as indicating that respondents believe that trainers enhance the training of apprentices whereas mentors/coaches generally do not enhance the training of apprentices.
4.6.14. Responses to Question 14 on Incentives for Mentors / Coaches
This question asked the respondents whether they agree or disagree with the following statement:

Southern Region offers incentives to mentors and coaches involved in the development of electrical artisans.

The responses are summarised in Table 4.21 below:

Table 4.21: Incentives to Mentors and Coaches (n=72)

<table>
<thead>
<tr>
<th>OPINION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Neutral</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Disagree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>32</td>
<td>44</td>
</tr>
</tbody>
</table>

Source: Own Research

The above table reveals that 66 percent of the respondents indicated that they do not agree that the Southern Region offers incentives to mentors and coaches involved in the development of electrical artisans. Only 6 percent of the respondents thought otherwise.

The general view in the additional comments provided by the respondents is that it would be a good idea if the Southern Region were to consider offering incentives to mentors/coaches involved in the development of electrical artisans.

4.7 RESPONSES TO PART 4 ON EMPLOYMENT CONDITIONS
The respondents were given six possible reasons why people do not want to work in Southern Region as electricians, and asked to select three reasons that they would rate as first, second, and third in order of importance.
The possible reasons were provided as follows:

<table>
<thead>
<tr>
<th>REASON</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. An electrician works very unusual hours (e.g. call-outs at any time, standby, shifts, weekends, etc).</td>
<td></td>
</tr>
<tr>
<td>b. They have to live and work in remote areas with no amenities.</td>
<td></td>
</tr>
<tr>
<td>c. The job involves tough physical work.</td>
<td></td>
</tr>
<tr>
<td>d. They have to work in hot, cold, or wet conditions.</td>
<td></td>
</tr>
<tr>
<td>e. They fear the danger of injury.</td>
<td></td>
</tr>
<tr>
<td>f. The job pays low wages.</td>
<td></td>
</tr>
</tbody>
</table>

Responses are presented graphically in the following figure:

**Figure 4.10: Top Most Important Reasons (n=72)**

From Figure 4.10 above the reason rated by the majority of respondents as the top most important as to why people do not want to work in Southern Region as electricians is because **an electrician works very unusual hours**. It can be observed that low pay and remote geographic areas feature second and third, respectively.
4.8 RESPONSES TO PART 5 ON OTHER REASONS FOR THE SHORTAGE OF ELECTRICAL ARTISANS

The last question of the questionnaire was asked in an open-ended manner to invite the respondents to express any view on what they believed were reasons for the cause of the shortage of electrical artisans in Eskom Southern Region.

Reasons similar to those already cited in previous questions were raised by respondents. There were also other additional themes that did emerge, and these are mentioned below:

Respondents indicated that they believe that the turnover of electrical artisans is high amongst those individuals who were already qualified artisans when they were recruited, and were also recruited from outside Eskom. The view is that these artisans do not make the grade in their positions and, as a consequence, end up exiting the company very soon after being appointed.

Respondents also felt that the intake of trainees per year is not adequate. An opinion was expressed by respondents that the learnership program does not serve Eskom Southern Region’s purpose as trainees in the program are not necessarily “pipelined” for Southern Region. Respondents expressed the view that as long as apprenticeships are not revived and run as before, the region will not succeed in its attempt to build a pool of qualified electricians.

The issue of non-competitive salaries offered in the Eastern Cape was also cited. Respondents believe that Eskom Southern Region has failed to introduce retention strategies with incentives that not only lure electricians from companies outside the Eastern Cape but also ensure that they remain in the Southern Region.

Respondents also thought that there was an over-emphasis on qualifications at the artisan entry-level. Some of the comments made are quoted verbatim below:
“People do not want to work in Southern Region as electricians because the entry requirements are too high. Target the person who loves to work with his hands and not the person who loves to study to become the manager. We are fixed on qualifications. The electrician never uses N6 in the field. He uses his hands, tools and a practical brain, and the sooner we realise this the sooner we will start attracting the right people”.

“We need to stop expecting engineers for artisan positions (importance on theoretical qualifications). I have been a supervisor for more than 10 years, and the most successful artisans are the ones with a standard eight or maybe an N3. These people want to work with their hands and not sit in an office, yet somewhere, someone decided that these individuals are not good enough for society”.

“Speak to any apprentice, and you will find that their ultimate aim is to get an office job as such jobs pay better than field jobs. Working conditions in the offices are also not as harsh, and the hours are regular (8:00 – 16:00). The field is seen as a stepping stone towards that goal by the apprentices”.

“I think the shortage is not only in Southern Region, but country-wide in Eskom Distribution. One reason is that a lot of technical posts in Distribution are graded lower than, for example, in Transmission for doing the same work. This should be rectified”.

4.9 SUMMARY
In Chapter Four, the results of the questionnaire were analysed. Each question, including the biographical information section, was analysed individually with the aid of frequency tables, bar charts or pie charts as appropriate.

This chapter also provided data for the resolution of all six sub-problems as discussed in Chapter One.

In Chapter Five, the results of the document study and interviews will be presented. An analysis of these results will be integrated with the findings of the literature study conducted in Chapter Two and the findings of the empirical study conducted in Chapter Four. The aim of this analysis will be to resolve all six sub-problems and answer the main research problem.
CHAPTER FIVE

AN INTEGRATION OF RESULTS FROM INTERVIEWS AND DOCUMENT STUDY WITH FINDINGS OF THE LITERATURE STUDY AND EMPIRICAL STUDY

5.1 INTRODUCTION

In Chapter Four, an empirical study was conducted utilising data collected from the questionnaire that was administered. The collation and analysis of the data also presented an opportunity for an overview of the content of the questionnaire. The results were presented in the form of frequency tables, charts and graphs, followed by analysis and interpretation of the results.

Chapter Four also assisted in resolving all six sub-problems as discussed in Chapter One.

In this chapter, the results and interpretation of the document study and interviews will be presented. An analysis of these results will be integrated with the findings of the literature study conducted in Chapter Two and the findings of the empirical study conducted in Chapter Four. The aim of this analysis will be to answer the main research problem and to reinforce the answers to the sub-problems.

The main research problem was stated in Chapter One as follows:

Is the Southern Region of Eskom Distribution Business addressing the skill shortage problem with specific focus on electrical artisans?

