AN INVESTIGATION OF THE FACTORS INFLUENCING THE SUSTAINABILITY OF SMALL- TO MEDIUM-SCALE ELECTRICAL CONTRACTING ENTERPRISES (SMECEs) IN THE CAPE PENINSULA

by

CHARL VISSER

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ABSTRACT

This study focuses on small- to medium-scale electrical enterprises (SMECEs) in the Cape Peninsula, and specifically on electrical contractors with fewer than 25 employees.

The objectives of this study are threefold: Firstly, the study reviews the position of current SMECEs, their economic contribution to the economy, their origin and establishment, the lifespan of the business, as well as the level of education of the individuals involved in the business. Secondly, it determines the constraints and limitations that may lead to the failure of these businesses. And, thirdly, it identifies the factors that may enable SMECEs to become sustainable or successful enterprises.

A two-phased research method was used to collect information from owners of electrical contracting firms. This method involved the use of a pilot survey questionnaire and a main survey questionnaire.

The pilot and main questionnaires were used to obtain data pertaining to the electrical contracting industry and owners of such firms. More specifically, this data includes information on the background of the company and its owner, the establishment of the business and its employment structure, as well as its work history, current operations and future objectives. It also looked at the constraints and limitations faced by these SMECEs, and identified specific factors that may enhance their sustainability.

These questionnaires revealed that the constraining factors could be placed into two main categories, viz. management and labour. Management problems, for instance, included poor cash flow because of slow payment by clients, a lack of management skills on the part of business owners, and an inability to calculate project costs accurately. Labour problems, on the other hand, included an unreliable work force with no proper or effective work ethic, a lack of skilled and trained labour, and a work force that was inadequately skilled as either electricians or assistants.

Among the factors that are necessary to ensure the success and sustainability of SMECEs, were the following: Business owners need to deal personally with problems and constraints and must learn how to avoid them. They must improve their management and planning ability, and must be able to understand the market. Their business must offer good workmanship and quality of service, and they must be able to complete their projects successfully. A reliable skilled work force is imperative, as are marketing skills and the ability to ensure the controlled growth of the firm.

The following recommendations are made to owners of SMECEs: In order for their business to be successful and sustainable, they need to identify training courses that can assist their current contracted labour force. Business owners themselves also need to attend tendering and cost-control courses to improve the running and management of their business. They need to support the education and training of their work force and to employ skilled workers. Furthermore, they must ensure that the scope of the electrical contract is explained to the work force and that there is a written contract from the client, setting out the conditions of payment, in order to prevent late payment and thus cash flow problems.

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Science in Engineering in the University of Cape Town. It has not been submitted before for any degree or examination in any other university.

Each significant contribution to, and quotation in, this dissertation from the work or works of other people has been attributed, and has been cited and referenced.

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C P VISSER

CAPE TOWN

25 MARCH 2004

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CHAPTER 1: INTRODUCTION

1.1 FOCUS OF THE STUDY

This study focuses on small- to medium-scale electrical enterprises (SMECEs) in the Cape Peninsula, and more specifically, on electrical contractors with fewer than 25 employees.

1.2 RESEARCH OBJECTIVES

Broadly speaking, this study has three main research objectives: The first objective is to determine the role and contribution of electrical contractors to the South African economy. In this regard, it will also examine the origin and establishment of SMECEs, and why these firms have become necessary in the South African economic environment, as well as the level of education of the owners and employees of such businesses. Lastly, it will evaluate the lifespan of these electrical contractors and the types of contracts undertaken by them.

The second objective of this study is to determine the constraints and limitations that may lead to failures of SMECEs.

Finally, the third objective is to identify factors that may ensure the sustainability and success of SMECEs. These will be summarised in Chapter 5 of this thesis under the heading of Conclusions.

1.3 BACKGROUND OF THE RESEARCH

The electrical contracting sector forms an integral part of the South African economy and is included under the heading of the construction sector.

Since the 1990s, South Africa has gone through a phase of transformation, brought about by rapid political changes, economic restructuring and an adaptation to a new business environment. The President of the Electrical Contracting Association (ECA)

of South Africa stated that "the electrical contracting industry is emerging from one of the deepest recessions in the history of South Africa and it is being faced with demands for fundamental change in its business methods and training approaches. Strategies must be aimed at developing small and medium-sized electrical contractors." (Pieterse, 1998).

He added that the ECA has done much for the contracting sector that it can be proud of, but it has become a "closed shop" organisation, catering only for the "elite contractors". Therefore, the ECA needs to be accessible to all contractors and enterprises, regardless of their size (Pieterse, 1998).

Electrical enterprises that dominate the formal sector of the contracting environment in South Africa can be referred to as Large-scale Electrical Contracting Enterprises (LECEs). These LECEs concentrate on the larger private and governmental reticulation projects, such as township developments, housing schemes, installations of high-rise buildings and public works. LECEs are well organised and have effective managerial control structures in place (McKenzie, 1997). In addition, their ownership is also far more multi-racial, and they operate mainly on a basis of negotiation with their clients.

An argument put forward by organised labour in this sector is that Small- and Medium-scale Enterprises (SMEs) can change the impact of the small enterprises on the economy by involving workers (Electrical Workers Union Report, 1998). They further recommend that smaller enterprises should train people to do their work more effectively, and that employers need to exercise their authority over workers and take command of the day-to-day running of their business in order to be successful.

LECEs move in tandem with big construction firms from one project to another. This can be seen as working in collaboration with each other. As they thus have fewer contracts, LECEs may reduce their personnel and downsize their activities. SMECEs, on the other hand, are generally more vulnerable to fluctuations in demand. If similar action is taken by SMECEs (with their limited human, financial, physical and informational resources), their sustainability can be seriously affected.

A common factor contributing to the level of uncertainty among SMECEs are the fluctuations in tendering as a means of acquiring new work.

In order to make the tendering system more accessible to SMECEs, the Minister of Finance initiated procurement changes to the tender system, by means of a Procurement Office that is responsible for monitoring all public sector procurement (McKenzie, 1998).

Other factors that threaten the survival and growth of SMECEs are late payment and even non-payment by main contractors (who control the finances for completed work on-site). This practice has been a constant source of disputes and litigation. In general, SMECEs have been hesitant to take action against main contractors (e.g. large construction enterprises) for late payments, due to the "next job" syndrome. In other words, they are reliant on these large building contractors for future employment, explaining their reluctance to take legal action against big organisations by saying that "there is always someone else to do the work". Late payments by the builder to the electrical contractor effectively mean an unofficial, interest-free overdraft facility for his work (Pieterse, 1994).

Similarly, a review of the literature also suggests that the use of late payments as an "unofficial overdraft" at the expense of SMECEs, effectively leaves them with severe cash flow restrictions, often ultimately resulting in the collapse of smaller enterprises (McKenzie, 2000).

In response to this unacceptable situation, McKenzie identified the following factors as being important in developing a working knowledge of managing and operating a successful electrical contracting business (McKenzie, 2001).

Firstly, business owners must change their own attitudes towards money. In other words, if the main contractor is paid within 30 days, the SMECE should ask for his cheque immediately. If the main contractor refuses to pay, the small business owner must persevere, for instance, by telephoning incessantly, complaining and even crying until payment has been received, or at least until an agreement to pay by post-dated cheque has been obtained. McKenzie urges owners of SMECEs to

demand what is due to them, as their own debtors will not be that generous or accommodating.

Secondly, when SMECEs enter into a new contract, they should demand comprehensive information from the main contractor (e.g. sections, elevations, schedules, plans and the Consulting Engineer's information). SMECEs need to be able to complete the job on time and to make a profit.

Thirdly, when SMECEs prepare a quote for a main contractor, they must utilise a consistent set of rates. They should not fabricate prices in the vague hope that someone will pay in the end.

It is within such an environment that SMECEs are compelled to function productively and operate profitably. In reality, though, by virtue of their size and limited management capacity, SMECEs have not been able to implement new concepts and practices as effectively as larger companies. In order to survive and to compete in new local markets, SMECEs will not only have to adapt, but will also have to endure through times of change. Enterprises that are unable to institute renewal through change, or to display innovative and entrepreneurial skills, will increasingly find themselves economically marginalised (Visser, 2000).

According to James Baker, the Executive Director of the ECA, it is likely that the growth of SMECEs could provide employment for more South Africans. However, the SMECE sector in South Africa is facing a variety of problems, ranging from a lack of skills and financing, through poor productivity and deficient managerial skills, to a low technology base and a lack of suitable and appropriate experience (Baker, 2001).

Finally, South African electrical contractors must become used to the idea that they are, first and foremost, business owners and that the only way they can succeed is by educating themselves, by re-educating themselves and then re-educating themselves some more (Pieterse, 1998).

1.4 LIMITATIONS OF THE STUDY

This study will examine the factors that influence the sustainability of SMECEs in the Cape Peninsula. In an interview with Mr P Foot, Regional Director of the ECA (SA), it was ascertained that there are approximately 197 Electrical Contractors in the Cape Peninsula that are registered with the ECA. For the purposes of this study, I have chosen 50 of these electrical contractors at random, limiting myself specifically to those firms that currently have less than 25 employees.

1.5 DEFINITIONS OF TERMS AND FIELD OF STUDY

In terms of this study, the following definitions shall apply:

- **Small and medium-sized enterprises (SMEs):** The number of definitions on small-scale enterprises in particular and medium-sized enterprises in general virtually equates the number of authors and researchers on the subject (The State of Small Business in South Africa, 1997).

- **Small-scale enterprise:** This category includes businesses with up to a maximum of 50 employees. The enterprises in this category are in general more established than very small enterprises and their business practices are more complex. Usually, a small-scale enterprise has outgrown direct supervision by the entrepreneur him/herself and has developed a secondary co-ordinating mechanism, which distinguishes it from the very small enterprise. Growth into a medium-scale enterprise, however, would require an accumulation of resources as well as the appropriate incentives for expansion (The State of Small Business in South Africa, 1997).

- **Medium-scale enterprise:** The maximum number of employees of such enterprises is 100, except in the mining, electricity, manufacturing and construction sectors, where it is 200 employees. Although these enterprises are still controlled by the owner/manager, the ownership and management structure is more complex. Often, the decentralization of power to an

additional management layer and a greater division of labour are the main differences between small- and medium-sized enterprises. As a next step, the separation of ownership and management distinguishes medium- and large-scale enterprises from each other (The State of Small Business in South Africa, 1997).

- **Small and Medium-Scale Electrical Contracting Enterprises (SMECEs):** In this study, SMECEs comprise enterprises employing fewer than 25 employees. (The majority (60 – 70%) of registered SMECEs with the ECA and Industrial Council have less than 25 employees).

1.6 RESEARCH DESIGN AND METHODOLOGY

In this section, the research design and methodology of this thesis and the structure of the approach followed from the Pilot Study to the Main Questionnaire are explained.

Research design refers to the design of the process used to acquire data. **Research methodology**, in contrast, refers to the operational framework within which the data is to be placed and interpreted.

Research methodology, in general, is divided into four major groupings, viz. the *historical method,* the *descriptive method*, the *analytical method* and the *experimental method*, each with its unique approach to particular problems (Leedy, 2000). This study utilises the *descriptive survey method* as the method of research.

The **descriptive survey** utilises observation as the principal means of collecting data, and is also referred to as the normative survey method. It is the primary method of research utilised in this study. The secondary method of research utilised herein reviews and extracts critical data from all available literature from textbooks, academic journals and trade journals. This is a historical method of extracting literature and critical data.

The **normative survey method** will be used to acquire data through interviews and questionnaires by means of an initial pilot study, which is followed by the main study. This is deemed the most appropriate instrument to guide the research inquiry into SMECEs and to present the findings and current perspectives and practices in the industry.

This research design and methodology framework is used to investigate, measure, determine and comprehend the SMECE sector and to determine the factors that encourage and limit their success. The procedure will be a two-phase process, outlined as follows:

Phase One comprises the compilation of a pilot questionnaire that will be used to extract data pertaining to the electrical contracting industry. More specifically, information will be collected on the background of SMECEs, their work history, business objectives, management deficiencies, financially related problems, employment content, constraints and limitations, as well as proposed solutions to these problems. This pilot study will be applied to 5 electrical contractors by means of in-depth face-to-face interviews based on open and close-ended questions to guide the inquiry. These questions are formulated in response to the issues that have been extracted from the secondary research, namely the literature review.

Phase Two consists of the application of the main questionnaire, revised and modified in response to the pilot study's findings, to gain a better understanding of SMECEs. The main questionnaire will then be administered personally, by means of face-to-face interviews with the owners of 50 randomly selected SMECEs throughout the Cape Peninsula, in order to acquire the necessary information for analysis. It was decided to use this approach to ensure a 100% response rate, rather than relying on owners to complete and return the questionnaires at their leisure.

This two-phase research approach is shown in Figure 1.1 below:

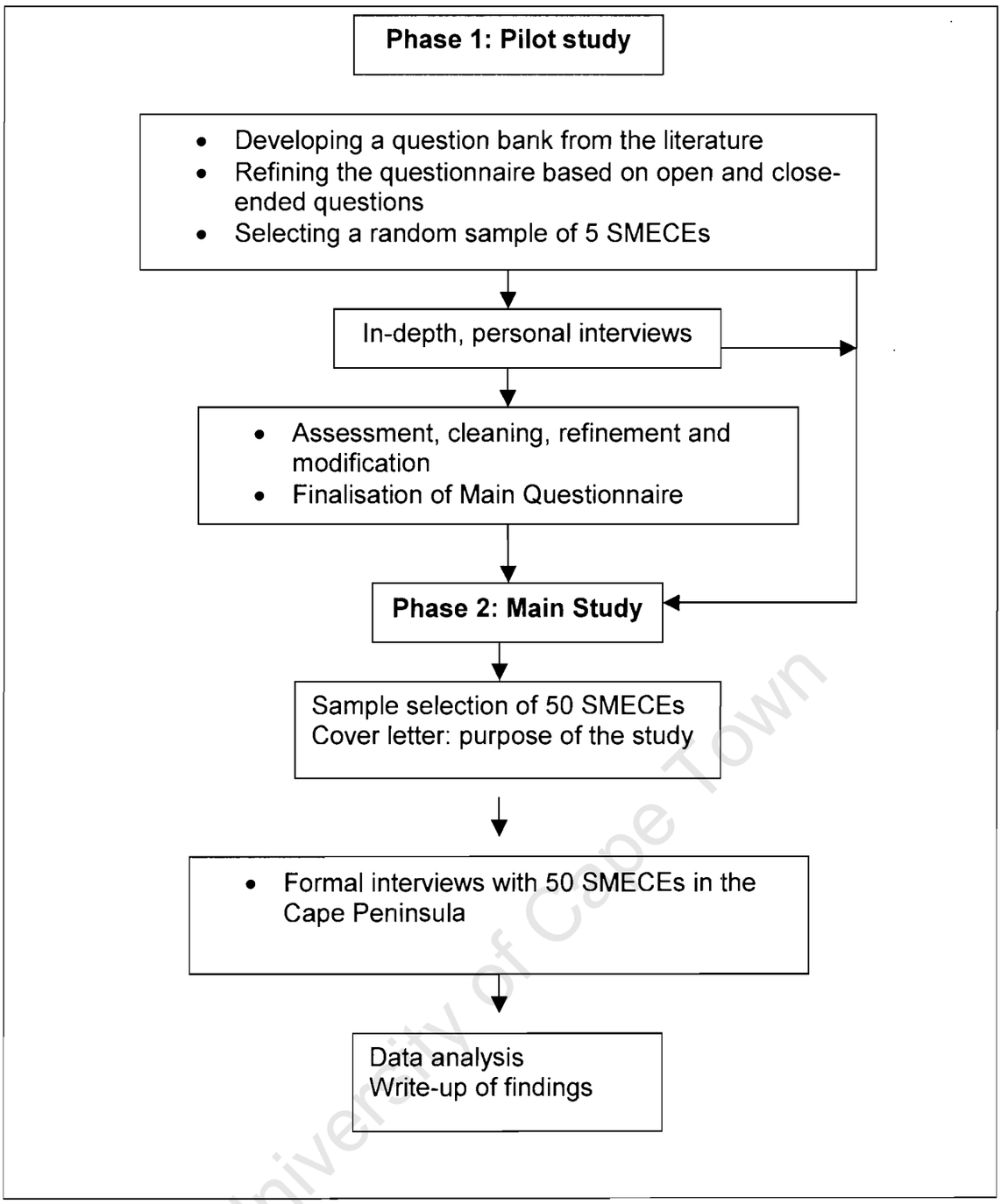


Figure 1.1: Two-phased research approach into SMECEs in the Cape Peninsula

1.7 STRUCTURE OF THE THESIS

This thesis consists of the following chapters:

Chapter 1 introduces the focus of the study and its research objectives, the background to the research and the limitations of the study, as well as defining the terms and field of study, setting out the research methodology and explaining the structure of the thesis.

Chapter 2 reviews the literature on the electrical contracting industry, the contribution of this industry to the economy, its origin and establishment, the level of education of workers and business owners, the lifespan of such businesses and the types of contracts undertaken by SMECEs. It also identifies the constraints and limitations faced by SMECEs, and considers factors that may contribute to their success.

Chapter 3 introduces the pilot survey questionnaire, the pilot survey group, the amendments to the pilot study and the main survey questionnaire.

Chapter 4 analyses the main questionnaire survey data obtained from 50 SMECEs in the Cape Peninsula.

Chapter 5 presents the findings and conclusions gained from the surveyed data in terms of the research objectives of this study.

Lastly, **Chapter 6** puts forward certain recommendations regarding the support and promotion of SMECEs in the Cape Peninsula in order to ensure that these businesses are sustainable and successful in the future.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to review the literature on the electrical contracting industry specifically for the following purposes:

- To determine and review the contribution of the electrical contracting industry to the South African economy

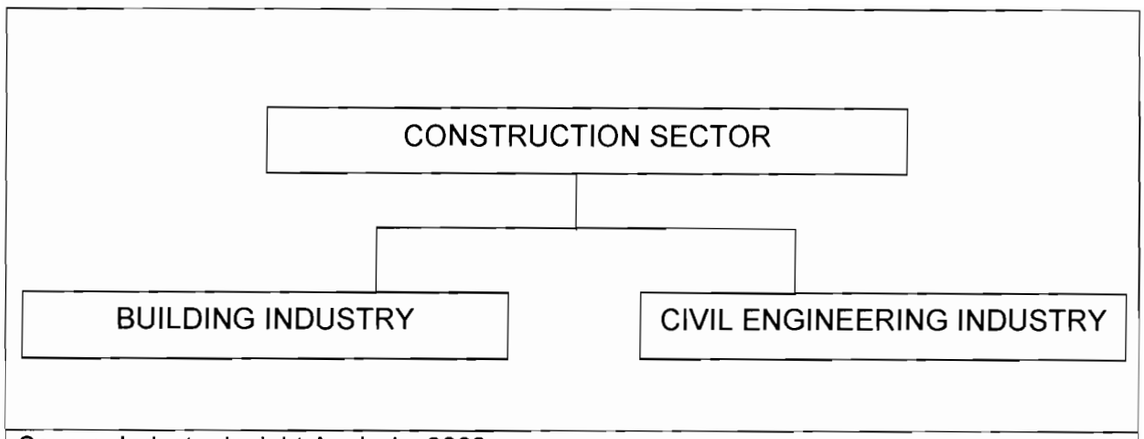
- To determine and review the origin and establishment of SMECEs, the level of education of workers and business owners, the lifespan of these businesses and the types of contracts undertaken by them;

- To determine and review the constraining factors and limitations that may lead to the failure of SMECEs;

- To identify and review the factors that may facilitate the survival, sustainability and success of these SMECEs.

2.2. THE CONSTRUCTION SECTOR OF SOUTH AFRICA

The construction sector of the South African economy is subdivided into the following elements, as per Figure 2.1 below. The electrical contracting sector forms part of the building industry.



Source: Industry Insight Analysis, 2002.

Figure 2.1: Elements of the South African Construction Sector

2.3 THE ELECTRICAL CONTRACTING INDUSTRY OF SOUTH AFRICA

Electrical contractors in the Cape Peninsula continue to battle with severe economic factors challenging the industry. Although certain major projects are underway, small- and medium-sized contractors have been hit particularly hard. Retrenchments in the industry have been ongoing during 2002 (Thys, 2002).

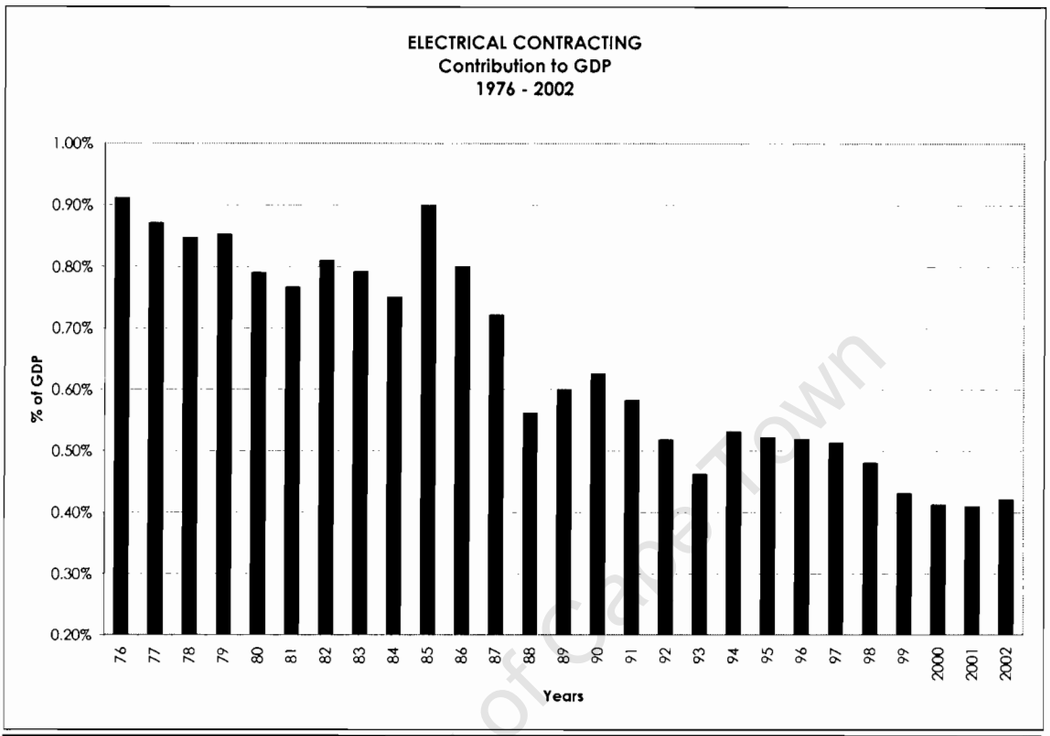
Although the ECA (SA) has seen the closure of several of its member electrical contractors in the region during 2002, thanks to the recruitment of new members, the organization has in fact maintained a steady membership figure of 197 electrical contractors in the Cape Peninsula (Foot, 2002).

2.3.1 Definition of an electrical contractor

The South African Bureau of Standards defines an "electrical contractor" as a person who is currently registered with the Electrical Contracting Board of South Africa as an electrical contractor and who undertakes to perform electrical installation work and/or the verification and certification of the construction, the testing and the inspection of electrical installations on behalf of any other person, but excluding an employee of such first-mentioned person (SABS 0142-1, 2001)

2.3.2 Contribution of electrical contracting industry to GDP

The electrical contracting industry currently contributes approximately 0.5% to the Gross Domestic Product (GDP); its contribution had declined sharply from the highs of the 1970's and 1980's. The contribution of the electrical contracting industry to the GDP is summarised in Figure 2.2 below.

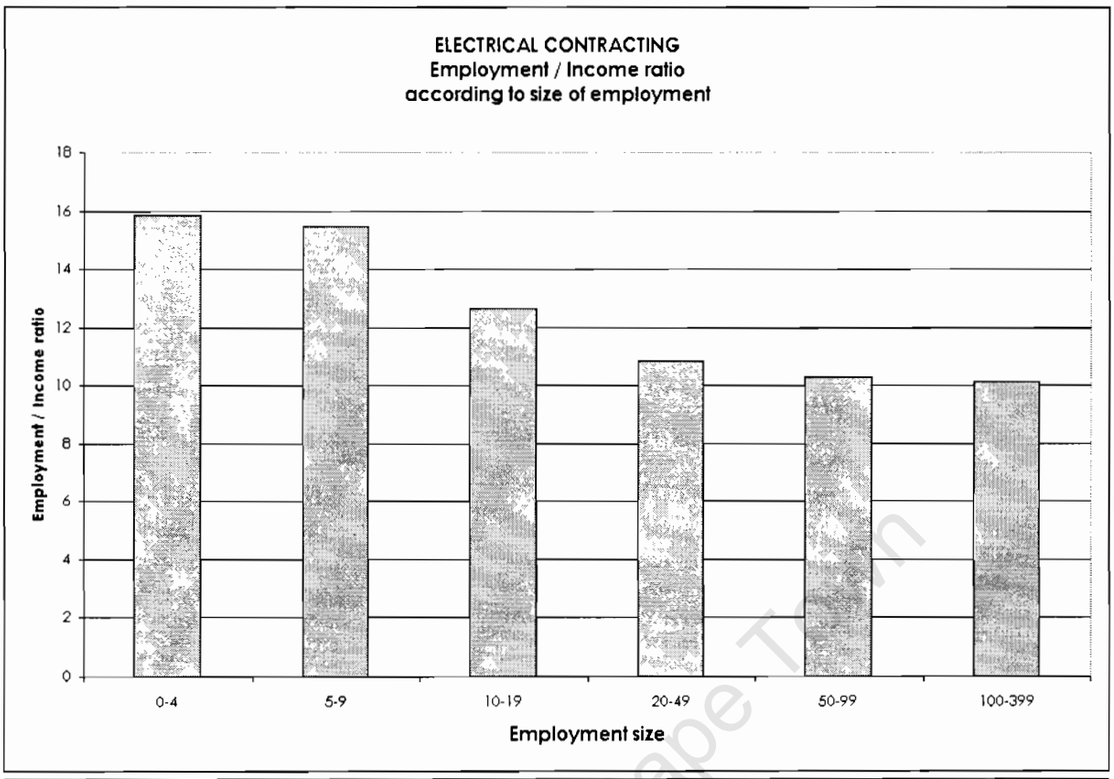


Source: Industry Insight Analysis, 2002.

Figure 2.2: Electrical Contracting Contribution to GDP, 1976 – 2002

2.3.3 Electrical contracting employment/income ratio

Figure 2.3 below compares the employment/income ratio with the size of the establishment according to the number of people employed.



Source: Industry Insight Analysis 2002

Figure 2.3: Employment / Income Ratio according to Size of Employment

Figure 2.3 above indicates that smaller establishments (employing fewer than 20 people) have a higher employment/income ratio than do larger establishments. Because of the higher income per employee ratio for smaller enterprises, their profitability and sustainability is extremely vulnerable to labour related issues, skills shortages, absenteeism of workers and wage and salary negotiations. This is because often no replacements are available to complete projects and because work will be delayed if some employees are on leave or are absent at the same time (Snyman, 2002).

2.3.4 Profit margins of sub-sectors

Table 2.1 indicates the profit margins of certain sub-sectors in the construction industry. The average profit margin after tax of 4% for the electrical sub-sector has been highlighted in bold. Compared to profit margins generated in the retail and services industry, the figures in Table 2.1 for the construction industry sub-sectors are low (Snyman, 2002).

Group	Gross output	Profit / Loss	Profit margin after tax
Total construction	**19800001**	**499819**	**2.52%**
Site preparation	717565	42744	5.96%
Building	5935905	138887	2.34%
Civil	8320204	201792	2.43%
Plumbing	541550	18470	3.41%
Electrical	**1516322**	**61993**	**4.09%**
Shop fitting	332092	9556	2.88%
Painting	403402	15795	3.92%
Other completions	515610	13693	2.66%
Renting of equipment	297520	26532	8.92%

Source: Industry Insight Analysis 2002

Table 2.1: Profit Margins by Sub-Sector (Census 1994)

2.4 ATTRIBUTES OF SMALL- AND MEDIUM-SCALE ELECTRICAL CONTRACTING ENTERPRISES (SMECEs)

The purpose of this section is to determine and review why SMECEs need special attention. It also looks at how to categorize and profile these firms, as well as at their origin and establishment, the levels of education of workers and business owners, their lifespan and the types of contracts undertaken by them.

2.4.1 Why SMECEs need special attention

In the electrical construction sector of South Africa one typically finds a small number of medium- to high-value projects and a high number of small (low-value) projects. The small, low-value projects tend to be spread over a relatively wide geographical area (Carttell, 1994) and thus are normally well suited to the capabilities of SMECEs. The role of SMECEs in smaller building projects is vital and forms part of the total construction sector output (Snyman, 2002).

It is likely that the growth of SMECEs could potentially contribute to a decrease in unemployment. However, SMECEs in South Africa are facing various problems, such as a lack of skills, inadequate financing, poor productivity, lack of managerial skills, a low technology base and a lack of appropriate experience (Baker, 2001)

In the South African context, SMECEs may also have a special role to play in providing electrical installations for the low-income housing market. Many Large-Scale Electrical Contracting Enterprises (LSECs) tend to withdraw from these projects due to factors such as high levels of violence in the area, for instance, which make construction and installation difficult.

Many SMECEs operate by providing both skilled and unskilled labour to LSECs. In many instances LSECs negotiate or tender for the work directly to the developer or the client. Depending on the scope of the project, LSECs may negotiate with SMECEs to complete a portion of the project under their supervision and management as sub-contractors.

2.4.2 Categorizing SMECEs

The process of categorizing SMECEs should be considered against the following background. With the exception of the LSECs in the construction industry, there are frequent changes in the numbers and mix of entrepreneurs in the SMECEs, which is related to their failure rates. Many of these contractors enter and leave the construction sector as economic conditions and demand fluctuate (Snyman, 2002).

Specialised tradesmen, such as plumbers and electricians, generally tend to establish enterprises on an *ad hoc* basis in order to undertake sufficiently large and attractive sub-contracts. Nevertheless, there are also entrepreneurs who operate as full-time, *bona fide* small- and medium-sized electrical contractors, and who can then be categorized as SMECEs. These enterprises may however cut personnel and equipment during difficult times in an attempt to remain in the electrical contracting business as SMECEs (Baker, 2000).

2.4.3 Profiling SMECEs

As in any other industry, SMECE entrepreneurs are attracted by the potential of making a profit. Furthermore, the construction market does not actually require SMECEs to make long-term commitments. If their contracting enterprises fail, they have the option of withdrawing from the sector until such time that the risks are lower. Consequently, SMECEs seldom go bankrupt as a result of poor performance in the construction industry.

The cost of compliance in starting an SMECE is low in comparison to the manufacturing and retail industries. Excluding the required technical qualification, little else in terms of capital equipment, premises and inventory is required. With such low entry barriers, start-up is relatively easy and uncomplicated, which makes the industry easy to enter (Snyman, 2002).

Entrepreneurs with backgrounds in construction, who have already worked in that environment, who enjoy the security of having been exposed to the industry's requirements before, and who have access to work through previous contractors, clearly have an advantage over other entrepreneurs who originate from outside the construction industry. The former are consequently more likely to remain in the electrical contracting industry (Pieterse, 1997).

Another characteristic profile of electrical contracting entrepreneurs is that they usually maintain reasonably tight control over their businesses and are reluctant to delegate control of the contracting operations to their employees.

2.4.4 Origin of SMECEs

Entry into the electrical contracting field requires a technical qualification coupled with some trade-related experience. Generally, municipalities, private developers and government institutions require all electrical work to be inspected, tested, approved and signed off by an accredited person. The latter must be a qualified electrician who is in possession of a wireman's license (SABS 0142, 1997). This wireman's license is a separate qualification that can only be obtained by a qualified electrician. Many entrepreneurs who establish an electrical contracting enterprise do not have the above qualifications but employ technical labour to carry out the physical work under supervision.

These entrepreneurs can come from sources such as municipalities, government institutions, private enterprises, the construction industry or industrial enterprises, where they may have been responsible for electrical maintenance and electricity related projects (Thys, 2002).

Most SMECEs, on the other hand, originate from within the construction industry. In fact, the evidence shows that entrepreneurs establish electrical contracting companies via two routes, namely trade and management (Thys, 2002), each of which will be discussed below.

Entrepreneurs entering into the SMECE sector via the trade route usually work their way up through the ranks, e.g. a labourer qualifies as an artisan, then becomes a supervisor or a foreman and finally leaves his employer to open his/her own SMECE. These entrepreneurs typically have a sound understanding of the practical aspects of electrical installation and are able to manage on-site activities with a relatively acceptable level of competence.

However, according to Terry MacKenzie-Hoy, the Executive Director of the ECA, these enterprises tend to lack the financial and administrative skills (e.g. costing, planning, scheduling, tendering, marketing and control) that are crucial for operating a successful small enterprise (MacKenzie-Hoy, 2002).

A review of the literature indicates that the most consistently occurring, and indeed the most serious, weaknesses displayed by electrical contractors are their inability to estimate and manage costs. Many apply unreliable techniques, such as the application of square metre estimates or the per electrical point system, which is unscientifically compiled and often inaccurate (MacKenzie-Hoy, 2002).

Another group of SMECEs is created via the management route. These entrepreneurs typically come from backgrounds in management, where they have previously functioned as technical supervisor-managers and engineers. These entrepreneurs are normally technicians or university-qualified electrical engineers and tend to be more successful, because they have been exposed to both practical site work as well as office managerial duties (Thys, 2002).

Enterprises entering the electrical contracting industry via the trade or management route must both ensure that their businesses grow, because a lack of growth can negatively affect the sustainability of an enterprise (Snyman, 2002).

2.4.5 Establishment of SMECEs

Common reasons for establishing an electrical contracting business include ambition, a desire for independence and discontentment with employee status. It is thus often individuals who have previously been employees of LSECs, construction industry enterprises and municipalities, who establish the majority of small firms. Once an individual has acquired sufficient qualifications and practical skills to have the necessary confidence and sense of responsibility to obtain and complete his own contracts, he will tend to start his own electrical contracting enterprise (Snyman, 2002).