5.2 RESULTS OF THE INTERVIEWS AND DOCUMENT STUDY

Overall, twelve interviews were conducted, with each interview being completed on average in 40 minutes. A structured set of questions formed the core questions in each interview. Those interviewed included Eskom Southern Region management representatives from the Field Services Department, Major Engineering Works Department, and Human Resources Department; a
management representative from the Engineering Division at Eskom Distribution Head-Office; part-time shop-stewards representing the three labour unions recognised by Eskom; and an external training administrator from the Lovedale Further Education and Training College. The list of names of those interviewed and the interview questions are included in Annexure B.

In addition to being interviewed, three individuals from Eskom Southern Region served as a reference group for the researcher. This group facilitated access to additional materials and reports with relevance to the research, and advice about persons to be interviewed. They have also been highlighted in Annexure B.

5.2.1. Drivers for Change

Through the interviews it was confirmed that the Eskom Southern Region business mission is distribution of electricity to consumers in all the areas in the Eastern Cape for which Eskom is licensed to supply electricity. The Eskom Distribution Business Plan (2004) expresses the Distribution Strategic Intent as follows:

“Eskom Distribution will lead in the provision of electricity services and customer satisfaction through empowered, sustainable regional businesses, for the benefit of our country.”

At the time of this research, it was public knowledge that the last 18 months had seen Eskom experience an increasing number of large-scale electricity outages. An Eskom Crisis Recovery Report (May, 2008) has attributed this deterioration in the Eskom electrical power system’s security to a number of factors that include increased demand growth, an increase in generating plant unplanned outages due to being utilised at higher rates than normal, primary energy constraints due to coal quality and a lack of additional available capacity.

In a Pretoria News article by Matthew Savides (November, 2007), Logan Pillay, an Eskom consultant, was quoted as having indicated that Eskom was
facing skills shortages that were also largely responsible for the power problems faced in South Africa. He was further quoted as saying that the skills needed for maintenance were non-existent. The article blamed overseas countries like Australia, New Zealand, and the United Kingdom for luring skilled electricians away from South Africa with money and better working conditions. In a press release titled “Eskom Skills Crisis” and compiled by the trade union Solidarity’s researcher, Francois Calldo (January, 2008), the trade union made an allegation that skill shortages at Eskom played an important role in electricity capacity problems. This allegation was, however, soon refuted by the secretary-general of the National Union of Mineworkers (NUM), Frans Baleni (January, 2008), in the newsletter Fin24.com.

The concern about adequacy of skills reflected in the above paragraphs underpins the importance of having a skilled, knowledgeable and adaptable workforce for the sustainability of an organisation’s performance.

When participants in the interviews were asked what they thought were business change drivers in the Southern Region, almost all mentioned the need to ensure security of electricity supply as a key change driver. Security of Supply (SoS) is one of the pillars in the Eskom electricity crisis recovery program (Eskom Southern Region Business Plan, 2008). Among other things, it places special emphasis on technical training.

A common consequence of the skills shortages identified through the interviews was deterioration in Southern Region’s business key performance indicators. Individuals interviewed expressed concern about poor performance as reflected in the region’s Balanced Score Card. They believed that the shortage of electrical artisans has particularly affected technical performance, safety performance, customer satisfaction, and the human resource sustainability.
5.2.2. Enhanced Human Capital Capabilities
A key goal expressed in Eskom Distribution’s Human Resources Business Plan 2006 -2011 (2006) is enhanced human capital capabilities. To attain this goal, this Business Plan (2006) stated the primary objective as being to attract, acquire, develop and retain core and critical skills in support of current and future strategic ambition.

5.2.2.1. Attracting People to Careers as Electricians
Both the questionnaire respondents and interview participants felt that Eskom Southern Region were not doing enough to attract skills to either the electrical artisan learnership program or the electrical artisan apprenticeship program. There was general criticism on information about the bursaries offered to high school students to pursue studies leading to a career as electrical artisans not being disseminated widely enough. Most respondents felt that awareness about these Eskom bursaries for both rural and urban students was poor.

The general view was that Southern Region fails to market the electrical artisan program even internally to own employees. This then makes it difficult for employees to share the information with relatives, friends, or other people in communities where they live. The importance of the need to market the career of an electrical artisan at Eskom was strongly emphasised during the interviews. The sentiment expressed was that, in the past, artisanship used to be a prestigious skill that was valued in the workplace. However, in the post-apartheid era, as educational and employment opportunities opened up, more and more young people aspired to professional careers that were previously closed to them and the artisan came to be less appreciated and valued (Grawitzky, 2007).

According to Grawitzky (2007), there had been discussions in the past on how to build the image of the artisan. From the interviews, it was also confirmed that, some years ago, Eskom had attempted to set up an institute for artisans to raise the image of artisans in the public arena. Apparently, in 1992, Eskom had
launched a project designed to create a skills-respect culture with a strong focus on enhancing the image of the artisan (Verster, 1995). Some of the initiatives for the project included:

- A career path for artisans
- Eskom Skills Olympics and Artisan Challenge Programmes. These were mechanisms to compete, compare, recognise and reward technical excellence
- Removal of low status symbols
- German Master Artisan Program
- Establishing a professional association for artisans which would play a pivotal role in accreditation audits and as part-time trade testing officials - thus monitoring and influencing the quality of the end-product they allow into their trade. The overall mission of this association was to enhance the professional image of the artisan.

It was with an air of nostalgia that some of the interview participants expressed the hope that some of the ideas above could be resurrected so that young people could be attracted again to the electrical artisan career.

5.2.2.2. Acquiring Skills
Table 5.1 below reports on the number of persons trained in both the Learnership and Apprenticeship programs between 2003 and 2008. The report reveals that it had taken Eskom Southern Region four years, since the government’s flagship National Skills Development Strategy (DoL, 2001), to enrol its first trainees in learnerships for electrical artisanal skills in 2006. This was three years after the Growth and Development Summit of 2003 which involved government, business, and labour. It was this summit that took resolutions privileging the training of unemployed learners over workers already in the formal economy who, although they had access to employment, were also in need of significant skills upgrading (Kraak, 2008).
It is striking that the first two years of learnership enrolment also saw an absence of apprenticeship registrations. This gap confirms the confusion that prevailed about whether or not apprenticeships had been abolished following the introduction of learnerships (Grawitzky, 2007). The numbers trained through apprenticeships between 2003 and 2008 seem quite low for the Eskom Southern Region which has no less than 18 Technical Service Centres (TSC) within the Field Services Department alone.