Furthermore, it is likely that the majority of these firms were initially founded with little capital and few contracts lined up. The general pattern seems to be that the owner possessed the necessary skills and thus employed a couple of assistants, and thereafter took on whatever work was available through previous contacts (Thys, 2002).

2.4.6 Education and training

It appears that the majority of business owners have the minimum qualifications that are necessary for an electrician, namely N2 (equivalent to Grade 11 with technical subjects), which is also referred to as NTC2 in the technical trade (Thys, 2002).

A number of owners started their careers by studying electrical technology at Technical Colleges. In order to become a qualified electrician, one has to obtain a minimum qualification of NTC2 with two years' practical experience (apprenticeship), as well as undertaking the normal trade test, which involves various practical problems of electrical installation.

After receiving their technical academic training and trade test qualification as an electrician, many business owners seek employment in the construction industry to gain experience. At a later stage during such employment, they would then qualify for their "wireman's license" by attending night classes at specific Technical Colleges.

Effectively, any person with a NTC2 qualification, a wireman's license and some entrepreneurial drive to work for himself, may establish his own firm based on the requirements of the electrical contractors definition as summarized in paragraph 2.3.1 above (SABS 0142, 1997).

2.4.7 Lifespan of SMECEs

Most SMECEs earned their first income through sub-contracting to LSECs or through work from individual clients that had been obtained personally. It is uncommon for a company to obtain its first contract through an institution or from tendering and thus competing against other companies (Pieterse, 1996).

SMECEs and independent electrical contractors do tend to continue sub-contracting over the lifetime of the firm, but usually progress from doing smaller electrical installations to tackling bigger building and reticulation projects (Thys, 2002).

The Electrical Contracting Association of South Africa has confirmed during interviews that many of the electrical contracting firms affiliated to them have in fact been in existence for up to 45 years (Foot, 2002).

2.4.8 Electrical sub-contracting and types of contractors

In terms of paragraph 2.4.5 above (re: the establishment of firms), owners of SMECEs have many reasons as to why they established their own firms in the first place. This section identifies the different types of contracts entered into by SMECEs. The relevant data was obtained from the electrical contractors and from law publications (Tiefenthaler, 1998).

Broadly speaking, there are three types of contractors in the electrical industry. These can be defined as follows:

- **General Contractors:** General electrical contractors (SMECEs) usually contract directly with a client (developer), a main contractor (builder) or an LSEC, and assume full responsibility for the completion of an entire job for their client or employer (LSEC).

- **Main Contractors:** In cases where general contractors are employed to do the work, the general contractor will refer to the client/employer/builder/LSEC as his "main contractor" or principal contractor.

- **Sub-contractors:** Sub-contractors are employed by either the client or the main contractor (principal contractor) or LSEC. The basis of a sub-contracting relationship is negotiated and takes on five main forms, namely: a labour and material sub-contract, a

labour-only sub-contract, a bill of quantities contract, and a lump-sum contract.

A **labour and material sub-contractor**, also referred to in the trade as a time and material sub-contractor, is usually employed to perform an entire electrical installation of a building. Some other examples are plumbers, painters and plasterers. The electrical sub-contracting firm (the SMECE) supplies their own skilled artisans, labour and materials. A typical type of labour and material sub-contract is where the developer/client employs an electrical contractor (SMECE) to complete the electrical installation in a building complex or housing project.

Labour-only sub-contractors are usually skilled artisans, and are often former employees of SMECEs or LSECs, but they do not have the financial capability to carry out an entire labour and material contract. A typical type of labour-only sub-contract is where a LSEC obtains work outside his geographical area of operation. The LSEC will then employ a local electrical contractor (SMECE) to perform a labour-only sub-contract, where the LSEC will supply all the material and the local electrical sub-contractor will supply the skilled labour.

A **bill of quantities contract** is usually issued to a general contractor to price his services accordingly. Such a bill of quantities is usually a detailed specification with related drawings prepared by a professional electrical engineer. Drafting such a document requires tendering skills, and a specialist to ensure that the tendering is done properly and that all materials and labour are incorporated into the contract. A bill of quantities contract is usually carried out on a very formal basis between an electrical contractor and a consulting engineer, utilizing the specifications and bills as a reference to the project.

A **lump-sum contract** is similar to the one outlined above, with the only difference being that no bill of quantities is issued with the drawings and specification to a general electrical contractor. It is the responsibility of the electrical contractor to allow for all material and labour in a lump-sum contract. Any additions to the contract due to mistakes during tendering must be paid for by the electrical contractor himself (Tiefenthaler, 1998).

2.5 CONSTRAINING FACTORS AND LIMITATIONS OF SMECEs

The purpose of this section is to determine and review the constraining factors, inadequacies and limitations that may lead to the failure of SMECEs.

2.5.1 Reputation of electrical contractors

Electrical contractors are frequently criticised for their failure to meet completion deadlines as well as their levels of performance. In their defence, however, it must be explained that electrical installation is also dependent on other sub-contractors (e.g. plumbers, painters, bricklayers and plasterers), and that certain work must have been carried out before the electrical contractor can perform his work. As a result, electrical contractors do sometimes leave a project to return at a later stage when the other prerequisite work has been done. This often forms part of the critical path, which leads to criticism of electrical contractors. Nevertheless, the ECA (SA) notes that it is often difficult to identify incompetent and unscrupulous contractors prior to engaging them. The appointment of an incompetent electrical contractor can, effectively, harm the reputation of the electrical contracting industry as a whole (Foot, 2002).

2.5.2 Government legislation

Many SMECEs are registered with the ECA (SA), which allows them to operate as electrical contractors, but do not always register with the Industrial Council. Owners are, however, compelled to register their staff with the Industrial Council for pension, sick pay and medical fund benefits. Despite this, firms continue to operate and try to elude detection of the Industrial Council inspectors. Compliance with the Industrial Council presents a significant recognition of SMECEs at a formal level (Thys, 2002).

2.5.3 Limitations and inadequacies of SMECEs

The following have been identified as the main limitations and inadequacies of SMECEs in terms of the literature review.

2.5.3.1 Understanding drawings and specifications

The level of understanding of technical drawings and specifications often presents serious problems. In many cases, the owner himself is able to perform these duties, but he does not always train his employees accordingly. The majority of employees thus lack the ability and experience to read and comprehend technical drawings and specifications, which limits their employment possibilities to that of labourers. This places even more pressure on management to perform the more complex tasks (Pieterse, 1997).

2.5.3.2 Estimating costs and compiling tenders

The inability to estimate costs and compile accurate tenders appears to be a common problem for SMECEs. Frequently, the owner or management are indeed competent, although not necessarily experts, in estimating costs and preparing tenders, and therefore none of the employees are adequately trained. In the absence of this expertise, business owners tend to work on intuition, based on previous experience. This leads to miscalculations of labour productivity, of increases in the cost of materials, of transport costs and company overheads, all of which varies from one contract to another (Pieterse, 2001).

The inability to compute and manage costs is the single most critical problem that seriously affects the sustainability and success of an electrical contracting firm. The lack of costing skills leads to under-pricing of contracts and misinterpretation of the terms of the contract. This in turn results in heavy financial losses at the end of a project by virtue of the fact that management has failed to incorporate the costs associated with overheads or contingencies in the compilation and pricing of tenders (Baker, 1992).

Many electrical contractors are very confident in using a standard rate such as Rand per electrical point or Rand per m² as a means of estimating and quoting, and therefore apply this method. There is also a tendency by competitors to simply undercut any contractor who tries to increase his price to a realistic level (MacKenzie-Hoy, 2001).

This method of pricing e.g. Rand per electrical point causes most electrical contractors to under-price themselves, as they tend to use the same rate in all projects and they don't provide for additional transport, marginal price increases, inflation and the degree of difficulty of the project. Many firms moreover lack a basic understanding of inflation and price escalations (MacKenzie-Hoy, 2001).

2.5.3.3 Understanding legal aspects of contract work

SMECEs lack the (corporate) sophistication of LSECs. This is particularly evident in their inability to utilise the conditions of a contract to their own advantage. Clients, principal contractors and developers almost invariably alter the basis of original contracts by issuing variation orders and requiring additional work. A thorough knowledge and understanding of original contracts is vital to the successful negotiation of rates for these variations, especially where considerable financial gains (or losses) stand to be made. It is frequently the case that SMECEs lose money due to poor preparation and poor negotiation of claims against contract variations (Tiefenthaler, 1998).

2.5.3.4 Implementing project planning and control

Deficiencies in managerial skills and poor planning probably represent the two greatest obstacles amongst the SMECE fraternity. Common examples of such deficiencies are the inability to compile materials procurement schedules, to check productivity during contracts, to anticipate possible delays, to prevent labour shortages and to plan transport requirements properly (Pieterse, 1997).

2.6 BUSINESS AND MARKET-RELATED PROBLEMS OF SMECEs

The purpose of this section is to determine and review business and market-related problems that may lead to the failure of SMECEs.

2.6.1 Irregular and fluctuating supply of work

SMECEs tend to have difficulties in finding work on a regular basis. Fluctuations in the construction industry have an impact on the levels of competition, thus making it difficult to gain ready access to a steady supply of work, especially in times of recession. Public contracts are usually issued on a pre-qualification system, which categorises and restricts electrical contractors to maximum contract values on contracts, which they are permitted to undertake. Many electrical contractors also have a tendency to undercut other contractors by simply reducing their prices and rates to an unrealistic level, although these are not scientifically calculated or based on actual overhead, labour and related operations costs (MacKenzie-Hoy, 2001).

2.6.2 Lack of access to finance and credit

Access to finance and credit is a related problem due to the inability of SMECEs to meet collateral requirements, the absence of good records of accomplishment and a lack of proper financial records. Financial institutions are loath to accept challenges or risks, which they are unable to assess accurately. Financial institutions categorise contractors as a high-risk group. The poor performance of the contracting industry in general often results in specific firms being unfairly penalised in the consideration of financial support (Snyman, 2002).

2.6.3 Shortage of skilled labour

The shortage of skilled labour in the construction industry is another problem facing SMECEs. The input of skilled workers and foremen plays an important role in determining whether or not SMECEs produce quality work, and whether or not they are operating profitably. The apparent shortage of skilled workers in SMECEs may,

however, also be the result of the fact that such firms cannot guarantee secure employment and thus do not attract highly skilled labour.

The shortage of skilled workers is indeed an important factor that affects performance in the electrical contracting industry. According to Mr C Thys, semi-skilled labour is often used to perform work that should in fact be done by skilled labour only. Moreover, semi-skilled workers tend to regard such on-the-job training as giving them background experience. Therefore, work that should only be done by qualified artisans, is frequently completed by unskilled or semi-skilled workers (Thys, 2002).

2.6.4 Material supply problems

SMECEs are compelled to rely on credit to acquire material for specific projects. Purchasing material directly is difficult (because they have little available capital) and the non-attainment of credit is a critical problem facing many SMECEs.

Further expenses are incurred when the supply of material to a site is unreliable because of poor planning and insufficient credit (Snyman, 2002).

2.6.5 Lack of training

Many employees in the electrical contracting industry who work for SMECEs, are in fact not registered with the Industrial Council or the ECA (SA) and, therefore, do not have ready access to formal training facilities. Most training, therefore, occurs on the job. The owner is only concerned with the job being done, regardless of whether or not his work force has received or is receiving proper training.

Furthermore, because of heavy competition in the industry, electrical contractors operate on low profit margins and generally cannot afford to allocate large training budgets for their staff (Snyman, 2002).

2.6.6 Problems originating from the clientele

Unclear drawings and specifications can cause serious problems. Clients, developers and consulting engineers tend to assume that contractors know what to do and how to prepare or interpret drawings and specifications. This often results in important information being omitted therein. This clearly frustrates the electrical contractor's efforts in both the costing and the execution of the work.

Delayed payments also cause difficulties for SMECEs. Fairly lengthy delays between the time of certification and the receipt of the payment are common. Most problems regarding payments derive from the main contractor (builder)/client relationship. Examples of such problems are undue delays in payment, retention moneys not being refunded, rates for jobs being reduced without negotiating with the contractor, and excessive penalties being applied for the late completion of the project (Snyman, 2002).

2.7 FACTORS THAT WILL IMPROVE THE SUSTAINABILITY OF SMECEs

The purpose of this section is to determine and review factors that may facilitate / encourage the sustainability and success of SMECEs.

2.7.1 Promotion of electrical contracting

Electrical contracting has become an established part of the South African Construction Industry. According to Mrs Elsie Snyman, Construction Analyst of S.A. Construction Statistics, the gross output in real terms (i.e. after the effects of inflation have been deducted) of the electrical contracting industry has increased by R2,800 million to R3,500 million from 1993 to the present (Snyman, 2002). Both the ECA (SA) and the Industrial Council acknowledge that electrical contracting is a major participant in producing work in the construction industry (Thys, 2002).

According to Pieterse, President of the ECA (SA), the biggest achievement of the ECA (SA) was to remove the "subbie" stigma from the electrical contractor and to promote him as a responsible and important part of the construction industry (Pieterse, 1996).

Similarly, according to Baker, the promotion of electrical contracting results in a greater number of SMECEs obtaining work (Baker, 2001).

2.7.2 Growth opportunities

Growth opportunities, such as new projects, access to new tenders and a revised client basis, can assist in ensuring the sustainability of SMECEs (Snyman, 2002). It is evident, however, that the achievement of growth by either *lateral expansion* or *upward movement* presents a practical challenge to the management of SMECEs when new opportunities arise.

(a) SMECEs can do projects simultaneously by increasing the number of jobs undertaken concurrently. This is a process of *lateral expansion*.

(b) SMECEs can also seek and undertake more complex and higher value contracts. This is a process of *upward movement*.

A factor of success is the ability to control the pace of growth of a firm by identifying its market and utilising opportunities when these present themselves.

2.7.3 Management and personal ability

Management and owners of businesses must be able to identify problems and suggest possible solutions and how to avoid such problems in future. Strong planning and financial management are important to enhancing the success of a business (Thys, 2002).

2.7.4 Access to capital, finance and credit

Secured overdraft facilities from banks and extended credit facilities from suppliers will ensure that a business has a steady flow of the materials and funding which it needs in order to operate effectively. Capable planning and management are crucial aspects of this (Snyman, 2002).

2.7.5 Reliable skilled labour

A labour force that is reliable, properly trained and regularly re-trained is an important factor in facilitating the success of a business, the achievement of quality workmanship and the timely completion of contracts (Thys, 2002).

2.7.6 Payment terms

Favourable payment terms from clients are crucial to ensuring good cash flow in the business, and payment terms must thus be qualified and strictly enforced by management to ensure the ultimate sustainability of a business (Pieterse, 1998). Late or even non-payment by clients cannot be tolerated.

In conclusion, then, the above literature review has allowed us to identify numerous important issues with regard to the electrical contracting industry of South Africa and the attributes and characteristics of small- to medium-scale electrical contractors. It has also raised some of the limitations and problems faced by SMECEs, specifically with regard to their day-to-day operations, and suggested various ways of overcoming these. All of these issues were explored during the initial pilot study, and thereafter during the in-depth one-on-one interviews with the owners of the various SMECEs who had agreed to participate in the main survey (contained in Appendix B). The next chapter will look briefly at the pilot study.

CHAPTER 3: THE PILOT SURVEY QUESTIONNAIRE

This chapter presents a summary of the Pilot Survey Questionnaire. During this initial stage, five SMECEs were interviewed for approximately one-and-a-half hours per interview, after which suggestions were requested on modifying the Pilot Questionnaire. At the end of each interview, the interviewee was also requested to sign the Pilot Survey Questionnaire to make it official.

3.1 PILOT SURVEY GROUP

All the firms interviewed employ less than 25 employees, which is in accordance with the definition of Small- to Medium-Size Electrical Contracting Enterprises, as specified in Chapter One of this study.

The interviewees were general sub-contractors, specialist sub-contractors and labour and material sub-contractors The reason for choosing contractors from these three categories was to ensure that the study would represent all the types of contractors listed in the Pilot Questionnaire.

General Sub-Contractors are those SMECEs who take on the entire contract and who will be held responsible by the employer for the entire electrical end product, including supply, installation and commissioning.

Specialist Sub-Contractors are SMECEs who only accept responsibility for supplying labour and material for the electrical installation and who will thus be appointed by the main contractor (builder) as a specialist sub-contractor.

Labour-only Sub-Contractors are SMECEs who are supplied with the necessary material and who need only provide the requisite labour.

3.2 AMENDMENTS TO PILOT STUDY

Based on the five SMECEs that were interviewed, the basic pilot survey questions remained the same and were thus carried over into the Main Survey Questionnaire, albeit with the following amendments and additions being made.

3.2.1 Section J (Labour) of the Pilot Survey Questionnaire

The following were added to this section:

(a) Do you use casual labour?

(b) Do you subcontract work out to smaller firms of electricians?

(c) If you have used sub-contractors in the past, will you use them again?

(d) Is your firm registered with the Industrial Council?

3.2.2 Section K (Problems / Constraints) of the Pilot Survey Questionnaire

The following was added to this section:

(a) The problems and constraints were grouped under labour, finance, management, legislation and markets.

3.2.3 Section L (Sustainability) of the Pilot Survey Questionnaire

The following was added to this section:

(a) Explain which factor(s) to your knowledge may influence the sustainability of SMECEs.

3.3 MAIN SURVEY QUESTIONNAIRE

The Main Survey Questionnaire as per Appendix B was used to interview 50 SMECEs and the data obtained during this survey is analysed extensively in Chapter 4 below.