Information from the interviews revealed that the retention rate of trainees in the apprenticeship program has been at about 23.8 percent per annum while turnover in Field Services artisan positions over the last five years has been about 110 (ESR HR Admin, October:2008). This turnover translates to 22 employees per annum. The trainee retention rate and artisan turnover rate would indicate a need to train about 93 apprentices per annum. This indicative figure supports the opinions expressed by respondents in Section 4.6 about the adequacy of the number of trainees placed in the apprenticeship program. The Southern Region has certainly not been putting enough numbers in the training programs.

The low numbers of trainees placed at the TSCs were confirmed by the questionnaire respondents as well as the interview participants as being inadequate to mitigate the shortage of artisans in the Southern Region. This shortcoming was also confirmed by the Field Services Manager who was interviewed. She indicated that a five-year development plan she was working on, for 2009 and onwards, would consist of 80 trainees per year (between the learnership and apprenticeship programs). Her justification for this need is that she would also be establishing seven new Technical Services Centres which have been necessitated by the vast expansion of the electrical power system and the increased customer base. According to her, most of the expansion is in the Mthatha area, thereby confirming an opinion expressed by questionnaire respondents that suggested that the greatest need for electrical artisans is in the Mthatha area.
Table 5.1: Apprenticeship and Learnership Trainees: 2003 - 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Learnership Number Trained</th>
<th>Apprenticeship Number Trained</th>
<th>Number Taking Trade Test</th>
<th>Number Passed Trade Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2004</td>
<td>0</td>
<td>15</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2005</td>
<td>0</td>
<td>18</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>2006</td>
<td>54</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>35</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>35</td>
<td>21</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Eskom HR Training & Development Dept: (30 Sept 2008)

Another observation that the interview participants made was that, for the last two years or so, trainees on learnerships were released, upon completion of training stipulated in learnership agreements, to either seek another learnership opportunity somewhere else or look for employment. Unlike apprentices, these learnership trainees are not indentured by Eskom. This means that very few of the qualifying trainees were employed in the Southern Region as artisans between 2003 and 2008.

Disregarding the number of trainees who passed their trade tests, between 2003 and 2008, and merely focusing on those that were trained annually, a training rate can be determined. The electrical artisan training rate is the ratio of trainees that can potentially be employed as artisans to those already employed as artisans. It measures the extent to which an occupation is reproducing itself through the domestic/internal training system (Toner, 2003). The number of trainees is the stock of all trainees at a given point in time.

The training rates between 2003 and 2008 are presented in Table 5.3, having been derived from data in Table 5.1 and Table 5.2. The last column of Table 5.2 sums up the electricians employed in Major Engineering Works and Field Services positions.
An integration of Results from Interview and Document Study with Findings of the Literature Study and Empirical Study

Table 5.2: Electricians Employed in Southern Region 2003 - 2008

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SCO</th>
<th>PCO</th>
<th>STO</th>
<th>PTO</th>
<th>TSO</th>
<th>FSO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>17</td>
<td>2</td>
<td>71</td>
<td>77</td>
<td>21</td>
<td>8</td>
<td>196</td>
</tr>
<tr>
<td>2004</td>
<td>12</td>
<td>4</td>
<td>59</td>
<td>73</td>
<td>22</td>
<td>9</td>
<td>179</td>
</tr>
<tr>
<td>2005</td>
<td>10</td>
<td>3</td>
<td>65</td>
<td>74</td>
<td>20</td>
<td>10</td>
<td>182</td>
</tr>
<tr>
<td>2006</td>
<td>8</td>
<td>4</td>
<td>89</td>
<td>78</td>
<td>19</td>
<td>10</td>
<td>208</td>
</tr>
<tr>
<td>2007</td>
<td>7</td>
<td>3</td>
<td>84</td>
<td>74</td>
<td>17</td>
<td>5</td>
<td>190</td>
</tr>
<tr>
<td>2008</td>
<td>7</td>
<td>3</td>
<td>83</td>
<td>58</td>
<td>18</td>
<td>6</td>
<td>175</td>
</tr>
</tbody>
</table>

Source: Eskom HR Administration: (21 Nov 2008)

In Table 5.3, the first three years reflect a steady upward trend. However, in the face of a skill shortage problem, the training rate in those years was far too low. The dramatic surge in training rate between 2006 and 2008 may be misleading. Management in Southern Region acknowledged, during the interviews, that trainees in the learnership program were not being retained for employment following the expiry of their learnership agreements; they were allowed to exit the program and leave the Southern Region. With hindsight, this is a practice that management now regrets and is viewed as a lost opportunity.

Table 5.3: Annual Training Rates: 2003 - 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Number Trained</th>
<th>Electricians Employed</th>
<th>Training Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>12</td>
<td>196</td>
<td>6.1</td>
</tr>
<tr>
<td>2004</td>
<td>15</td>
<td>179</td>
<td>8.4</td>
</tr>
<tr>
<td>2005</td>
<td>18</td>
<td>182</td>
<td>9.9</td>
</tr>
<tr>
<td>2006</td>
<td>54</td>
<td>208</td>
<td>26</td>
</tr>
<tr>
<td>2007</td>
<td>35</td>
<td>190</td>
<td>18.4</td>
</tr>
<tr>
<td>2008</td>
<td>56</td>
<td>175</td>
<td>32</td>
</tr>
</tbody>
</table>

Source: Derived from Tables 5.1 and 5.2

During the course of this research, the Southern Region advertised extensively in the local and national newspapers for electrical artisan vacancies in the Field Services Department. An example of one such advertisement, which appeared in The Herald of the 5 December 2008, is shown in Figure 5.1 below. There were 56 vacancies for the Senior Technical Official and Principal Technical
Official positions. The Southern Region had, in fact, a total of 100 vacancies in the technical-related positions reflected in Table 5.4 below.

Table 5.4: Vacancies in Field Services

<table>
<thead>
<tr>
<th>POSITION TO BE FILLED</th>
<th>NUMBER OF VACANCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Technical Official</td>
<td>8</td>
</tr>
<tr>
<td>Technical Official</td>
<td>36</td>
</tr>
<tr>
<td>Senior Technical Official</td>
<td>32</td>
</tr>
<tr>
<td>Principal Technical Official</td>
<td>24</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: HR Administration (21 November 2008)

From the interviews with HR and Field Services management, it was revealed that 44 of the vacancies which were intended for the Assistant Technical Official (ATO) and Technical Official (TO) positions would be filled with casuals and trainees from the learnership program. Appointment of learners to the TO positions would help Field Services create a pipeline for the STO positions thereby mitigating for the shortage of electricians. However, the 100 vacancies in 2008 suggest that the training rates are not adequate as the learner pipeline created would run dry before all vacancies are filled.
The above advertisement does not specify the number of vacancies for the STO and PTO positions. These vacancies were confirmed with information from Human Resources, as reflected in Table 5.4 above.