CHAPTER 4: ANALYSIS OF MAIN QUESTIONARE SURVEY DATA

This chapter contains the analysis of the main questionnaire survey data, and is sub-divided into sections, which correspond to the sections of the main survey questionnaire. Briefly, these consist of the following: the general attributes of the business; the personal background and training of the owner; his entry into the electrical contracting industry; the recent and current activities of the enterprise in question and its future objectives; and the problems and constraints it experiences with regard to its future sustainability and success. Incidentally, none of the SMECEs interviewed for the purposes of this study were owned by women.

In the research findings, presented below, the interviewees' responses are summarized in either table format or in description format by first giving the number of respective responses out of a total number 50, and then the percentage. All the tables in this chapter were compiled based on the data obtained from the survey.

4.1 SURVEY METHODOLOGY

The questionnaire was distributed to 50 SMECEs, chosen at random. My intention was to focus exclusively on SMECEs with less than 25 employees in order to adhere to the definition of small- to medium-sized enterprises. Some enterprises I had originally identified had more than 25 employees and were therefore not applicable to the survey.

Table 4.1 below summarises how many of the 50 SMECEs belong to each of the three categories defined under item 3.2 of the Pilot Survey Questionnaire (discussed in Chapter 3 above).

Types of SMECEs	Number of responses	Percentage of total
General Contractors		
- mainly new work	32	64%
- mainly alterations and additions	6	12%
Specialist sub-contractor		
- mainly labour and material	8	16%
Labour only sub-contractor		
- bill of quantities	2	4%
- lump sum control	2	4%
Total	50	100%

Table 4.1 Types of SMECEs

The 50 SMECEs that were interviewed came from the following geographical areas:

Location of SMECEs	Number of responses	Percentage of total
1. Cape Town	4	8%
2. Bellville	10	20%
3. Brackenfell	7	14%
4. Lansdowne	4	8%
5. Kuils River	2	4%
6. Durbanville	4	8%
7. Paarden Island	4	8%
8. Parow	4	8%
9. Somerset West	1	2%
10. Kraafontein	3	6%
11. Ottery	3	6%
12. Grassy Park	4	8%
Total	50	100%

Table 4.2 Geographical location of SMECEs

The SMECEs interviewed for this study are all electrical contractors who are directly involved in the building and construction industry.

4.2 GENERAL ATTRIBUTES

This section summarizes the general attributes of the interviewed SMECEs. These include the starting date of the firm, the associations to which it belongs, whether or not the owner had previously owned a business, and other details regarding ownership and partnership.

4.2.1 Age of the business

The age of the business was calculated from the date on which it was first established to the date on which the interview took place.

Ages of SMECEs	Less than two years old	3 to 5 years old	6 to 10 years old	More than 10 years old	Total Number	Percentage of Total
General Contractors	2	8	19	9	38	76%
Specialist Sub-Contractors	1	2	4	1	8	16%
Labour only Sub-Contractors		1	2	2	4	8%
Total Number	3	11	25	11	50	
Percentage of Total	6%	22%	50%	22%		100%

Table 4.3 Ages of SMECEs

The majority of the SMECEs (50%) were found to be between 6 and 10 years old, while only a small number (6%) were less than two years old. An important inference can be drawn from the findings, namely that the former group are in fact the survivors of the building recession. They have been in existence and operating in a depressed industry, for long enough to be sustainable and to have the resilience necessary to survive.

4.2.2 Membership of electrical contractors' associations

Table 4.4 gives the names and details of the associations to which the respective SMECEs belong.

Membership of Electrical Contractors' Associations	Number of responses	Percentage of total
ECA	48	96%
ECB	48	96%
EECF	20	40%

Table 4.4 Membership of Electrical Contractors' Associations

Of the 50 firms interviewed, 48 belong to more than one association. Only two firms were not registered with any electrical contractors' associations at all. The reason they gave was that their firms were too small, but effectively this also means that they are operating illegally.

Both the ECA and the EECF are employer organizations that assist employers with wage negotiations and labour disputes, and of the three associations, only the ECA has the resources to provide training programs to employees of ECA members. Businesses would register with the ECB for the sole purpose of obtaining a registration number as an electrical contractor.

4.2.3 Previous business ownership

The findings reflected that 90% of all SMECE owners surveyed had never before started a business of their own. This suggests that the majority of the owners obtained their practical and business background during their employment at a firm for which they had previously worked as an employee.

4.2.4 Ownership of firm

Tables 4.5 and 4.6 contain details concerning the ownership of the business, specifically whether it was a sole proprietorship or a partnership, and what type of registered business each was.

Ownership of SMECEs	Sole Owner	Partnership	Number of responses	Percentage of total
General Contractors	30	8	38	76%
Specialist Sub-Contractors	8	0	8	16%
Labour only Sub-Contractors	4	0	4	8%
Total number of responses	42	8	50	100%

Table 4.5 Ownership of SMECEs

As per Table 4.5 above, the majority (42 firms or 84%) of the 50 SMECEs interviewed were sole owners of their firms, and as per Table 4.6 below, the majority (39 firms or 78%) appear to be registered as Close Corporations (CC).

Type of Registration of SMECE	Sole Trader	Close Corporation	Private Company	Number of responses	Percentage of total
General Contractors	4	32	2	38	76%
Specialist Sub-Contractors	2	5	1	8	16%
Labour only Sub-Contractors	1	2	1	4	8%
Total number of responses	7	39	4	50	100%

Table 4.6 Type of registration of SMECEs

4.3 PERSONAL BACKGROUND OF OWNERS

This section discusses the background of the firm's owner, which includes his age, his father's occupation, his tertiary education, the main source of the firm's income and his language skills.

4.3.1 Age of owners

In the following table (Table 4.7), the ages of the SMECEs' owners are given in ten-year intervals.

Ages of Owners	Number of responses	Percentage of total
20 – 29 years	1	2%
30 – 39 years	8	16%
40 – 49 years	24	48%
50 – 59 years	18	36%
Totals	50	100%

Table 4.7 Ages of owners

The owners' ages range from 27 to 59 years, and 48% of them are between 40 and 49 years old. The average age sampled is between 45 and 46 years.

4.3.2 Father's occupation

Contrary to what was expected, the majority of the respondents reported that their fathers had not in fact been employed in the electrical contracting industry or working as tradesmen. A quarter of the interviewees (25%) answered that their fathers had been employed in the electrical contracting industry or as tradesmen, but the rest (a substantial 75%) replied that their fathers had been employed in other lines of work, such as policemen, bus drivers, fishermen, train drivers, brick layers, school principals, managers and printers.

4.3.3 Educational background of owners

The following table (Table 4.8) reflects the highest school standard passed by the interviewees. The majority of the interviewees (76%) had completed Std 10 (Matric), and only 24% had not passed their Matric.

Highest Standard passed at School	Number of responses	Percentage of total
Std 8	11	22%
Std 9	1	2%
Std 10	38	76%
Totals	50	100%

Table 4.8 Highest standard passed at school

The following table (Table 4.9) indicates the qualifications obtained by the firm's owners. Of the interviewees, 86% had obtained a national certificate, 12% a Technikon qualification and 2% a University degree.

Type of Qualification	Number of responses	Percentage of total
National Certificate (N1, N2,N3)	43	86%
Technikon Diploma (T1 – T4)	6	12%
University Degree	1	2%
Total	50	100%

Table 4.9 Types of qualifications obtained by owners

4.3.4 Main source of income

For the majority of the firms their main source of income came from a combination of electrical work, such as office blocks, township reticulation, maintenance and domestic units wiring. A reason for the above is that they recognized a need to diversify into different fields in order to ensure a regular flow of work.

4.3.5 Language skills of owners

From the survey data, it was established that all the respondents could speak, read and write either English or Afrikaans, or both. Only two of the interviewees could speak, read and write other languages, such as French and German. It was also noted that none of the interviewees could speak, read or write any black language.

4.4 EDUCATION AND TRAINING OF OWNERS

This section deals with the training backgrounds of the interviewees, and specifically looks at aspects such as the following: their previous employment in the electrical contracting industry; in what capacity they had been employed; whether they had previously worked as apprentices in the industry; whether they were intending to receive or pursue future training; what type of further training they felt they needed; and which training institutions they preferred to attend.

4.4.1 History of employment in the electrical contracting industry

The overwhelming majority (94%) of the interviewed business owners had been employed in the electrical contracting industry before starting their own electrical contracting company. Only 6% had not been involved in the electrical contracting industry at all before opening their own firm. The data further indicated that the majority of the interviewees had been employed as apprentices, skilled workers, foremen and managers.

The general period of employment before an apprentice can become a foreman is 3 to 5 years after completion of the apprenticeship. An apprenticeship lasts approximately 2.5 to 3.5 years. None of the interviewees had been employed in a managerial position for longer than 8 years before starting their own business. Apprentices do not always become foremen or managers. This is, however, the common route to follow when opening one's own business.

4.4.2 Apprenticeship

The following table (Table 4.10) summarizes whether the owners of SMECEs had undergone a period of apprenticeship in the electrical contracting industry before opening their own businesses in this field.

Apprenticeship Training	Number of responses	Percentage of total
No apprenticeship	6	12%
Formal electrical apprenticeship	44	88%
Totals	50	100%

Table 4.10 Apprenticeship training of owners

The data indicated that a large majority (88%) of the respondents had indeed served a formal electrical apprenticeship. It was also noted from the data received from the

respondents that 2 of the interviewees indicated that they had actually served two formal apprenticeships, namely as electricians and as plumbers.

4.4.3 Management training

With regard to management training received by the owners of SMECEs, 72% of the interviewees indicated that they had not in fact received any management training at all. The remaining 28% of the interviewees indicated that they had received formal education or training on how to manage an electrical contracting firm.

The majority of the respondents (60%) indicated that they required further training. The most frequently noted field of required training was business management (including specifically financial management, tendering and administration).

Of the interviewees, 69% indicated that they had thus far taken no further steps to receive the required training, whereas the remaining 31% indicated that they had already done something to obtain the necessary training, such as attending technical courses, tendering courses and management courses.

The respondents indicated that they would prefer to receive training from the following institutions:

1. Western Province Technical College (59%)
2. Electrical Contracting Association (ECA) (38%)
3. University Business School (UCT & Stellenbosch) (3%)

4.5 ENTRY INTO ELECTRICAL CONTRACTING INDUSTRY

This section describes the factors that led to the individual business owners entering the electrical contracting industry and founding their own SMECE. Aspects covered include what motivated them to start their own business, the roles played by previous employers, how work was first obtained and what were the most serious problems encountered in establishing the firm.

4.5.1 Reasons for starting one's own electrical contracting firm

The following table (Table 4.11) summarizes the reasons that motivated individuals to establish their own electrical contracting firms. These results can be divided into two categories, viz. positive and negative reasons.

- Positive reasons included inheriting a family business, a desire to be independent and ambition.

- Negative reasons included unemployment, difficulty of finding a job and the fact that they could earn more working as an electrical contractor.

Reasons for becoming an Electrical Contractor	Number of responses	Percentage of total
Family business	3	6%
Ambition	27	54%
Independence	14	28%
Unemployment	4	8%
More money	2	4%
Totals	50	100%

Table 4.11 Reasons for becoming an electrical contractor

From Table 4.11 above it appears that the majority (88%) of the respondents had started their firms for positive reasons. The most positive motivations were ambition (54%) and a need for independence (28%). Both of these represent the entrepreneurial qualities of firm owners. By comparison, the most common negative motivator was unemployment (8%).

4.5.2 Roles of previous employers

Previous employers were not a major source of assistance to the owners of new enterprises. Only 4% of the respondents indicated that they had received assistance from their previous employers in starting their own electrical contracting enterprises. This assistance manifested in the previous employer passing on excess work, providing housing contracts with builders with whom he worked and doing maintenance work.

4.5.3 Sources of the first contract

The following table (Table 4.12) indicates how the firm's first contract was obtained.

Sources of First Contracts	Number of responses	Percentage of total
1. Advertising the new business	20	40%
2. Tendering for new work	9	18%
3. Word of mouth (good work and quality work)	7	14%
4. Negotiating with developers	6	12%
5. Sub contract with previous clients	4	8%
6. Sub contract with LSEC	2	4%
7. Moonlighting while working on another permanent job	2	4%
Totals	50	100%

Table 4.12 Sources of first contracts

In Table 4.12, we can see that "advertising" in one form or another was successfully used as a method of attracting the firms' first contracts. The second most common source of work was "tendering", and the third most common was word of mouth advertising, referring to the "good workmanship" of the enterprise.

4.5.4 Most serious problems encountered when starting the business

Table 4.13 below summarizes the most serious and the most frequently encountered problems when the firm was first established.

Most Serious Problems when starting business	Number of responses	Percentage of total
1. Lack of Finance/Working capital	19	38%
2. Unreliable labour force	9	18%
3. Slow payment by clients	8	16%
4. Could not find clients/contracts	6	12%
5. Lack of sufficient transport	5	10%
6. Lack of equipment and material	3	6%
Total	50	100%

Table 4.13 Most serious problems encountered when starting the business

It is clear from the data in Table 4.13 that the lack of finance and working capital was the most commonly reported problem, affecting 38% of respondents. The second most serious problem reported by 18% of the respondents was an unreliable labour force and the third most common problem (16%) was slow payment by clients.

4.6 RECENT AND CURRENT ACTIVITIES OF THE BUSINESS

This section describes the firm's recent and current activities. Aspects covered included the following: the types of clients the business had, how contract amounts were established, the number of contracts undertaken per year, information about the first and the most recent contract, the firm's current operations and how it measures success.

4.6.1 Types of clients

The following tables (Table 4.14 and Table 4.15) summarize the types of clients who appoint the interviewed electrical contracting firms.

Types of Clients of General Contractors	Always	Sometimes	Never	Number of Responses
Employed by Individuals	3	4	0	7
Employed by Organisations	23	2	0	25
Employed by specified others (PWD, Government)	0	2	4	6
Number of Responses	26	8	4	38
Percentage	68%	21%	11%	100%

Table 4.14 Types of clients of general contractors

From the above Table 4.14, it can clearly be seen that General Contractors are mostly employed by organizations (companies) rather than by individuals.

Types of Clients of Sub-Contractors	Always	Sometimes	Never	Number of Responses
Developers	1	0	0	1
Building Contractors	3	0	0	3
LSEC	1	0	0	1
Individuals	7	0	0	7
Number of Responses	12	0	0	12
Percentage	100%	0%	0%	100%

Table 4.15 Types of clients of sub-contractors

From the data contained in Table 4.15, it appears that it is most frequently individuals, rather than companies, who employ sub-contractors. However, a number

of sub-contractors also reported that they did "sometimes" work for developers or building contractors (for example, Murray and Roberts).

4.6.2 Methods of obtaining work

Table 4.16 below summarizes the answers to the question in which respondents were asked to indicate their methods of obtaining work, i.e. how frequently they tendered or negotiated for work, or how frequently contracts were based on "take it or leave it" offers by the employer.

Methods of Obtaining Work	Never	Sometimes	Always
How often do you obtain work through competitive tender negotiations?	3	32	15
Percentage of total SMECEs	6%	64%	30%
How often is work obtained through negotiations?	2	10	38
Percentage of total SMECEs	4%	20%	76%
How often is work obtained through a "take it or leave it" offer by the client?	33	14	3
Percentage of total SMECEs	66%	28%	6%

Table 4.16 Methods of obtaining work

From Table 4.16 it appears that 30% of the firms always obtain work through competitive tender, 64% sometimes do so, and only 6% never do so. Negotiation was reported to be the most common method of agreeing upon new work, with 76% of the respondents always negotiating their work contract and 20% sometimes doing so. Although 66% of the firms reported that they never accept take-it-or-leave-it offers by clients, an alarming 28% reported that they did sometimes do so. This indicates that the client is only prepared to pay a certain amount, and that respondents are likely to accept a contract, on which they will probably make losses, or on which they may at most break even.

4.6.3 Number of contracts undertaken per year

Table 4.17 presents the number of contracts that can be undertaken by the interviewed SMECEs per year.

Number of Contracts undertaken per year	Number of responses	Percentage of total
10	2	4%
20	4	8%
25	6	12%
30	8	16%
35	9	18%
More	29	58%
Total	50	100%

Table 4.17 Number of contracts undertaken per year

From the above Table, it appears that 58% of the firms had more than 35 contracts per year. This number is also affected by the Rand value of the contracts; in other words, the smaller the Rand value (and therefore the smaller the work involved), the higher the number of contracts a company will undertake in a year.

4.6.4 Comparison of first and most recent contracts

This comparison first looks at the types of employer, who gave the various firms their first contract and their most recent one, and thereafter looks at the types of work involved in these two contracts. The purpose of this comparison is to determine whether or not there had been a change in the type of client and in the type of work done, once the firm had become established in the industry.

4.6.4.1 Types of clients or employers

Table 4.18 below compares the types of clients or employers, from which the various SMECEs interviewed in this study received their first and their most recent contracts.

Types of Clients/Employers	First Contract		Most Recent Contract	
	Number	Percentage	Number	Percentage
Owner/Individual	26	52%	21	42%
Developer	6	12%	12	24%
LSEC	8	16%	3	6%
Building Contracts	10	20%	14	28%
No Response	0	0%	0	0%
Totals	50	100%	50	100%

Table 4.18 Comparison of employer-types with regard to first and most recent contracts

The data in Table 4.18 above indicates that the most common types of employers in both the first and the most recent contract were individuals rather than companies. The second most common types of employer were building contractors. When comparing the first and the most recent contract of a firm, it also seems that they have more than one type of client.

4.6.4.2 Types of work

Table 4.19 below compares the type of electrical work done by the respondent firms during their first contracts with that done during their most recent contracts.

Types of Work	First Contract		Most Recent Contract	
	Number	Percentage	Number	Percentage
Building Reticulation	26	52%	29	58%
Township Reticulation	2	4%	2	4%
Maintenance	7	14%	3	6%
Domestic Units	15	30%	14	28%
Totals	50	100%	50	100%

Table 4.19 Comparison of electrical work on first and most recent contracts

The majority of the respondents indicated that their first and their most recent contracts were building reticulation, which includes electrical wiring, installation of light fittings, cables and distribution boards. The second most common type of work was wiring of domestic units, which is very similar to building reticulation but is done on a smaller scale. Cable and transformer installations are carried out primarily as part of township (suburb) developments, as in new housing projects and industrial parks.

4.6.5 Contract values and profits

Data received from the respondents revealed that contract amounts varied from R25,000 for the first electrical contract appointment to R1,000,000 for the most recent electrical contracts. Tables 4.20 and 4.21 reflect the profits, as indicated by the respondents, on their first and most recent contracts respectively.

Percentage of Profit earned on first electrical contract	Number of responses	Percentage of total
1 to 5%	1	2%
6 to 10%	18	36%
11 to 15%	16	32%
16 to 20%	4	8%
Above 20%	1	2%
Total	50	100%

Table 4.20 Percentage of profit earned on first electrical contract

As per Table 4.20 above, it seems that most of the respondents (36%) made a profit of 6 to 10% on their first contract, whereas only 1 company made a profit between 1 and 5%, and only 1 company earned a profit above 20%.

Percentage of Profit earned on most recent electrical contract	Number of responses	Percentage of total
1 to 5%	1	2%
6 to 10%	28	56%
11 to 15%	16	32%
16 to 20%	4	8%
Above 20%	1	2%
Total	50	100%

Table 4.21 Percentage of profit earned on most recent electrical contract

As per Table 4.21 above, the majority of the firms indicated that they had made a profit on their most recent contract of between 6 and 18%, with an average of 13% profit. The majority of the firms indicate a profit of 6 to 15% with an average of 10.5%. In comparison with Table 4.20, the profit margin of electrical contractors after taxation and overheads was 4.09%.

4.6.6 Current activities of firms

Table 4.22 shows the various current activities of the respective firms. The SMECEs' owners were asked to respond to questions in three categories, viz. labour (i.e. what is your work force doing at the moment?), equipment (i.e. what is happening with your equipment at present?) and owner (i.e. what are you yourself as the owner of the business doing at the moment?).

Current Activities	Number of responses	Percentage of total
1. Labour		
1.1 Laid off	2	4%
1.2 Being paid, not working	2	4%
1.3 Doing piecemeal work	-	-
1.4 Working on site	13	26%
2. Equipment		
2.1 Returned to hire	1	2%
2.2 Standing idle	2	4%
2.3 Hired out	-	-
2.4 Used for piecemeal work	-	-
2.5 On site	14	28%
3. Owner		
3.1 Not active	-	-
3.2 Negotiating new contracts	16	32%
3.3 Following up on debtors	6	12%
3.4 Doing alternative work	5	10%
3.5 Managing current jobs	12	24%
Total	73	146%

Table 4.22 Current activities of business

Most of the business owners replied as follows: 26% said that their labour was currently working on site and 28% said that their equipment was being used on site. Of the owners, 32% said that they were busy negotiating new contracts, while 24% were busy managing current jobs. From the data, it thus appears that the majority of the firms are either busy with current work or looking for new work.

In most cases, the respondents provided more than one answer to what their firm was doing at the time. For this reason, the percentage column in the above table exceeds 100%.

4.6.7 Measurements of success

The following table (Table 4.23) contains the responses of firm owners when asked how they would measure success in their business. The following methods were given in descending order of importance, i.e. with 1 being the most commonly cited criterion and 7 being the least important one.

Measurements of Success	Rating
Being approached by new clients	1
Client satisfaction	2
Profit	3
Completing jobs before due date	4
Doing quality work	5
Getting more future work	6
Getting paid the agreed amount	7

Table 4.23 Measurements of success

4.7 FUTURE OBJECTIVES OF THE BUSINESS

In this section, the objectives of the firms are discussed. Included in this discussion are aspects such as the following: the firm's plans for the future, whether these plans include expansion, what steps are being taken towards achieving the firm's objectives and the two most important objectives of the company.

4.7.1 Plans for the future

The majority of the interviewed business owners (68%) intended to maintain the same size business, 18% expressed the desire to expand their businesses, whereas

14% actually wanted to reduce the size of their firms or alternatively to diversify. It is interesting that none of the business owners expressed an intention to sell or leave their business or to start a new electrical contracting business in the near future.

4.7.2 Steps taken to achieve objectives

The following table (Table 4.24) indicates what steps business owners have taken thus far towards achieving their objectives as set out in the previous paragraph (e.g. expansion, reduction in size or diversification).

Steps taken towards achieving objectives	Number of responses	Percentage of total
Tried to diversify	6	12%
Advertised	11	22%
Invested in additional capital	4	8%
Approached possible clients	28	56%
Invested funds in savings accounts	1	2%
Total	50	100%

Table 4.24 Steps taken towards achieving objectives

The majority of the respondents (78%) had approached possible clients and had advertised to attract new projects and clients. Only one of the firms (2% of the total) had managed to invest any funds in savings accounts. Many respondents indicated that they had taken more than one course of action.

4.7.3 Identification of important objectives

The following table (Table 4.25) summarizes the objectives that were identified by the respondents. The majority of the interviewees gave two objectives that were particularly important to them.

Identification of important Objectives	Number of responses
To obtain more clients and contracts	34
To have a skilled and reliable labour force	21
To ensure cash flow consistency (payments)	14
To own their premises	9
To have sufficient and reliable transport	7
To advertise and market their business	5
To do good quality work	3
Total number of responses	93

Table 4.25 Identification of important objectives

Table 4.25 suggests that the most common and significant objectives listed by the respondents were, firstly, to obtain more work, secondly, to have a skilled and reliable work force in order to be able to complete the work and, thirdly, to ensure a reliable and consistent cash flow so that their firms could operate more smoothly and successfully. The fourth most important objective was that businesses wanted to own their premises, so that they no longer needed to pay rent to a landlord.

4.8 MANAGEMENT OF ORGANISATION AND PRODUCTION

In this section, the management of the organization and its production operations are analysed. Aspects covered include the following: equipment ownership and technical support by the supplier; banking practices and financial records; tendering methods; reasons for leaving the site before completing a contract; working capital requirements and the capacity to do several contracts simultaneously.

4.8.1 Equipment ownership and technical support

It was found that 79% of the respondents own their own equipment and that 21% were hiring it. Leasing was found to be an uncommon method of obtaining

equipment. Short-term hiring (per day) was the most common method of accessing equipment not already owned by the respondents.

Table 4.26 presents the data with regard to the technical support provided by various other companies to the electrical contractors.

Type of Technical Support provided to SMECEs	Number of responses	Percentage of total
Joint venture partner	4	8%
Equipment suppliers	1	2%
Government / SBDC	0	0%
Industry association	0	0%
Electrical Contractor (previous employer)	0	0%
Material suppliers	29	58%
Electrical Consultants	16	32%
Total	50	100%

Table 4.26 Type of technical support provided to SMECEs

From Table 4.26 above, it appears that the majority (58%) relied on material suppliers, 32% received technical support from electrical consultants, and a mere 2% utilised electrical equipment suppliers. Moreover, no technical support was forthcoming from industry associations, Small Business Development Corporations (SBDCs) or electrical contractors who had employed the SMECE.

4.8.2 Banking and financial records

A high percentage (96%) of respondents reported that they had separate bank accounts for personal and business transactions. In addition, it was found that all SMECEs kept accurate financial records of their business operations. In this regard, it was noted that a lack of access to finance could be a serious problem or constraint when starting an electrical contracting business. The respondents stated, for instance, that they had recognized the importance of keeping financial statements

and accurate records, as the banking institution required these before agreeing to give them business finance, as well as on an ongoing basis thereafter.

4.8.3 Tendering

All the respondents (100%) reported that they calculated the quantities and costs of every single item or service for tendering on new contracts. They maintained that they did not use a rate per square meter or information about their competitors' costs in order to charge less than them. It should be said that tendering on an electrical installation involves considerable costing skills, and that sometimes mistakes are made, which may suggest that certain electrical contractors undercut others to obtain the contract (although they would not of course admit to this).

4.8.4 Departure from site

The respondents were requested to indicate whether they had left a site before completing their contract and, if so, why. In this regard, it is possible that the following percentages are understated, because respondents might have been embarrassed to admit that they had done this. Notwithstanding the above, 86% of the respondents noted that they had never left sites permanently, while 14% had in fact done so.

Table 4.27 below indicates the reasons given by these seven SMECEs as to why they had abandoned certain on-site contracts. The reason they gave was that their clients had not paid them. It is not clear from the data whether this was because they had done poor quality work, or because their clients could not afford to pay them.

Reasons for leaving on-site work	Number of responses	Percentage of total
Not paid	7	14%
Ran out of finance	-	0%
Forced out because of threats	-	0%
General violence in area	-	0%
Labour problems	-	0%
Total	7	14%

Table 4.27 Reasons for leaving on-site work before completion of contract

4.8.5 Working capital and contract capacity

The majority (72%) of the respondents indicated that they calculated their working capital requirements on a monthly basis.

Table 4.28 below contains data indicating how many contracts a firm was able to undertake simultaneously. The purpose of the question was to establish whether the management structures of the firms were of such a nature that they could permit or facilitate expansion and thereby ensure the sustainability of the company.

Number of Simultaneous Contracts	Number of responses	Percentage of total
No response	0	0%
Only 1 contract	0	0%
2 contracts	0	0%
3 contracts	1	2%
4 to 10 contracts	26	52%
10 to 15 contracts	18	36%
15 to 20 contracts	5	10%
Totals	50	100%

Table 4.28 Capacity to undertake simultaneous contracts

From Table 4.28 above, it is clear that the majority (52%) of the firms could indeed undertake more than four projects simultaneously.

4.9 CAPITAL AND FINANCING

This section describes the sources of capital and finance of the firms, as well as looking at the problems experienced by firms, the effect of legal judgments on them and the growth in capital over the lifetime of the different firms.

4.9.1 Sources of finance

The question posed in the survey attracted multiple responses from the various SMECEs, which indicates that many firms obtained finance from more than one source. The most common sources of finance at start-up were the respondents' "own savings". The second most common sources of finance were "partners, family and friends". According to the data received, currently the most common sources of finance are "credit from material suppliers" and "commercial banks", meaning overdraft facilities.

4.9.2 Loan problems

Table 4.29 indicates whether the respondents experienced any problems when they applied for a loan from a financial institution.

Applying for Loans	Number of responses	Percentage of total
I have not applied for a loan.	0	0%
Yes, I did have problems when I applied for a loan.	17	34%
No, I did not have any problems when I applied for a loan.	33	66%
Totals	50	100%

Table 4.29 Applying for loans

The findings indicate that all the respondents had at one time or another, either when starting their firm or once the firm had already been up and running, applied for a loan from a financial institution. The majority (66%) of the respondents did not have any problems obtaining a loan, although 34% did.

The 17 respondents who had answered, "yes, they have loan problems", in the previous Table 4.29, were asked to specify the nature of these problems. Their answers are summarized in Table 4.30.

Nature of Problems	Number of responses	Percentage of total
Do not own property	3	18%
Do not have capital	9	52%
Do not have contracts on credit	2	12%
Institutions are inaccessible	1	6%
Not in business long enough	2	12%
Totals	17	100%

Table 4.30 Problems in meeting requirements for collateral

As shown by Table 4.30 above, the most common problems encountered by SMECEs with regard to meeting the financial institutions' collateral requirements,

were a lack of capital (52%) and non-ownership of property (18%). It was also problematic that they did not have a business track record (12%) and that they did not have any contracts on credit (12%).

4.9.3 Legal judgments

Only one of the respondents indicated that he had legal judgments against him, whereas another respondent indicated that he had difficulties securing a new loan from a financial institution and that he had to declare himself bankrupt and start over again.

4.9.4 Money invested

The data generated from the questionnaires indicated that all firms had invested in hand tools, transport and electrical tools at the start-up of their businesses. Furthermore, investments in these three categories of equipment continued to increase significantly in their current business operations, but no data was given regarding their cash in hand for their current operations.

4.10 LABOUR

In this section, details are given of the various firms' employees. Aspects covered include the following: how many employees a company had at start-up; how many it has at present (in 2003); the extent to which casual labour is employed; the extent to which other electrical sub-contractors are used; and, lastly, whether the firm is registered with the Industrial Council and related inspectors.

4.10.1 Numbers and types of employees

The survey questionnaire required respondents to indicate how many employees they had. Tables 4.31 and 4.32 summarise the numbers of employees at start-up and at present (in 2003).

Number of Employees at start-up	Number of responses	Percentage of total
1 to 5	44	88%
6 to 10	6	12%
11 to 15	0	0%
16 to 20	0	0%
21 to 25	0	0%
Totals	50	100%

Table 4.31 Number of employees at start-up

Number of Employees in 2003	Number of responses	Percentage of total
1 to 5	6	12%
6 to 10	15	30%
11 to 15	18	36%
16 to 20	9	18%
21 to 25	2	4%
Totals	50	100%

Table 4.32 Number of employees in 2003

It is interesting to note that at start-up 88% of the respondents had employed less than 5 people, whereas 84% currently employ between 6 and 25 people, with an average of 15 people.

4.10.2 Casual labour

One of the questions posed to the respondents was how frequently they used casual labour. Their responses are summarised in Table 4.33 below.

Use of Casual Labour	Number of responses	Percentage of total
Always	7	14%
Sometimes	41	82%
Never	2	4%
Total	50	100%

Table 4.33 Use of casual labour

The overwhelming majority of the businesses (82%) sometimes used casual labour, 14% always used casual labour and 4% never used them.

4.10.3 Sub-contracting work to smaller firms of electricians

Respondents were asked whether they had ever sub-contracted any of their own work (which they had themselves received as sub-contractors from a bigger firm) out to smaller firms of electricians. Their responses revealed that 28% had indeed sometimes sub-contracted their own work out to smaller electrical contracting firms, whereas 48% indicated that they had never done so. It is interesting to note, however, that many of the respondents (24%) were not in fact happy with the qualify of work done by their own sub-contractors and thus indicated that they would rather do the work themselves in the future even if they did not have the time or the manpower.

4.10.4 Employee payment

Due to the nature of the building industry, the majority of the firms pay their employees per hour and weekly or every second week. Generally, only clerks or administrative staff are paid on a monthly basis.

4.10.5 Registration with the Industrial Council

The responses to the question on whether or not their firm was registered with the Industrial Council revealed an important finding, viz. that only 95% of the firms were registered. Effectively, this means that 5% of the firms were operating illegally. When firms were asked why they had not registered, they replied that it was too expensive to join the Industrial Council and that membership would place a financial burden on the firm.

Thereafter, firms were asked whether the Industrial Council had done any checks on their firms. Their answers, recorded in Table 4.34 below, revealed that the Industrial Council visits only 16% of the firms on a regular basis.

Frequency of Visits	Number of responses	Percentage of total
Not at all	11	22%
Regularly	8	16%
Sometimes	31	62%
Total	50	100%

Table 4.34 Frequency of visits by Industrial Council inspectors

4.11 PROBLEMS AND CONSTRAINTS

This section analyses the problems experienced by the respondents in operating their firms. Respondents were asked to rank on a scale of 1 (low) to 5 (high) a list of 23 problems falling into the following categories: labour, finance, production and management, legislation and government, and markets. The results of this ranking are presented in a summarised table with a more detailed analysis of the serious problems experienced by the firm owners.

4.11.1 Serious problems

The respondents were asked to rank on a scale of 1 (low) to 5 (high) a list of problems and constraints that they experienced in the running of their own businesses. Table 4.35 below summarises their responses to each of the problems:

Order of Questions	**Serious Problems or Constraints**	Rating out of 5	Ranking in decreasing order of severity
	Labour		
1	Cost of Labour	4.25	1
2	Reliability of labour	3.95	3
3	Shortage of skilled labour	3.41	5
4	Relationship with main contractor	1.71	23
5	Relationship with sub-contractor	2.35	16
6	Worker action	2.53	14
	Finance		
7	Access to loans/security	2.65	12
8	Repayment of loans	2.47	15
9	Interest rate issues	2.59	13
	Production and management		
10	Lack of technical skills	2.82	11
11	Supply/cost of materials	4.00	2
12	Cost of/access to equipment	3.05	9
13	Tender/negotiation procedures	3.18	8
14	Working out total costs	2.94	10
15	Accounting/reconciliation	2.00	20
16	Cash flow/slow payment	3.26	6
	Government and legislation		
17	Access to government tenders	2.18	19
18	Tax legislation	2.20	18
19	Industrial councils/labour legislation	1.90	21
20	Other legislation	1.88	22

	Markets		
21	Preference for white contractors	2.29	17
22	Erratic inflow of work	3.88	4
23	Competition	3.20	7

Table 4.35 Serious problems and constraints

The number one problem encountered by the 50 respondents is cost of labour, which scored 4.25 out of 5. The second most serious problem is the supply and cost of material (4.0), and the third most serious problem is the lack of reliable labour (3.95). The fourth most serious problem was the erratic influx of work (3.88), where as the fifth was a shortage of skilled labour (3.41).