The interviews confirmed that the positions employing artisans, namely, STO, PTO, SCO, PCO, TSO, and FSO were regarded as areas of skill shortage.

The literature review in Chapter Two discussed, among other things, indicators of skill shortages. The vacancy rate was one of the indicators discussed. The
absolute number of vacancies, as in Table 5.4 above, is not the most satisfactory guide to skill shortage. According to Castley (1996), a better indicator is the vacancy rate (i.e. vacancies expressed as a percentage of total positions). Between Table 5.2 and 5.4, a vacancy rate for 2008 can be derived for STOs and PTOs. This rate is shown in Table 5.5 below.

Table 5.5: Vacancy Rate for Artisan Positions in 2008

<table>
<thead>
<tr>
<th>Position</th>
<th>Employed</th>
<th>Vacancies</th>
<th>Established Positions</th>
<th>Vacancy Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STO</td>
<td>83</td>
<td>32</td>
<td>115</td>
<td>28</td>
</tr>
<tr>
<td>PTO</td>
<td>58</td>
<td>24</td>
<td>82</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Derived from Table 5.2 and 5.4

Castley (1996) warns that vacancy rates, as a measure of skill shortage, have to be treated with some caution as vacancies may be related to the budget and tied to the availability of funds. He also cautions that vacancies may be allowed to exist to create room for internal promotions.

It was established through the interviews that the Field Services vacancies advertised had not been “canned” due to budget constraints or for promotional considerations. They had, however, remained vacant as a result of not being able to recruit suitable candidates as well as because of capacity constraints within the recruitment section of the Human Resources Department. Incidentally, it was confirmed that it takes on average about 107 days to fill a vacancy versus a norm of 65 days. The overall vacancy rate for all Field Services vacancies was confirmed, during the interviews, to be at greater than 10 percent against a norm of 5 percent. The Field Services Manager considered such a rate to still be quite high.

5.2.2.3. Developing Skills

According to Castley (1996), in seeking solutions to skill shortages, the following three possibilities could be considered:
• to increase the outflow of students from training institutions;
• to improve the utilisation of those currently employed; and
• to upgrade existing personnel.

All the Eskom people interviewed stated that the Southern Region has not expended much effort in establishing partnerships with schools and further education and training (FET) institutions. They argued that these partnerships could ensure a steady flow of students ready to enter the training programs that lead to becoming a registered artisan. There was strong emphasis placed on the need to use schools as a pipeline especially for the learnership and apprenticeship programs. A related opinion was expressed by respondents to the questionnaire as already discussed in Chapter Four and section 5.2.2.1 of this chapter.

As already discussed in Chapter Two, training towards registration as an electrical artisan could follow any one of the following four routes:

(a) the traditional apprenticeship system;
(b) learnerships;
(c) internships; and
(d) recognition of prior learning.

The above are the four routes for becoming a registered artisan based on accredited training providers and trade tests.

A statement, not corroborated with evidence, was made during the interviews that the failure rate is very high especially in the learnership program. This failure rate was attributed to inadequate preparation of students at school-level. Another perspective given on the drop-out rate from both the apprenticeship and learnership programs was that the focus of the training provided was skewed towards preparation for a trade test. The criticism levelled at the training with emphasis on the trade test was, supposedly, because such training emphasizes factory-type work and house wiring and has less relevance to Eskom-type work.
From the interviews, Eskom-type work for artisans was described as work that has to do with the repair and maintenance of powerlines at the Technical Services Centres; specialised work on basic repairs to transformers, circuit breakers, current transformers, and links, by the Technical Specialist Group; and live-work on powerlines and in substations, also by the Technical Specialist Group.

The argument advanced about the training being “less relevant to Eskom-type work” because of the focus on getting trainees ready for the trade test sheds more light on employer preferences when they recruit externally. In Chapter Two, there were four classifications for skills shortages suggested by Richardson (2006). Among these four, there was ‘quality gap’ which is described as follows:

There are sufficient people with the essential technical skills who are not already using them and who are willing to apply for the vacancies, but they lack some qualities that employers consider to be important.

Also in Chapter Two, ‘skills gap’ is described as a situation in which employees in an occupation may have the necessary vocational qualifications for the occupation, but not the specialised knowledge, skills and experience needed to adapt to new technology and new methods of work (DEST, 2002:3).

The interviews may have revealed another reason for the high vacancy rate seen in section 5.2.2.2, other than those reasons already mentioned. The employer’s perception of the training towards the trade test and its lack of relevance to Eskom-type work may be a contributor to the existence of a high number of vacancies. Also, further training of trainees in apprenticeships or learnerships in skills relevant to Eskom-type work may have the effect of extending the training lead times. The unintended consequence of this would be to prolong the skill shortage problem.

Much attention on addressing the shortage has been given to the potential output of trainees but too little attention is paid to the quality, performance and development of existing personnel (Castley, 1996). During the interviews, Field
Services management characterised the shortage problem as quite severe in the STO and PTO positions within the Technical Specialist Group. According to this management, these individuals are highly marketable because of the specialised skills they possess.

Despite the existence of skill shortages, it would appear that no consideration is being given to providing existing artisans in the Technical Services Centres with the additional skills that are in shortage within the Technical Specialist Group. For example, these individuals could be trained in live-work and substation auxiliaries as a means of offsetting the shortage at TSG. There are other similar opportunities that could be explored.

Recognition of Prior Learning (RPL) involves the assessment and formal recognition of previously unrecognised skills and knowledge that an individual has developed outside the formal education and training system. It removes the need for the learner to undertake unnecessary formal training. According to Mitchell, McKenna, Perry, and Bald (2005), RPL should enable employers to clarify the skills level of existing staff. They contend that if RPL is applied diligently, it should also assist employers to close the existing skills gaps.