4.11.2 Nature of and solutions to serious problems

Respondents were asked to indicate their 3 most serious problems, to provide details of the nature of the problem and to suggest possible solutions. A summary of the actual responses is given in Table 4.36 below:

Problem 1: Cost of labour
Nature of Problem: 1. Labour is too expensive. 2. The labour force demands more money than what their skills are worth. 3. The labour force demands more and higher wages.
Possible Solutions: 1. Education/Training should be compulsory. 2. More skilled labour should be employed. 3. The labour force should be reduced. 4. The business should obtain more profitable contracts.

Problem 2: Supply and Cost of materials
Nature of Problem: 1. Materials are too expensive. 2. The business struggles to make a profit because of these high prices. 3. There is a lack of finance to purchase bulk materials at discount.
Possible Solutions: 1. Suppliers should give better discounts. 2. The business should buy material in bulk. 3. The costs of materials should be lowered and controlled.

Problem 3: Reliable work force
Nature of Problem: 1. Workers often do not arrive for work. 2. Workers cannot work without supervision. 3. Workers get tired and their quality of work is often poor. 4. Workers steal material and are dishonest.
Possible Solutions: 1. The business needs a good foreman/supervisor. 2. The labour force should be punished if it is unreliable and dismissed if it is dishonest. 3. The work force needs to receive more training and must become part of the project.

Table 4.36 Three problems and their possible solutions

From the above table, it can be concluded that respondents regard it as essential to obtain good electrical contracts, but that the cost of labour, the high supply costs of materials and an unreliable work force make it very difficult for companies to successfully complete a project on time, within the budget and with an acceptable profit. It must be noted that all the respondents were willing to suggest possible

solutions to the problems, which indicates that they recognized the importance of their own role and initiative and the need to be pro-active in finding practical solutions to ensure the sustainability and success of their business.

4.12 SUSTAINABILITY

This section analyses the long-term sustainability of the firms that were interviewed. The respondents were asked to choose from 12 issues or goals that might be particularly important in achieving the long-term sustainability of their business, and to rank these on a scale of 1 (low) to 5 (high).

4.12.1 Importance of long-term sustainability

The respondents were first asked whether the long-term sustainability of their business was important to them or not. All of the respondents indicated "yes", which suggests that the smooth running of their business is important to them, and that they are committed to achieving success. Less than half of the respondents (44%), however, indicated that they had identified specific goals that would improve the sustainability of their business.

4.12.2 Future sustainability

The respondents were asked to rank on a scale of 1 (low) to 5 (high) a list of personal, management and financial issues and how these might be important in ensuring and improving the sustainability of their businesses.

Order of Questions	**Importance for Future Sustainability**	Rating out of 5	Ranking
	Personal issues:		
1	Personal background	4.54	2
2	Overall training and education	4.50	4

	Management issues:		
3	Current position in industry	3.54	11
4	Management structure	4.08	10
5	Organisation productivity	4.46	5
9	Company values	4.13	9
10	Alliance with other companies	3.25	12
11	Business decisions and future planning	4.40	6
12	Long term strategies	4.33	7
	Financial issues:		
6	Capital and Finance	4.51	3
7	Growth opportunities	4.67	1
8	Sustainable availability of work	4.21	8

Table 4.37 Importance of specific issues for future sustainability

According to the data contained in Table 4.37 above, the following are identified as being particularly important for the future sustainability of the business. The first was growth opportunities (with a rating of 4.67), the second was the company's and/or the company owner's personal background (with a rating of 4.54) and the third was capital and finance (with a rating of 4.51). Effectively, we can conclude that if there is sufficient work available, if the owner of the business has the requisite personal background to know what needs to be done and what each project entails, and if the necessary finance is available to do the project, then a firm can be sustainable!

4.12.3 Factors that may influence the sustainability of SMECEs

The question to the respondents was to identify which factors may influence the sustainability of SMECEs. These factors are summarized in Table 4.38 below.

Factors influencing the Sustainability of SMECEs
1. Good quality workmanship 2. Access to capital, finance and credit 3. Successful completion of project 4. Reliable and responsible skilled labour 5. Reasonable costs of material 6. Effective marketing 7. Payment on time

Table 4.38 Factors influencing the sustainability of SMECEs

The respondents indicated that good workmanship and good quality of work are an important factor in ensuring that their firm will have access to new work in the future, which is crucial to the long-term sustainability of their enterprise. Access to capital, finance and credit for material and equipment with reliable labour and management participation also play an important role in ensuring completion of a contract on time.

In conclusion, then, this chapter has provided a thorough analysis of the data generated by the main survey questionnaire. It has examined the general attributes of the business, the personal background, training and history of the owner, the history and growth of the enterprise in question, its past and current activities, its future objectives, and finally the problems it experiences vis-à-vis its future sustainability.

CHAPTER 5: CONCLUSIONS

This chapter reports on the conclusions and the insights gained from the literature survey and from the interviews with the owners of successful SMECEs in the Cape Peninsula. The conclusions and findings reflected in this chapter are based on the data received from both these sources. The first section of this chapter will look at the problems and constraints identified by the various respondents, whereas the second section will discuss the personal strengths and positive attributes that are necessary for the success of small- to medium-scale electrical contracting businesses. The third section will consider the most important factors that will improve the long-term sustainability of these businesses, and lastly, the final section will summarise the insights generated by the afore-mentioned discussions.

5.1 PROBLEMS AND CONSTRAINTS

5.1.1 Identification of order and ranking

Table 5.1 below is a re-working or re-arrangement of the serious problems and constraints identified and discussed by the various firms' owners, which were summarized in Table 4.35. In order to make these results easier to read, Table 5.1 below revises their order from the most important (being 1) to the least important (being 23). It also identifies the category to which each problem is related, i.e. labour, management, markets, finance, or legislation and government.

PROBLEMS AND CONSTRAINTS

Original Table 4.35	Ranking	Type of Problem	Revised Order	Revised Ranking
Cost of Labour	1	LABOUR	Cost of Labour	**1**
Reliability of labour	3	MANAGEMENT	Supply / Cost of material	**2**
Shortage of skilled labour	5	LABOUR	Reliability of labour	**3**
Relationship with main contractor	23	MARKETS	Erratic inflow of work	**4**

Relationship with sub-contractor	16	LABOUR	Shortage of skilled labour	**5**
Worker action	14	MANAGEMENT	Cash flow / slow payment	**6**
Access to loans / security	12	MARKETS	Competition	**7**
Repayment of loans	15	MANAGEMENT	Tender / negotiation procedures	**8**
Interest rate issues	13	MANAGEMENT	Cost of / access to equipment	**9**
Lack technical skills	11	MANAGEMENT	Working out total costs	**10**
Supply/cost of materials	2	MANAGEMENT	Lack of technical skills	**11**
Cost of / access to equipment	9	FINANCE	Access to loans / security	**12**
Tender/negotiation procedures	8	FINANCE	Interest rate issues	**13**
Working out total costs	10	LABOUR	Worker action	**14**
Accounting / reconciliation	20	FINANCE	Repayment of loans	**15**
Cash flow / slow payment	6	LABOUR	Relationship with sub-contractor	**16**
Access to government tenders	19	MARKETS	Preference of white contractor	**17**
Tax legislation	18	LEGISLATION	Tax legislation	**18**
Industrial councils / labour legislation	21	LEGISLATION	Access to Government tenders	**19**
Other legislation	22	MANAGEMENT	Accounting / reconciliation	**20**
Preference for white contractors	17	LEGISLATION	Industrial council	**21**
Erratic flow of work	4	LEGISLATION	Other legislation	**22**
Competition	7	LABOUR	Relationship / main contract	**23**

Table 5.1 Serious problems and constraints: Ranked from 1 to 23

5.1.2 Summary of serious problems and constraints

The following pie chart (Figure 5.1) summarizes the five categories identified in Table 5.1 above, viz. management, labour, markets, finance, and legislation and government.

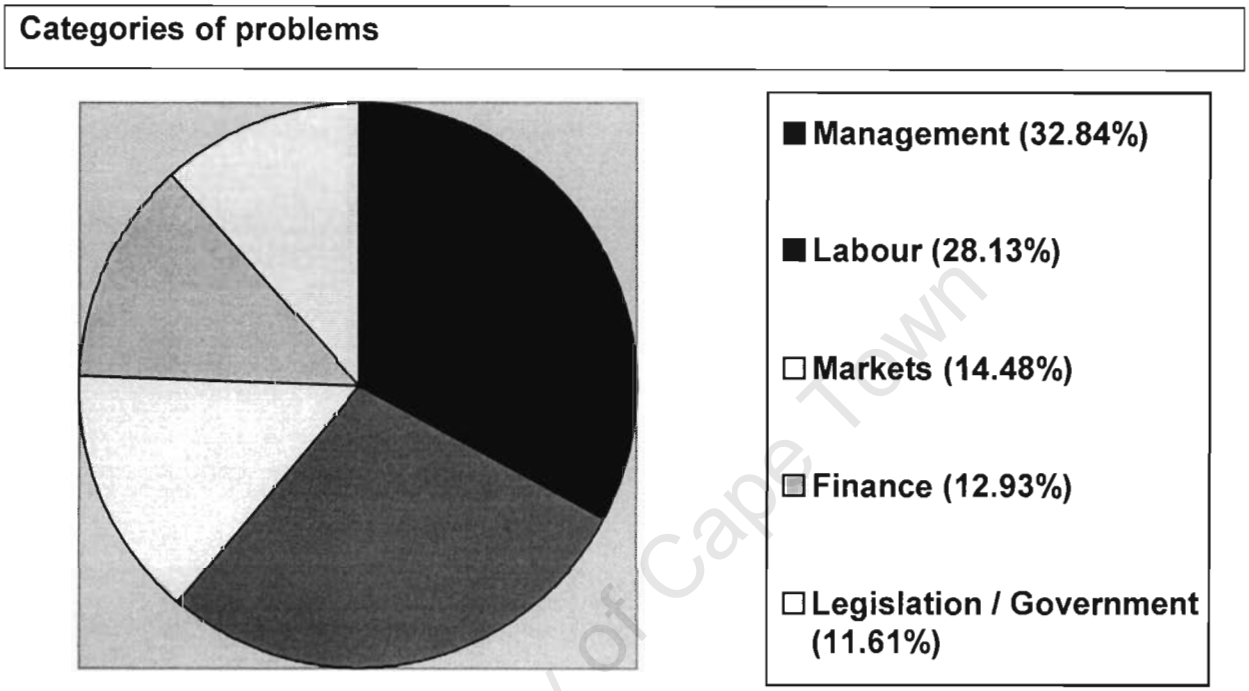


Figure 5.1 Categories of problems

The results of Table 5.1, indicating the revised ranking and the types of problem, are therefore sorted according to categories, which are in turn represented in chart-form in Figure 5.1. The purpose of this exercise is to eliminate any misinterpretation of the results in Table 5.1. For example, it is clear from Table 5.1 that "cost of labour" was the highest ranked and most common serious problem constraint encountered by SMECE owners. However, it is misleading to see this problem in isolation, and to conclude that all labour problems are the most commonly encountered problems. A more correct and more effective way of interpreting the table is to identify which categories of problems, from the point of view of SMECE owners, are indeed the most serious. The following, therefore, is a summary of the problems and constraints experienced by SMECEs, taking into consideration that results generated by

Table 5.1 and Figure 5.1 above by taking into account the responses of the various owners to the questionnaire and their elaborations of these problems and constraints.

5.1.2.1 Management problems

32.84% of SMECE owners cited these problems as being the most serious. In relation to management-related issues, the respondents referred specifically to the following problems:

- **Many SMECEs experience poor cash flow**. This is caused mainly by slow-paying or non-paying clients, or by "the next job" syndrome, where clients say that they are unable to pay the contractor at the time, but promise him another, possibly even more lucrative, contract in the near future. These next jobs do sometimes materialize, but may also be empty promises. It does in fact happen frequently that SMECEs are not paid their full contract amounts and that they do have to wait a month, even up to 6 months before they are finally paid.

- **Material costs are too high.** Many SMECEs cannot obtain discounts from suppliers. It is the general view of electrical contractors that suppliers are making an unacceptably high profit. Suppliers only give discounts to well-established contractors who have a good credit-rating and pay their bills on time, and higher discounts are given for bulk-purchases or cash-payment. Moreover, a contractor who calculates a tender that is based on 'old' prices must ensure that escalation or inflation is added to the contract.

- **Owners of firms often lack management skills such as financial, tendering and cost control skills.** Admittedly, it is the owner's responsibility to either acquire these skills themselves by attending on-going courses or classes (weekend, evening, even day-time workshops) on these issues. Alternatively, they could hire someone else who already *has* these skills or someone who can *teach* them on the job. Some owners indicated that it is

simply a matter of not having enough time or money or the ability to take off work to attend courses.

- **Owners of firms often lack the skills to control the financial operations of their business.** Often they are unable to calculate the costs of new contracts, and lack effective control over day-to-day running costs of their business. In order to overcome this problem, they will need to learn how to determine their running costs, labour costs, material estimates and transport costs, and to maintain strict control over debtors and creditors in order to take financial control of their firm.

- **Clients sometimes renege on contracts or on parts thereof.** The reason for this may well be that these contracts are sometimes verbal rather than in writing. Nevertheless, even contracts that are not in writing should be legally enforceable, but many SMECEs regard legal advice and legal action as simply another expense that they cannot afford. Another reason may be that owners of SMECEs do not want to make themselves unpopular, in case a client may offer them a good contract at a later stage. Clients do, for example, refuse to pay for certain work such as stripping an existing electrical installation of a building before the new installation can proceed, but they base this on the fact that these stripping costs should have been part of the original contract. Adopting such a stance will thus result in unpaid labour and travelling costs. As another example, an electrical contractor may agree to provide several temporary electrical supplies and lights to a site on verbal instructions of a client or the site foreman for the use of other sub-contractors (e.g. tiling, cupboard and plumbing installations). In such a situation, clients may refuse to pay for such electrical supplies and its related contract work (labour and material), by arguing that it should have been part of the full contract. The electrical contractor would then have to bear the costs for these expenses himself.

5.1.2.2 Labour problems

28.13% of SMECE owners cited labour problems such as the following as being the most serious:

- **The wages of employees are too high in relation to production.** The firm owner will employ an electrical assistant (not a qualified electrician) who must be paid according to the industrial council rates for his/her level of experience as an electrical assistant. Given the responsibility to perform the required tasks many employees that are appointed on their ability and experience actually cannot perform the required technical tasks. This leads to delays and necessitates additional supervision to assist, therefore costing the firm wages for no production.

- **Supervision of workers is costly.** Many SMECEs cannot afford to provide expensive supervision (e.g. a foreman who remains on-site throughout), even though ultimately a good foreman is essential for the smooth running of the work and to ensure that the work is actually completed according to specification and on time.

- **Skilled labour is scarce.** The main reasons for this are that there are not enough people training to become electricians, and because many of those who have been trained, eventually leave to open their own business.

- **So-called "skilled" workers are not properly skilled.** Their skills are often below an acceptable standard, and thus voluntary or even compulsory training, either on-the-job or after-hours would be necessary.

- **Workers are unreliable and have no work ethic.** This is a general problem encountered by many owners of SMECEs. It is particularly striking when employees do not report for work on Monday, after they have received their

pay on Friday. In an attempt to overcome this problem, some SMECEs only make payments on Mondays rather than on Fridays.

5.1.2.3 Market problems

14.48% of SMECE owners cited market-related problems as being the most serious, and identified the following problems and constraints:

- **The inflow of work is erratic and unpredictable**. Due to a lack of consistent work flow the firm owner might thus scale down his business. However, if his firm happens to be appointed for several contracts, he may not have the infrastructure (workers and equipment) to complete the work successfully. This will consequently slow down the growth of the business.

- **There is fierce competition among a high number of SMECEs for the same market.** The obvious solution for this would be not to encourage the creation of more SMECEs, but rather to improve existing businesses.

- **Some firms receive preferential treatment when tendering for contracts.** This may be based on firms being particularly good, effective, hard-working and delivering on-time and good quality workmanship, but it may also be based on "who you know", networking and family relationships.

5.1.2.4 Financial problems

12.93% of SMECE owners cited finance-related issues as being the most serious, and discussed the following problems and constraints:

- **Small electrical contracting businesses often lack the necessary collateral.** This is needed to obtain bank loans or overdraft facilities.

- **Many small firms struggle to make regular and timely payments of loans.** They are thus often charged high interest rates, particularly if they do not have a good track record or credit rating.

5.1.2.5 Legislation and government related problems

11.62% of SMECE owners cited issues relating to current legislation and the role of the government as the most serious, specifically noting the following:

- **Industrial council registration is compulsory and expensive.** The fees are determined by legislation for each employee, which is calculated based on the qualification and skill level of the employee and cannot be influenced by SMECEs. Firms that do not register with the industrial council will be prosecuted, if they are found out.

- **Government tenders are mainly available for firms with empowerment partners.** Any SMECE that has incorporated empowerment partners into their management structures will have access to government tenders. Many SMECEs have good and reliable previously disadvantaged employees who have been part of their firms for some time and who could be promoted to management level. As a result, this problem is not too serious in the industry as a whole.

5.2 PERSONAL STRENGTHS AND POSITIVE ATTRIBUTES

The respondents were selected because they had been successful as electrical contractors, and had gained experience in their business. In the following discussion, the data obtained from the interviews has been analysed with the purpose of establishing their strengths, their positive attributes and the various factors that would assist firm owners to ensure the future sustainability and success of their enterprises. Factors that were perceived as contributing towards success were identified and categorized under the following headings below.

5.2.1 Personal attributes

Success in any field is usually the result of personal endeavour. An individual has the choice to regard difficulties as problems or to accept them as challenges. Thus, an individual who can turn a problem into a challenge and tackle it in a constructive and creative way will enhance his chance of success. All the interviewees were found to be self-confident individuals who were aware of the strengths and weaknesses of their own business, their workers and themselves. Moreover, not only were they able to identify problems and constraints, but they also offered possible solutions to these and suggested ways of avoiding them in the first place.

5.2.2 Controlled growth

Another factor of success was the ability to control the pace of growth of the firm. All of the interviewees were aware of the dangers of allowing their firm to grow too quickly; they understood the limitations of their firms and how to operate within these limitations, by knowing when to accept work and when to turn it down. Investment of capital in too many vehicles and too much equipment and material may negatively influence the availability of cash flow and thus the consistent growth of a firm.

5.2.3 Management and planning ability

Some of the interviewees had received formal management training since starting their own business and even before then. Many admitted that they required additional training in financial management, job co-ordination, administration and tendering, but none needed additional training in the actual electrical contract work done by their firms.

5.2.4 Understanding the market

The majority of the interviewees indicated that they had entered into the electrical contracting market after a few years of working for their previous employers in the same market and therefore recognizing the market in which they wanted to work. Moreover, firm owners must continuously re-evaluate the extent of their service and what they can provide to the market place in terms of their own expertise. As soon as a particular sector of the market had become saturated or there were no further clients, owners had to re-evaluate and target new clients, markets and contracts.

5.2.5 Marketing skills

The ability of the individual to market himself as well as his firm was found to be a very important factor of success. A fundamental aspect of marketing is the ability to establish what is required or expected by the party who is being approached as a potential client. Marketing also involved securing new contracts, attracting new clients, or securing an extended bank loan. All interviewees reported that they had to overcome many obstacles in this regard for their firms to become successful.

5.2.6 Skills diversification

All of the interviewees were found to have created bigger markets for themselves by diversifying their operations. This meant that they could now do domestic installation, cable reticulation, maintenance, transformer installation and building reticulation. A key to their success was to identify what particular skills were required for these types of contracts, and then to acquire those skills by finding a suitable partner for a joint venture. Some partners become long-term partners, whereas others will share skills on a contract-to-contract basis but will remain independent after the completion of such a contract.

5.2.7 Experience and skills training

The majority of the interviewees were all qualified electricians that had completed a formal apprenticeship and therefore gained experience in the electrical contracting

industry. They emphasized that it was important for the success of their business to be skilled and experienced in order to lead their firms effectively. However, even though the owners of the businesses might be excellent and qualified electricians, their staff was not always as excellent, diligent or qualified.

5.3 IMPORTANT FACTORS TO IMPROVE THE SUSTAINABILITY OF SMECEs

Interviewees identified a number of factors that they regarded as being important for the future sustainability of their firms. These factors are summarised below.

5.3.1 Good workmanship and quality

Providing good workmanship and quality at a market-related price with no comebacks from clients will result in a happy and satisfied client, and therefore improve the likelihood of obtaining future contracts from the same client.

5.3.2 Access to capital, finance and credit

The firm's owner must be able to secure overdraft facilities and extended credit from his suppliers in order to run his firm successfully.

5.3.3 Successful completion of projects

It is important for the future success of the business and to attract new contracts that projects are completed on time and within the deadlines specified by their clients.

5.3.4 Reliable skilled labour

Firm owners must ensure that their employees are trained regularly and re-trained from time to time to improve their qualifications, and that workers are reliable and trustworthy.

5.3.5 Material costs

Firm owners have to shop around for better prices at suppliers in order to ensure that they can make a reasonable profit on each contract.

5.3.6 Terms of payment

Lastly, it is crucial that business owners clearly specify their payment terms on appointment by a client, in order to ensure that payments are received on time.

5.4 SUMMARY OF INSIGHTS

5.4.1 Electrical contracting as a career

For all the interviewees, the electrical contracting industry appears to be a career path rather than a last resort. The majority (94%) of owners had been employed in the electrical contracting industry before starting their own businesses. This also confirms the finding that owners enter the industry primarily via the "trade route" and only rarely via the "management route".

5.4.2 Training of owners

The majority (88%) of all the respondents had served a formal electrical apprenticeship, which is a type of technical training. In contrast, a substantial 72% of the interviewees indicated that they had not received any management training at all before starting their own businesses. Not surprisingly, then, most of the respondents admitted that management-related issues represented the most serious problems and constraints that they had to deal with. Figure 5.1 clearly illustrates this finding.

5.4.3 Future growth and expansion

Two types of growth were identified in Chapter 2: lateral expansion (i.e. doing more contracts simultaneously) and upward movement (i.e. doing larger contracts). The

majority of the firm owners (68%) said that they intended to remain the same size; only 18% were intending to expand their businesses laterally and upward, while 14% were even planning to reduce the size of their business or to diversify into other areas of the electrical contracting industry or even into other industries. The main reasons they cited for not wishing to expand their businesses were the excessively high cost of labour and limitations of management and production, specifically with regard to successfully managing potential work increases by their firms.

5.4.4 Obtaining work

It was noted that advertising and tendering are the main sources of obtaining new work. All the interviewees reported that they did indeed calculate the quantities and costs of everything when tendering for new contracts and that they did not do "take it or leave it" contracts. Because of this, however, they did not obtain sufficient contracts. It was also found that some firms confined their activities in order to provide a steady supply of work on a regular basis.

5.4.5 General, specialist and labour sub-contracting

The impression gained from the interviews was that labour-only sub-contractors had emerged to carry out work for municipalities and city councils based on their yearly (annual) tenders to provide labour, and that the material in these cases was supplied by the supply authority. In contrast, general and specialist sub-contractors provided both labour and materials, but focused on different types of electrical work from that of labour-only sub-contractors.

5.4.6 Deficiency of labour force skills

The data revealed that the labour force used in the electrical contracting field often seems to lack suitable or sufficient skills. A great demand thus exists for future training in the fields of trade skills, time management and responsibility, which would enhance the overall performance of companies and the electrical contracting industry as a whole.

5.4.7 Serious problems experienced by SMECEs

As is evident from Section 5.1 above, the respondents reported a variety of serious problems and constraints that were having a negative impact on the success of their businesses, and also identified how many of these could be addressed. It must be emphasized at the outset, however, that the inter-relatedness of problems should be carefully established before deciding on any particular course of action.

In conclusion, then, in this chapter we have discussed the problems and constraints identified by the various respondents. We have also examined the most important factors that would enhance the success and long-term sustainability of small- to medium-scale electrical contracting enterprises, and summarised the insights generated by these discussions. The next chapter will now present a range of practical and useful recommendations to owners of such businesses.

CHAPTER 6: RECOMMENDATIONS

This chapter contains recommendations regarding the support and promotion of Small- and Medium-Scale Electrical Contracting Enterprises (SMECEs) in the Cape Peninsula. The recommendations presented below flow from the literature review (contained in Chapter 2), the analyses of the survey data (presented in Chapter 4) and the conclusions and findings (set out in Chapter 5), with the aim of providing some assistance and guidance to SMECEs to ensure their success and future sustainability. Moreover, these recommendations have been sorted into four of the five categories identified in the previous chapter, namely management, labour, markets and finance, with a general category having been added. Legislation and government are not discussed, as the firm owners did not feel that these were a major influence.

6.1 MANAGEMENT

The following recommendations pertain to the management of electrical contracting businesses and are ways of enhancing the success and sustainability of the business. The owner of a SMECE will need to follow the following course of action:

- **To identify existing training institutions and suitable courses:** these will assist the current work force in overcoming their lack of technical skills and thereby improve their ability to satisfy the demands or requirements of the electrical contracting industry;

- **To identify and implement suitable bridging courses:** in addition, on-site training in trade skills should be provided to improve the capabilities of the work force as quickly as possible;

- **To identify a suitable planning, tendering and cost calculation course:** it will be valuable to ascertain which employees would need to be trained in order to improve the management of the business;

- **To follow the basics when tendering:** for instance, it is important not to under-estimate labour costs and to watch out for hidden costs, particularly if there are delays, if overtime may need to be paid or if additional workers may need to be hired;

- **To identify suitable suppliers of equipment and materials:** it is also important to obtain quotations (with clear indications of when these quotes will expire, to avoid unexpected cost increases) before ordering such material, in order to ensure that the costs are the lowest available in the market at the time;

- **To identify creative ways of increasing manpower for larger contracts:** one way of doing this may be to hire new employees, although this may be problematic if work-flow is irregular; another option would be to join forces with another company for a particular job and to outsource specific tasks to them; in such a case, however, it is essential that a written contract is in place, which clearly sets out the respective duties, responsibilities and costs;

- **To follow the basics when managing contracts:** for instance, it is vitally important to know all the conditions of the contract, to control delivery of the materials (not too early, because it causes cash-flow problems and may encourage wastage; not too late, because it will cause unnecessary delays), to allocate the most suitable people to each task and to monitor staff working on the site (e.g. by using spot-checks, supervision, clocking in and out), and lastly, to ensure that the relevant paperwork has been done (keeping track of costs and expenditure, scheduling collection and delivery of material, submitting progress reports, writing down all instructions, monitoring delays);

- **To obtain a written contract from the client for each new contract:** this must set out all the terms of the agreement, as well as the contract amount payable by the client and the terms of such payment; this will hopefully reduce late or non-payment and cash flow problems.

6.2 LABOUR

These recommendations can be used to overcome problems related to the workforce employed by the SMECE, whether these are labourers, skilled artisans, administrative staff, managers or owners:

- **To identify suitable supervisors for each electrical contract:** these should be empowered to manage members of staff and to oversee the overall process of completing the contract;

- **To agree on and fix all wages with employees prior to the starting date of a contract, and to couple these to performance:** this will encourage workers to recognize the value and importance of good quality workmanship and a good work ethic; to promote incentives or prizes for workers who are particularly diligent and honest;

- **To support and encourage education and training of the work force:** this applies to all workers, whether they are apprentices, unskilled labourers, skilled artisans, administrative staff or management; if necessary, attendance at such training should be compulsory for employees;

- **To employ only those workers who are properly skilled and qualified;**

- **To train employees to understand technical specifications and drawings:** these actually form the backbone of every contract;

- **To explain their duties, responsibilities and roles to all the workers:** it is also important to explain the scope of the electrical contract to all the workers who will be responsible for completing that particular electrical contract, thereby making certain that they understand fully what is required from them and what their role in the team is.

6.3 MARKETS

With regard to market-related issues, the following recommendations are made to owners of SMECEs:

- **To identify and concentrate on the more desirable niche markets:** SMECEs need to move away from undesirable types of work, which include "take it or leave it" contracts; owners need to concentrate instead on their most suitable niche markets, depending on the types and levels of skills of the workers employed by the company, in order to also ensure a more steady inflow of work;

- **To promote tendering to ensure that access to new markets is obtained:** tendering on various electrical market segments such as cable reticulation, street-lighting installations, building services, housing reticulation, factory installations, office park developments, maintenance and repair contracts and control panel installations, will increase the possibility to access work from new markets.

6.4 FINANCE

The recommendations below pertain to the financial affairs of SMECEs and suggest that owners of such businesses take the following steps to improve the financial sustainability of their company:

- **To identify the financial requirements of the firm:** this includes budgeting for day-to-day operation expenses, labour costs, material costs, travelling, investment in staff training and or also for future expansion of the firm and new equipment;

- **To ensure that the banking institution's requirements are met:** this includes keeping good financial records, making regular payments of loan

instalments, making timely payments to suppliers and generally trying to improve the firm's credit rating;

- **To utilize consistent and accurate rates when compiling tenders or preparing quotes for work that is to be done for main contractors:** all the relevant aspects must be taken into account – labour costs, material costs, transport costs, fluctuations in productivity, need to pay overtime, availability of labourers and skilled artisans, company overheads, inflation, degree of difficulty of project, etc.;

- **To obtain confirmed quotes for material costs from suppliers:** these should be obtained prior to drafting tenders, so as not to make a loss when material costs are increased;

- **To set out clearly the terms of payment in contracts with all clients:** thereafter business owners must ensure that payment is indeed received on time; meetings must be arranged immediately with clients regarding non-payment in order to determine the reason and how this can be solved.

6.5 GENERAL

Some general recommendations that can be made to owners of SMECEs, in order to enhance the sustainability and success of their business, are the following:

- **To define as clearly as possible the specific goals of the business:** these goals should be categorized as short-, medium- and long-term, taking into consideration the particular dreams and aspirations of the owner or manager of the business;

- **To identify the necessary theoretical knowledge in management techniques with which the owner is required to be familiar;**

- **To identify the practical experience required in both trade skills and management skills;**

- **To identify suitable niche markets which are sufficient to sustain the firm;**

- **To demand comprehensive information from the main contractor:** this should be done at the time of entering into a contract, specifically with regard to technical specifications and drawings;

- **To demand that additional work and variations are specified in writing:** in addition, appropriate prices must be negotiated for such additional work or variations;

- **To utilize proper planning procedures during the lifespan of contracts:** this includes compiling material procurement schedules, checking productivity during contracts, anticipating possible delays, preventing labour shortages and properly planning transport requirements.

In conclusion, then, this final chapter has presented a wide range of practical recommendations to owners of Small- and Medium-Scale Electrical Contracting Enterprises (SMECEs) in the Cape Peninsula with regard to promoting the success and long-term sustainability of their businesses. An electrical contracting business is not an exact science, and even if an owner does apply all the necessary technical and management rules, practical experience gained from the day-to-day running of his or her firm is indispensable. It is on the basis of this experience, in conjunction with technical and management rules and guidelines, that owners of SMECEs will be able to make informed decisions to ensure the future sustainability of their businesses. It is hoped that the guidelines and recommendations presented in this chapter may be useful to owners of such businesses.

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APPENDIX A

STATISTICAL CLASSIFICATION OF SMALL BUSINESS

Appendix A: Statistical classification of small business

Sector or sub-sectors in accordance with the Standard Industrial classification	Size or class	Total full-time equivalent of employees Fewer than	Total annual turnover (R million) Less than	Total gross asset value (fixed property excluded) (R million) Less than
Agriculture	Medium	100	4,00	4,00
	Small	50	2,00	2,00
	Very Small	10	0,40	0,40
	Micro	5	0,15	0,10
Mining & quarrying	Medium	200	30,00	18,00
	Small	50	7,50	4,50
	Very Small	10	3,00	0,80
	Micro	5	0,15	0,10
Manufacturing	Medium	200	40,00	15,00
	Small	50	10,00	3,75
	Very Small	10	4,00	1,50
	Micro	5	0,15	0,15
Electricity, Gas & Water	**Medium**	**200**	**40,00**	**15,00**
	Small	**50**	**10,00**	**3,75**
	Very Small	**10**	**4,00**	**1,50**
	Micro	**5**	**0,15**	**0,10**
Construction	Medium	200	20,00	4,00
	Small	50	5,00	1,00
	Very Small	10	2,00	0,40
	Micro	5	0,15	0,10
Retail and Motor Trade and repair Services	Medium	100	30,00	5,00
	Small	50	15,00	2,50
	Very Small	10	3,00	0,50
	Micro	5	0,15	0,10
Wholesale trade, Commercial Agents and Allied Services	Medium	100	50,00	8,00
	Small	50	25,00	4,00
	Very Small	10	5,00	0,50
	Micro	5	0,15	0,10
Catering, Accommodation and other Trade	Medium	100	10,00	2,00
	Small	50	5,00	1,00
	Very Small	10	1,00	0,20
	Micro	5	0,15	0,10
Transport, Storage and Communication	Medium	100	20,00	5,00
	Small	50	10,00	2,50
	Very Small	10	2,00	0,50
	Micro	5	0,15	0,10
Finance and Business Services	Medium	100	20,00	4,00
	Small	50	10,00	2,00
	Very Small	10	2,00	0,40
	Micro	5	0,15	0,10
Community, Social and Personal Services	Medium	100	10,00	5,00
	Small	50	5,00	2,50
	Very Small	10	1,00	0,50
	Micro	5	0,15	0,10

APPENDIX B

THE MAIN SURVEY QUESTIONNAIRE

THE MAIN SURVEY QUESTIONNAIRE

QUESTIONNAIRE

SECTION A – SURVEY INFORMATION

A.1 Survey number _____

A.2 Name of Business _____

A.3 Address _____

A.4 Date of Interview _____ (yy/mm/dd)

A.5 Type of firm

A.5.1 General contractor (takes on entire electrical contract – employer holds him responsible for entire end product)

☐ 1. mainly new work
☐ 2. mainly alterations & additions

A.5.2 Specialist sub-contractor (provides labour & material)

☐ 1. electrical

A.5.3 Labour only sub-contractor

☐ 1. bill of quantities
☐ 2. lump sum contract

NAME OF OWNER: _____

SIGNATURE: _____

DATE: _____

TIME: _____

SECTION B – GENERAL

B.1 When did you start this firm?