In Chapter Four, analysis of the responses to the questionnaire revealed that the majority of respondents were of the opinion that the Southern Region does not apply RPL. They agreed with the statement that in the Southern Region “there are enough experienced people who have been working as assistants to electricians who are willing to become electricians but Southern Region do not apply Recognition of Prior Learning”. The Training and Development Advisor interviewed was quite emphatic about the need for effective strategies to mitigate the skills shortage problem. Among other strategies he was advocating was the application of RPL to the existing Assistant Technical Officials. Assistant Technical Officials are semi-skilled workers who are employed as hands to the electricians.
The majority of questionnaire respondents also felt that the Southern Region has not endeavoured enough to improve the utilisation of those currently employed. Their view was that ‘although there are enough people in the Southern Region with the necessary basic technical qualifications required to be trained as electrical artisans and who are willing to undergo such training, Eskom Southern Region does not provide them the opportunity’. A similar view was expressed during the interviews. Some of the interview participants suggested that the Southern Region should embark on active recruitment from within the company for the apprenticeship program.

The Eskom Procedure on Learnerships (2008) cites, among other duties of the employer, the need to provide the learner with appropriate supervision, mentoring and coaching at work. The opinion expressed in Chapter Four by the questionnaire respondents suggests, however, that mentoring and coaching are not effective in both the learnership and apprenticeship programs of the Southern Region. This view was confirmed during the interviews. The problem with the effectiveness of mentoring/coaching was attributed to the low experience base of existing artisans. There is also need to enhance mentor training initiatives.

The discussion in this section has revealed the need for the Southern Region to offer greater support for the education and training of new and existing personnel. There could also be opportunities for the reallocation of resources within the company (i.e. between the sections within Field Services and also between Field Services and Major Engineering Works).

5.2.2.4. Retaining of Skills
In Section 4.5.1, a need for better salaries was rated by the respondents to the questionnaire as the top reason for the brain drain from the Southern Region. In Section 4.7, it was revealed that when respondents were asked to express their opinion about the job of an electrician in the Southern Region, the majority of
them indicated as unfavourable the unusual hours that an electrician must work. Their opinion was also not favourable towards having to live and work in remote areas with no amenities.

Responding to a question on staff turnover, during the interviews, the HR Planning and Risk Manager indicated that the turnover rate for the Southern Region in the core, critical, and scarce skills categories had been fluctuating between 12 and 15 percent against a limit of 10 percent. On being probed about which retention strategies are used in the Southern Region, she indicated that training and development and increased pay were by far the most frequently used means of improving retention. She further indicated that HR monitors exit interviews and employee satisfaction surveys as a means of gaining staff feedback to inform HR strategies on retention.

Line management interviewed from both Major Engineering Works and Field Services acknowledged that training and development could serve as a means of retaining skills. They expressed their dilemma as often having to be faced with situations where they have fewer staff available for training due to operational demands. They also indicated that they cannot afford the lost time in having staff attend training off site. Their view on remuneration is that the pay increases offered have not been competitive enough to discourage their artisans from looking for other jobs outside. In the words of the Field Services Manager, “the fact is that it is money that keeps these guys around because, in truth, the TSC environment is not that worker-friendly”.

The interviews also confirmed that there is now an attempt from HR to place new recruits closer to the areas from which they come. There was also mention of the introduction of housing subsidy incentives for remote areas. It was confirmed, however, that since these are new retention interventions, they have not yet been widely applied.
The interviews and questionnaire responses have highlighted an important need for the Southern Region to deal decisively with the “brain drain”. The Eskom Distribution HR Business Plan (2006) calls for the implementing of “best practice based retention strategies, focusing on core, critical, and scarce skills”. The same Eskom Distribution HR Business Plan (2006) highlights the need for “ensuring a focused remuneration approach to core, critical, and scarce skills”.

The high vacancy rates, high staff turnover rate, and the concerns about low pay are all indicators of a need for effective retention interventions. It would seem that interventions implemented have not been effective especially with respect to the retention of electrical artisans in the Southern Region. Interview participants felt that the situation will get worse if left unattended as it will not correct itself.

In the face of such serious skill shortages, it would be expected for the Southern Region to implement active policies to improve the situation.

5.2.3. Labour Union Perspectives
Skill is considered central to the bargaining between labour and management over wages (Rainbird, 1992). Labour unions would generally be interested in improving the skill level of their members because higher skills increase their bargaining power in wage negotiations (Shah and Burke, 2003). It is to be expected then that the views of unions on skills shortages, in terms of quantity and quality, would be at variance with those of management. This section explores union perspectives on skill shortages in the Southern Region.

Three part-time shopstewards from the unions that are recognized at Eskom were interviewed. The unions are Solidarity, National Union of Mineworkers (NUM), and National Union of Metalworkers of South Africa (NUMSA). Given the different stances that these unions have on certain of the laws enacted to regulate the workplace, it would be expected that their perspectives on skill shortages would not be uniform.
These differences were quite clear when listening to their perspectives on factors that have made a contribution to the current shortage of electrical artisans in the Southern Region.

- Eskom’s Affirmative Action strategy that precluded employment of white workers in certain job levels were fingered for leading to the exit of skilled whites through “space-creation” separation packages.
- Failure of government planning resulting in a shift from an era characterised by economic stagnation in the 1990s to one in which, unanticipated, the rate of economic growth is far outstripping the ability of supply-side institutions to provide the necessary quantity and quality of skills.
- Privatisation and commercialisation of state owned enterprises (SOE) such as Eskom, Sasol, Telkom, and SpoorNet had the effect of shrinking the number of workers recruited into apprenticeships. Many training centres within the SOEs (including Eskom Southern Region) closed down as a result.
- Casualisation has contributed to the decline in investment in the training of existing workers and erosion of the skills base.

Although there is a convergence of views with management on some of the strategies that could be employed to mitigate the shortages, the perspectives are still at variance on some. Examples are given below.

- Artisans should be paid above the market to discourage other companies ‘poaching” from Southern Region by offering higher wages.
- Suspend or abolish Affirmative Action.
- Opposed to international recruitment of artisans. Train more locally.
- Re-Employment of Retired Artisans is not supported as, by design, the retired artisans would mostly be white. This would create an imbalance in the diversity of the workplace achieved through the Employment Equity legislation.
It would appear to be in the interest of the labour unions to over-state the extent of the present skills shortage because this helps push up the wages of new entrants and increases union membership (Shah and Burke, 2003). The skills shortage problem was such an urgent problem as to lead to Solidarity opening their own training college for artisans. It is encouraging though to see labour unions supporting government efforts to mitigate the skills shortage problem through their involvement in the government-led Joint Initiative for Priority Skills Acquisition program.