Y	Y	Y	Y	M	M	D	D

B.2 Please provide the names of the electrical associations your firm belongs to

1. _____
2. _____
3. _____
4. _____

B.3 Is this the first business you have started?

1. Yes
2. No

B.4 Are you the sole owner of your business?

1. Yes
2. No

B.5 If no, how many partners / members do you have? _____

B.6 Is this business a:

☐ 1. Sole Ownership

☐ 2. Partnership

☐ 3. Close Corporation (cc)

☐ 4. Private Company ((Pty) Ltd)

☐ 5. Other, please specify _____

SECTION C – PERSONAL BACKGROUND OF OWNER

C.1 Age _____

C.2 What is/was your father's occupation?

1. Electrical contracting employee / tradesman
2. Businessman
3. Other _____

C.3 What is the highest standard you passed at school?

1. Standard 7
2. Standard 8
3. Standard 9
4. Standard 10

C.4 Have you obtained a qualification from a College, Technikon or University?

1. Yes
2. No

C.5 If yes, what type of qualification have you obtained from a College, Technikon or University?

☐ Certificate

☐ Diploma

☐ Degree

C.6 What is your main source of income?

1. Office block / building electrical services
2. Township reticulation, cables and transformers
3. Maintenance work on buildings and factories
4. Internal wiring domestic houses and flats
5. Which combination of 1 – 4 _____
6. Other _____

C.7 Language Skills: Which languages do you speak, read and write? Please indicate your skills level for each language.

Language		Read			Write			Speak	
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good

SECTION D - TRAINING

D.1 Were you an employee in the electrical contracting industry prior to starting this firm?

1. Yes
2. No

D.1.1 If yes, for how long?

In what capacity?

D.1.1.1	Unskilled	(Years)_____	(months)_____
D.1.1.2	Semi-skilled	(Years)_____	(months)_____
D.1.1.3	Apprentice	(Years)_____	(months)_____
D.1.1.4	Skilled	(Years)_____	(months)_____
D.1.1.5	Foreman	(Years)_____	(months)_____
D.1.1.6	Clerical	(Years)_____	(months)_____
D.1.1.7	Management	(Years)_____	(months)_____
D.1.1.8	Other (specify)	(Years)_____	(months)_____

D.2 Have you served a formal apprenticeship?

1. Yes
2. No

If yes, in what trade or trades?

1.	Plumbing	1. Yes	2. No
2.	Electrical	1. Yes	2. No
3.	Carpentry	1. Yes	2. No
4.	Painting	1. Yes	2. No
5.	Other (specify)	_____	
		_____	

D.3 Did you receive any formal education / training in how to manage an electrical contracting firm prior to starting this business?

1. Yes
2. No

D.4 Do you feel that you require further training?

1. Yes
2. No

D.4.1 If yes, in which of the following fields?

Select the areas that are appropriate:

1.	Skills training	1. Yes
2.	Production management, programming, material orders	1. Yes
3.	Business management (financial management, job coordination, administration, tendering)	1. Yes
4.	Other (specify)	

_____

D.4.2 What have you done about getting this training?

1. Nothing
2. Something

D.4.3 If you have done something, then explain the outcome

_____

_____

D.4.4 Who would you go to for this training?
(Give the name of the institution/s of your choice, leave blank if "don't know")

1. _____

2. _____

SECTION E – ENTRY INTO INDUSTRY

E.1 What motivated you to start your current enterprise?

1. Family business / inherited
2. Unemployed / difficult to find job as tradesman
3. Independence
4. Thought you could earn more than in another job
5. Ambition
6. Any combination of 1 – 4: _____
7. Other (specify) _____

E.2 Did your previous employer help you to start your current firm?

1. Yes
2. No

N.B. IF 'NO' THEN MOVE TO QUESTION E.4

E.2.1 If 'yes', what was your previous employer's business?

1. Electrical Contracting Industry
2. Electrical Consulting Industry
3. Other industry _____

E.2.2 How did your previous employer help you to start?

1.	Loan	1. Yes
2.	Passed on excess work	1. Yes
3.	Provided contacts which resulted in work	1. Yes
4.	Other (specify) _____	

E.3 Do you still receive help from your previous employer?

1. Yes
2. No

E.4 If your previous employer did not get you your first contract of assistance, how did you acquire it?

Explain

_____

_____

E.5 List the three most serious problems you experience in starting your own business

1. _____

2. _____

3. _____

SECTION F – RECENT & CURRENT ACTIVITIES OF ENTERPRISE

N.B. QUESTION F 1 MUST ONLY BE PUT TO GENERAL CONTRACTORS

F.1 If you are a **general contractor**, how often were you employed by the following types of employer since the beginning of 2000?

1.	Individuals	1. Never	2. Sometimes	3. Always
2.	Organizations (Main contractors, builders)	1. Never	2. Sometimes	3. Always
3.	Other (specify)	1. Never	2. Sometimes	3. Always

_____

F.2 If you are a **sub-contractor**, how often were you employed by the following type of employer since the beginning of 2000

1.	Developers	1. Never	2. Sometimes	3. Always
2.	Large contractors (builders)	1. Never	2. Sometimes	3. Always
3.	Large electrical contractors	1. Never	2. Sometimes	3. Always
4.	Individuals (building owners)	1. Never	2. Sometimes	3. Always
5.	Other (specify)			

_____

F.3 How often do you obtain work through the following methods?

1.	Competitive tender	1. Never	2. Sometimes	3. Always
2.	Negotiation	1. Never	2. Sometimes	3. Always
3.	"Take-it-or-leave-it" offer by employer	1. Never	2. Sometimes	3. Always
4.	Other (specify)			

_____

F.4 Number of contracts / jobs done by your firm in the calendar year 2002?

_____ (raw number)

GIVE THE FOLLOWING DETAILS OF YOUR LAST (MOST RECENT) CONTRACT (2002)

F.5 Type of employer?

1. Owner
2. Developer
3. Large Scale Electrical Contractor
4. Building Contractors

F.5.1 Type of work?

1. Building reticulation
2. Township reticulation
3. Maintenance
4. Domestic Units

F.5.2 What did your business actually do?

1.	Electrical wiring	Yes
2.	Installation of light fittings	Yes
3.	Cable installation	Yes
4.	Distribution boards	Yes
5.	Cable and transformer installations	Yes
6.	Maintenance	Yes
7.	Other (specify)	

_____

F.5.3 What was?

1. Agreed contract value R_____

2. Actually received R_____

F.5.4 What was the contract period? _____ (months)

F.5.5 What was your profit? %_____

GIVE THE FOLLOWING DETAILS OF YOUR FIRST CONTRACT

F.6 Type of employer?

5. Owner
6. Developer
7. Large Scale Electrical Contractor
8. Building Contractors

F.6.1 Type of work?

5. Buildings reticulation
6. Township reticulation
7. Maintenance
8. Domestic Units

F.6.2 What did your company actually do?

1.	Electrical wiring	Yes
2.	Installation of light fittings	Yes
3.	Cable installation	Yes
4.	Distribution boards	Yes
5.	Cable and transformer installations	Yes
6.	Maintenance	Yes
7.	Other (specify)	

_____

F.6.3 What was?

1. Agreed contract value R_____

2. Actually received R_____

F.6.4 What was the contract period? _____ (months)

F.6.5 What was your profit? %_____

F.7 In which areas do you most often find work?

F.7.1	Own community	1. Never	2. Sometimes	3. Always
F.7.2	Townships	1. Never	2. Sometimes	3. Always
F.7.3	City	1. Never	2. Sometimes	3. Always
F.7.4	Other (specify)			

_____

F.8 Exactly what is your firm doing now?

F.8.1 LABOUR

1. Laid off
2. Being paid, but not working
3. Doing piecemeal work
4. Working on site

F.8.2 PLANT

1. Returned to hirer
2. Standing idle
3. Hired out
4. Used for piecemeal work
5. On site

F.8.3 OWNER

1. Not active
2. Negotiating new contracts
3. Following-up debtors
4. Doing alternative work
5. Managing current job

F.9 How do you measure results regarding the success of your business?

Explain

_____

_____

SECTION G – FUTURE OBJECTIVES

G.1 What are your plans for your firm in the future?

1. Remain the same size
2. Get smaller (reduce no. jobs per years)
3. Get bigger (expand)
4. Sell the firm and leave industry
5. Sell the firm and seek better wage / salary elsewhere in electrical contracting industry
6. Start a new business in electrical contracting
7. Diversify

G.2 If you plan to expand, what type of client / employer do you intend to get most of your work from?

1. Private individuals
2. Large Electrical Contracts
3. Main Contract Builders
4. Provincial or government agencies
5. Others (specify)

_____

G.3 What steps have you taken / are you taking to achieve your objectives?

1.	Tried to diversify	1. Yes
2.	Advertised	1. Yes
3.	Invested in additional capital	1. Yes
4.	Approached possible clients	1. Yes
5.	Invested / saving	1. Yes

G.4 List two of you most serious objectives apart from what were indicated above

1. _____

2. _____

SECTION H – MANAGEMENT / ORGANISATION OF PRODUCTION

H.1 How do you obtain plant / equipment? (examples: ladders, scaffolding, grinders, drilling machines, crimping tools)

1.	Own	1. Yes
2.	Hire	1. Yes
3.	Lease	1. Yes
4.	Other (specify)	

H.2 Which of the following provide you with technical support?

1.	Joint venture partner	1. Yes
2.	Plant/equipment suppliers	1. Yes
3.	Government/SBDC	1. Yes
4.	Industry association	1. Yes
5.	Electrical contractor who employed you	1. Yes
6.	Materials suppliers	1. Yes
7.	Material producers/manufacturers	1. Yes
8.	Electrical consultants	1. Yes

H.3 What type of bank account do you operate?

1. Separate bank accounts for personal and business transactions
2. One bank account for personal and business transactions
3. No bank account

H.4 Do you keep accurate financial records for your business?

1. Yes
2. No

H.5 How do you normally arrive at your tender/quote amount?

1. Calculate rate per square metre
2. Calculate quantities and costs of everything
3. Find out competitors costs and charge less

H.6 Have you ever had to leave a site before completing your work?

1. Yes
2. No

If 'yes', why?

1.	Not paid	1. Yes
2.	Ran out of finance	1. Yes
3.	Forced out because of threats	1. Yes
4.	General violence in area	1. Yes
5.	Labour problems	1. Yes
6.	Other (specify)	

H.7 Do you calculate working capital requirements?

1. Yes
2. No

H.7.1 If 'yes', how often?

1. One week in advance
2. One month in advance
3. Three months in advance
4. One year in advance

H.8 How many contracts/jobs can you do simultaneously before you experience coordination problems?

_____ (raw number)

SECTION I – CAPITAL AND FINANCING

I.1 Which of the following have been major sources of finance?

		A Current	B At start-up
1.	Own savings	_____	_____
2.	Family and friends	_____	_____
3.	Partners	_____	_____
4.	Informal market (money lenders)	_____	_____
5.	Formal commercial bank	_____	_____
6.	Government agency (e.g. SBDC)	_____	_____
7.	Welfare, churches and other donors	_____	_____
8.	Credit from main contractor	_____	_____
9.	Credit from material/plant suppliers	_____	_____
10.	Advance payment from employer	_____	_____
11.	Development/builders corporation	_____	_____

I.2 Have you experienced problems meeting security/collateral requirements when applying for loans?

1. Yes
2. No
3. Not applicable (do not apply for loans)

I.2.1 If 'yes', what were the problems?

1.	Do not own property	1. Yes
2.	Do not have capital	1. Yes
3.	Do not have contracts to cede	1. Yes
4.	Institutions are inaccessible	1. Yes
5.	Have not been in business long enough	1. Yes
6.	Other (specify) _____	

I.3 Do you experience problems with loan repayment, fluctuating interest rates, etc?

1. Yes
2. No

I.4 Have you ever had a legal judgement against you?

1. Yes
2. No

I.4.1 If 'yes', how has this affected your current business?

Explain

_____

_____

I.5 Give the following details of your money and investments at start-up and currently

		A **Current**	**B** **Start-up**
1.	Cash in hand	R_____	R_____
2.	Hand tools	R_____	R_____
3.	Transport	R_____	R_____
4.	Electrically operated tools	R_____	R_____
5.	Other	R_____	R_____

SECTION J – LABOUR

J.1 Number of employees at start-up?

Type of Employee	Full Time	Part Time	Casual	Family
Labourers				
Elconops				
Apprentices				
Qualified Electricians				
Foreman				
Clerk / Others				

J.2 Number of employees at end of 2002?

Type of Employee	Full Time	Part Time	Casual	Family
Labourers				
Elconops				
Apprentices				
Qualified Electricians				
Foreman				
Clerk / Others				

J.3 Do you use casual labour?

1. Always
2. Sometimes
3. Never

J.4 On average, how many casuals do you employ at any time?

Nr: _____

J.5 Do you subcontract work out to smaller firms or electricians?

1. Always
2. Sometimes
3. Never

J.6 If you use other subcontractors, what has your experience been?

1. Never use them again
2. Will use them again
3. Do the work myself in the future

J.7 How do you pay your employees?

Type of Employee	Per Hour	Per Day	Per Week	Per Month
Labourers				
Elconops				
Apprentices				
Qualified Electricians				
Foreman				
Clerk / Others				

J.8 Is your firm registered with the Industrial Council?

1. Yes
2. No

J.9 If No, why not?

Explain: _____

_____

_____

J.10 How effectively do the Industrial Council Inspectors check on you?

1. Not at all
2. Regularly
3. Sometimes

SECTION K – PROBLEMS/CONTRAINTS

K.1 Rank each of the following problems on a scale of 1 (lowest) to 5 (highest)

		Circle the response				
	LABOUR					
1.	Cost of labour	1	2	3	4	5
2.	Reliability of labour	1	2	3	4	5
3.	Shortage of skilled labour	1	2	3	4	5
4.	Relationship with main contractor	1	2	3	4	5
5.	Relationship with sub-contractor	1	2	3	4	5
6.	Worker action	1	2	3	4	5
	FINANCE					
7.	Access to loans/security	1	2	3	4	5
8.	Repayment of loans	1	2	3	4	5
9.	Interest rate issues	1	2	3	4	5
	PRODUCTION/MANAGEMENT					
10.	Lack technical skills	1	2	3	4	5
11.	Supply/cost of materials	1	2	3	4	5
12.	Cost of/access to equipment	1	2	3	4	5
13.	Tender/negotiation procedures	1	2	3	4	5
14.	Working out total costs	1	2	3	4	5
15.	Accounting/reconciliation	1	2	3	4	5
16.	Cash flow/slow payment	1	2	3	4	5
	LEGISLATION/GOVERNMENT					
17.	Access to government tenders	1	2	3	4	5
18.	Tax legislation	1	2	3	4	5
19.	Industrial councils/labour legislation	1	2	3	4	5
20.	Other legislation	1	2	3	4	5
	MARKETS					
21.	Preference for white contractors	1	2	3	4	5
22.	Erratic inflow of work	1	2	3	4	5
23.	Competition	1	2	3	4	5

Choose the three most important constraints from those that you rated '4' or '5' in the previous question and give details of the nature of the problem and what you feel could be done to eliminate it

K.2 Problem A (state code from question K.1) No_____

1. Nature of your problem one?

   Explain

   _____

2. What would improve the situation relating to problem one?

   Explain

   _____

K.3 Problem B (state code from question L.1) No_____

1. Nature of your problem two?

   Explain

   _____

2. What would improve the situation relating to problem two?

   Explain

   _____

K.4 Problem C (state code from question L.1) No_____

1. Nature of your problem three?

   Explain

   _____

2. What would improve the situation relating to problem three?

   Explain

   _____

SECTION L – SUSTAINABILITY

L.1 Is long-term sustainability important?

Yes
No
If No, explain: _____

L.2 Have you identified goals of sustainability?

Yes
No

L.3 With respect to future sustainability of your company, rank each of the following on a scale from 1(lowest) to 5(highest) in terms of importance:

Survey Questionnaire: Owner / Shareholder:

1.	Personal background	1	2	3	4	5
2.	Overall training / education	1	2	3	4	5
3.	Current position in the industry	1	2	3	4	5
4.	Management structure	1	2	3	4	5
5.	Organisation's Production / Productivity	1	2	3	4	5
6.	Capital and Finance	1	2	3	4	5

General Questions:

7.	Growth opportunities	1	2	3	4	5
8.	Sustain work availability	1	2	3	4	5
9.	Company values	1	2	3	4	5
10.	Alliances with other companies	1	2	3	4	5
11.	Business decisions and future planning	1	2	3	4	5
12.	Long-term strategies: Training / Education	1	2	3	4	5

L.4 Explain which factor(s) to your knowledge may influence the sustainability of SMECE's:

_____

_____

_____