5.3 SUMMARY
In Chapter Five, an attempt was made to integrate the results from the document study and interviews with findings of the literature study in Chapter Two and those of the empirical study from Chapter Four. Through the analysis and interpretation that was presented in this chapter, it has been possible to resolve the main research problem, “Is the Southern Region of Eskom Distribution Business addressing to the skill shortage problem with specific focus on electrical artisans? Some of the other sub-problems resolved in Chapter Four were further clarified.

Management and labour union perspectives on the causes of skill shortages were explored. The consequences of the shortage problem in the Southern Region were revealed through the interviews. Remedial measures considered by management to mitigate the shortages were discussed.

Shortcomings were highlighted in the management strategies to attract, recruit, develop, and retain core, critical, and scarce skills.

In Chapter Six, recommendations and conclusions to address the challenging areas in the skill shortage problem will be presented.
CHAPTER SIX
CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION
In Chapter Five, the findings of the literature study were integrated with those of the empirical study in order to complete answering the sub-problems and resolve the main research problem. This was achieved through interpretation of results from the questionnaire, interviews and document study. The interviews allowed for an exploration of management and labour union perspectives on causes and consequences of skill shortages.

In this chapter, recommendations will be made on possible solutions to the shortage of electrical artisans in the Eskom Southern Region. The methodology used in conducting this research will be reviewed and opportunities for future research highlighted. This will then be followed by the deriving of conclusions to this research.

6.2 SUMMARY OF FINDINGS BASED ON THE STUDY
In order to resolve the main research problem, Is the Southern Region of Eskom Distribution Business addressing the skill shortage problem with specific focus on electrical artisans? , the following sub-problems were identified and resolved in preceding chapters as summarised below:

1. At what level of skill and/or position does the greatest shortage of electrical artisans exist?
The greatest shortages of electrical artisans were found to be in the following positions, in order of priority:
   a. Senior Technical Official;
   b. Principal Technical Official;
   c. Senior Construction Official; and
   d. Principal Construction Official
2. What do stakeholders in Eskom’s Southern Region believe is the cause of the shortage of electrical artisans?

The second sub-problem above was answered in both Chapter Four and Chapter Five, with need for better pay highlighted as the top most important reason for the brain drain from the Southern Region, shortly followed by working hours.

3. What does research reveal about the role of the apprenticeship system in Eskom’s Southern Region?

Sub-problem three, above, was also resolved in Chapter Four. The research showed that the apprenticeship system started to limp in Eskom, as a whole, because of the privatisation and commercialisation of State Owned Enterprises. Many organisations, including the Eskom Southern Region, were confused by the introduction of the new learnerships, believing that apprenticeships were being discontinued. Apprenticeships slowed down with a slow implementation of learnerships in Southern Region. Not enough apprentices were being trained to meet the demand. Vacancies remained unfilled for long periods.

4. Has Eskom Southern Region implemented effective Learnerships to address the shortage of electrical artisans?

Eskom Southern Region only introduced learnerships three years after inception. This could explain the shortages of adequately qualified technical personnel. The impact can be seen in the vacancy rates.

5. What are the formal education and training interventions employed by Eskom Southern Region to reduce the skill shortages?

Chapter Four revealed that, although Southern Region offered bursaries to Mathematics and Science students, information about the bursaries was not widely publicised. It was also revealed that not the most suitable electrical artisans were utilised as trainers. Existing employees were not being offered training opportunities to provide them with further skills, nor was recognition of prior learning applied widely in the Southern Region. Internal development of personnel was not successful.
6. What other internal strategies are being applied by Eskom Southern Region to resolve the skill shortage of electrical artisans?

The sixth sub-problem was also answered in Chapter Four and Chapter Five. It was revealed that mentorship, among other strategies, is not effectively implemented in the Southern Region. There are not enough mentors. As a result, trainees do not receive individual attention from mentors. Mentors are not given adequate mentoring skills.

6.3 CONCLUSION

The results of the empirical study as well as the interviews and document study have revealed that the answer to the main research question is ‘no’. The Southern Region of Eskom Distribution Business is not addressing the skill shortage problem adequately with respect to electrical artisans. Positions employing electrical artisans have vacancies that have remained unfilled for long periods of time. The positions are hard to fill because prospective applicants are turned off by the awkward hours expected that Southern Region’s electrical artisans work. Artisans leave the company because they are not adequately remunerated. Apprenticeship and learnership programs are not effective as the training rates are too low to have any positive impact on the shortage problem. Internal personnel development strategies and mentoring programs have not been successful.

6.4 POSSIBLE REMEDIAL MEASURES FOR SKILL SHORTAGES

- Development of a holistic strategy to address the skills shortage within the Electricity Distribution Industry.
- Review capacity of training facilities. Also, the number of trainers may not be adequate.
- Review the existing mismatch between the size of the electrical network built and the number of electrical artisans employed.
- Participation in the Eastern Cape provincial JIPSA.
- Establishing of special relationships with local schools through “Adopt-A-School” programs.
Conclusion and Recommendations

- Revival of the Master Artisan program to enhance the image of the electrical artisan.
- Enhance the HR Skills Planning function with more resources.
- Implementation of a competency-based wage arrangement for electricians. Continual adjustments to their pay may be necessary to make it more competitive in relation to the external market.
- Deployment of trainees recruited from remote areas back to the same areas once they qualify as artisans.
- Implementation of remote area incentives to entice electricians to seek permanent employment in those areas.
- Compensate for shortages by increasing overtime to increase the hours of work per employee.
- Consider implementation of shifts in the Field Services environment since it is a 24/7 operation.
- Upskilling of staff to be able to close the skills gaps resulting from quantitative shortages.
- Application of Recognition of Prior Learning.
- Formalising Mentorship and Coaching.
- Introduction of Accelerated Apprenticeships and Pre-Apprenticeship Programs.

6.5 LIMITATIONS OF THE STUDY
The researcher is of the opinion that the goals of the study have been adequately realized. While acknowledging that limiting the research to the Eskom Southern Region made for a manageable project in terms of time, it is the researcher’s opinion that a wider scope covering all of Eskom Distribution could have made for a richer study.

Within the Southern Region, a sample larger than the seventy-two respondents could have provided more depth to the study. As the interviews proved to be a very useful source of information, the researcher would have liked to conduct more personal interviews, and to have included those artisans that have since left the organisation.
6.6 OPPORTUNITIES FOR FURTHER RESEARCH
This research study on causes and consequences of skills shortages was an examination of the experience of one organisation in the electricity distribution industry, Eskom Southern Region. Although the focus of the study was also on one skill category, the electrical artisan trade, it has revealed the complexity of the causes of skills shortages. As the demand for skills differs across industries, the shortage of skills will also differ. Choosing the best strategies to address skills shortages will also differ across industries and across individual organisations within those industries. It is assumed though that some of the strategies recommended for this case study could be applicable to a wide range of occupations, organisations and industries.

For further research, it can be tested whether many of these strategies are applicable by extending this analysis of the case study to an investigation of the responses of other organisations or industries to their skills shortages.

6.7 SUMMARY
This last chapter was the culmination of a case study to investigate causes and consequences of skills shortages at Eskom Southern Region. The chapter presented a summary of findings from the research study conducted and recommendations on possible strategies for responding to the skills shortages. The research limitations already highlighted, above, underpin the fact that the causes and consequences of skills shortage identified through this study cannot be exhaustive. This means that the recommendations also made for responding to the shortages cannot be regarded as finite.
REFERENCES


OPINION SURVEY
Measuring

THE CAUSE OF THE SHORTAGE OF ELECTRICIANS IN THE SOUTHERN REGION AND POSSIBLE STRATEGIES TO ADDRESS THE PROBLEM

Section A. Biographical information
(Please complete by ticking the appropriate box)

Question 1: In which department do you work?

<table>
<thead>
<tr>
<th>Department</th>
<th>Tick with X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Services</td>
<td></td>
</tr>
<tr>
<td>Major Engineering Works</td>
<td></td>
</tr>
<tr>
<td>Network Services</td>
<td></td>
</tr>
<tr>
<td>HR (Recruitment)</td>
<td></td>
</tr>
<tr>
<td>HR (Training &amp; Development)</td>
<td></td>
</tr>
</tbody>
</table>

Question 2: In which Regional area is your workstation?

<table>
<thead>
<tr>
<th>Area</th>
<th>Tick with X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mthatha</td>
<td></td>
</tr>
<tr>
<td>East London</td>
<td></td>
</tr>
<tr>
<td>Queenstown</td>
<td></td>
</tr>
<tr>
<td>Port Elizabeth / Uitenhage</td>
<td></td>
</tr>
</tbody>
</table>

Question 3: What is your current man grade (old Paterson grading)?

<table>
<thead>
<tr>
<th>Man Grade</th>
<th>Tick with X</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBL /BBU</td>
<td></td>
</tr>
<tr>
<td>CCL</td>
<td></td>
</tr>
<tr>
<td>CCU / PA0</td>
<td></td>
</tr>
<tr>
<td>PPG / PPP / MMM / MMU</td>
<td></td>
</tr>
</tbody>
</table>

Question 4: How many years have you worked in the Southern Region?

<table>
<thead>
<tr>
<th>Number of Years</th>
<th>Tick with X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td></td>
</tr>
<tr>
<td>2 years to 5 years</td>
<td></td>
</tr>
<tr>
<td>More than 5 years</td>
<td></td>
</tr>
</tbody>
</table>
Section B. *Indicate your opinion by inserting the appropriate number (1, 2, 3, 4, or 5) in the table*

**EXAMPLE:**

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The following towns have good hospitals:

<table>
<thead>
<tr>
<th>Johannesburg</th>
<th>Cape Town</th>
<th>Grahamstown</th>
<th>Butterworth</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Part 1. AREAS OF SHORTAGE**

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Southern Region Field Services has enough electrical artisans in the following Field Services Areas:

<table>
<thead>
<tr>
<th>Mthatha</th>
<th>Queenstown</th>
<th>East London</th>
<th>Uitenhage/Port Elizabeth</th>
</tr>
</thead>
</table>

2. Southern Region has enough electrical artisans in the following occupations in Field Services:

<table>
<thead>
<tr>
<th>Senior Technical Official (STO)</th>
<th>Principal Technical Official (PTO)</th>
<th>Technical Services Officer (TSO)</th>
<th>Field Services Official (FSO)</th>
</tr>
</thead>
</table>

3. Southern Region has enough electrical artisans in the following occupations in Major Engineering Works (MEW):

<table>
<thead>
<tr>
<th>Senior Construction Official (SCO)</th>
<th>Principal construction Official (PCO)</th>
</tr>
</thead>
</table>
Annexure A

Additional comments on above …………………………………………………
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Part 2. REASONS FOR THE BRAIN DRAIN

(Select only three from the following in order of importance, with 1 indicating the top-most important, 2 indicating second most important, and 3 as third place in the order of importance).

Southern Region electricians leave the region for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. They leave due to Old Age Retirement</td>
<td></td>
</tr>
<tr>
<td>b. They leave to join other Eskom Divisionns</td>
<td></td>
</tr>
<tr>
<td>c. They leave to join other South African companies with better career opportunities</td>
<td></td>
</tr>
<tr>
<td>d. They leave to join other South African companies with better working conditions</td>
<td></td>
</tr>
<tr>
<td>e. They leave to join other South African companies that pay better salaries than Eskom Southern Region</td>
<td></td>
</tr>
<tr>
<td>f. They leave to open their own electrical contracting businesses</td>
<td></td>
</tr>
<tr>
<td>g. They leave South Africa to join companies from other countries</td>
<td></td>
</tr>
</tbody>
</table>

Part 3. EDUCATION AND TRAINING

1 (a). How many apprentice trainees were placed in your business unit (TSC or construction team) in the last one year or two?

<table>
<thead>
<tr>
<th>0</th>
<th>1 to 5</th>
<th>6 to 10</th>
<th>More than 10</th>
</tr>
</thead>
</table>

(b) The Southern Region has been putting enough trainees in the apprenticeship program for electricians.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

Additional comment on above …………………………………………………
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…………………………………………………………………………………………
2. (a) How many learnership trainees were placed in your business unit (TSC or construction team) in the last one year or two?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 to 5</th>
<th>6 to 10</th>
<th>Greater than 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

(b) Since the implementation of learnerships, Southern Region has been placing enough trainees in the learnership program for electricians.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Additional comment on above ..............................................................
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3. Southern Region offers bursaries to Math & Science high school students, and technical college students wishing to follow careers as electrical artisans.

(a) Information about these bursaries is easily accessible to students in urban areas

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(b) Information about these bursaries is easily accessible to students in rural areas.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
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Additional comment on above ..............................................................
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4. In many organisations many employees have the basic technical qualifications.

(a) Is this the case in Southern Region? 

YES  NO

If yes, 
(b) How many such employees are used in practical/hands-on and technical jobs that are closely related to the job of an electrical artisan.

<table>
<thead>
<tr>
<th>0 to 50</th>
<th>51 to 100</th>
<th>More than 100</th>
</tr>
</thead>
</table>

Additional comment on above

If yes, 
(c) How many such employees are used in non-technical jobs, that are not hands-on, outside of engineering (e.g. in Customer Services).

<table>
<thead>
<tr>
<th>0 to 50</th>
<th>51 to 100</th>
<th>More than 100</th>
</tr>
</thead>
</table>

Additional comment on above

5. The Southern Region has people who have the necessary basic technical qualifications required to be trained as electrical artisans and who are very willing to undergo training.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

Additional comment on above

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6. Although there are enough people in Southern Region with the necessary basic technical qualifications required to be trained as electrical artisans and who are willing to undergo such training, Eskom Southern Region does not provide them the opportunity.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

Additional comment on above .......................................................... 
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7. There are enough experienced people who have been working as assistants to electricians who are willing to become electricians but Southern Region does not apply Recognition of Prior Learning.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
</table>

Additional comment on above ..........................................................
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8. The Southern Region utilises its most suitable electrical artisans, regardless of age, as trainers in the apprenticeship and learnership programs.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

Additional comment on above ..........................................................
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9. The Southern Region utilises its older (so-called grey-beard) and experienced electrical artisans as trainers in the apprenticeship and learnership programs.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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Additional comment on above …………………………………………………
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10. The Southern Region has a well structured mentorship and coaching program for its apprenticeship and learnership programs.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
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<td></td>
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</tbody>
</table>

11. The Southern Region’s apprenticeship and learnership programs are accelerated so that trainees are able to qualify as electrical artisans earlier than normal.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
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Additional comment on above …………………………………………………
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12. How do trainers enhance the training of apprentices to get more of them to pass their trade tests?

(Possible answers to the above question are provided below. Indicate with a YES if you agree or NO if you do not agree:)

<table>
<thead>
<tr>
<th>Answer</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Trainers receive advanced training to improve their training skills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. The number of trainers made available to train is enough.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Apprentices are given individual attention by the trainers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Trainers allocate up to 8 weeks for pre-trade test preparation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Other (specify):</td>
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</tbody>
</table>

13. How do mentors and coaches enhance the training of apprentices to get more of them to pass their trade tests?

(Possible answers to the above question are provided below. Indicate with a YES if you agree or NO if you do not agree:)

<table>
<thead>
<tr>
<th>Answer</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mentors/Coaches receive advanced training to improve their mentoring/coaching skills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. The number of mentors/coaches assigned to apprentices is enough.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Apprentices are given individual attention by the mentors/coaches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Other (specify):</td>
<td></td>
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</tbody>
</table>

14. Southern Region offers incentives to mentors and coaches involved in the development of electrical artisans.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
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</table>

Additional comment on above

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Part 4.  EMPLOYMENT CONDITIONS

(Select only three from the following in order of importance, with 1 indicating the top-most important, 2 indicating second most important, and 3 as third place in the order of importance).

People do not want to work in Southern Region as electricians because:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. An electrician works very unusual hours (e.g., call-outs at any time, standby, shifts, weekends, etc).</td>
<td></td>
</tr>
<tr>
<td>b. They have to live and work in remote areas with no amenities.</td>
<td></td>
</tr>
<tr>
<td>c. The job involves tough physical work.</td>
<td></td>
</tr>
<tr>
<td>d. They have to work in hot, cold, or wet conditions.</td>
<td></td>
</tr>
<tr>
<td>e. They fear the danger of injury.</td>
<td></td>
</tr>
<tr>
<td>f. The job pays low wages.</td>
<td></td>
</tr>
</tbody>
</table>

Part 5.   WHAT ELSE DO YOU THINK IS THE CAUSE OF THE SHORTAGE OF ELECTRICIANS IN THE SOUTHERN REGION?

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THANK YOU FOR YOUR TIME AND FOR YOUR ASSISTANCE !!!
ANNEXURE B

INTERVIEW QUESTIONNAIRE
SHORTAGE OF ELECTRICAL ARTISANS

1. In your view, what are the change drivers in
   Eskom Southern Region’s Distribution Business?
   Do you see the impact of any of these drivers diminishing in any
   way?

2. Is there an artisan skills shortage in Eskom Southern Region?

3. If there is, where do you believe the skill shortages are most apparent
   currently in the Southern Region? Are they in particular occupations,
   and if so, which ones?
   Can you talk in more detail about how the current skills shortages that
   you identified are impacting on the Southern Region electricity
   distribution business?
   In your view, are the shortages going to resolve themselves through
   the way markets tend to operate or will they actually get worse, and if
   so, in what areas?

4. Do you see links between the change drivers, and the reasons for the
   existing skills shortages in Eskom Southern Region?

5. What is the impact of these specific areas of skills shortage that you
   mentioned for the Electricity Distribution Industry, and more
   specifically for Eskom Distribution Business?

6. As this research is mostly about identifying feasible solutions to the
   skills shortage, I want to focus on existing or potentially new
strategies that use formal education and training to respond better to resolving or managing the shortages you have identified ---- What do you think of the current formal education and training initiatives that are in place to help manage or to resolve the skills shortage? Where is this training working well to better manage and respond to the skills shortage? Where is it failing, and why?

7. In terms of using training to better respond to this skill shortage, what is being done by: (i) Eskom Southern Region; (ii) training organizations; (iii) industry more generally; and (iv) government ?

8. What else can be done by: (i) Eskom Southern Region; (ii) training organizations; (iii) industry more generally; and (iv) government?

9. We have come to the end of the interview; Is there anything else we have not covered that you would like us to talk about?

INDIVIDUALS INTERVIEWED
Archie Jaykaran (Eskom Distribution, Engineering, Head-Office)
Elsje Kamffer (Field Services Manager)
Martin Nkambule (Major Engineering Works Manager)
Nolita Dotwana (HR Practitioner)
Peter Swales (Technical Support Manager)
Sarvam Moonsamy ( HR Skills Planning and Risk Manager)
Sharad Bhagwan ( Training and Development Manager)
Vusi Khumalo (Training and Development Advisor)
Glen Jacobs (Lovedale FET)
Glen Scharnick (National Union of Metalworkers of South Africa)
Lawrence Ngendane (National Union of Mineworkers)
Raymond Long (Solidarity)

REFERENCE GROUP
Sarvam Moonsamy ( HR Skills Planning and Risk Manager)
Vusi Khumalo (Training and Development Advisor)
Nolita Dotwana (HR Practitioner)