EMPLOYEE PERCEPTION OF THE BENEFITS OF ISO 9001:2000 CERTIFICATION: THE CASE OF KENGEN

By

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Declaration

I, the undersigned, declare that this is my original work that has not been submitted to any other college, institution or university other than the University of Nairobi for academic credit.

Signed:.....**Date**:.....8/11/2007.....

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This project has been presented for examination with our approval as the appointed supervisors.

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Dedication

I dedicate this report to my husband Gache and daughters Hillary Shefo Gache and Grace Achieng Gache. Thanks for all the time I stole from you all to do my studies.

"You can have it All, but you can't have it All at once',
OPRAH WINFREY.

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List of Abbreviations

IPO	Initial Public Offer
ISO	International Organization of Standardization
KEBS	Kenya Bureau of Standards
KenGen	Kenya electricity Generating Company Limited
Ksh	Kenya Shillings
MW	Megawatt
SPSS	Statistical Package for the Social Sciences
TC	Technical Committee
TQM	Total Quality Management
UK	United Kingdom
US	United States of America

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Abstract

Arguments have been raised as to whether implementing ISO 9001:2000 Certification actually benefits organizations or not. This study examined employees' perception of benefits or otherwise of ISO 9001:2000 certification in KenGen and the challenges associated with undertaking the Certification process.

Using a sample size of 156 employees from the KenGen employee database, employee perception was tested against seniority, level of education, length of service to the company, and geographical area of workplace. Data was collected using questionnaires and was analysed using statistical inferences with frequencies, means, standard deviations and tabulations.

The findings from the study indicated that perceptual gaps between the expectations and the perceived benefits by employees was significant on most of all the indicators that were used in the study, indicating that employees had very high expectations with regard to the benefits of Certification that were not met. Challenges included time taken, costs; lack of a performance reward system for certification achievement; and lack of top management commitment.

Employees observed the following as important to the certification process; proper preparation; organizational transformation; efficient internal communications and top management commitment. They appreciated that the certification process had resulted in internal benefits, which could not be otherwise achieved without the surmounting challenges faced.

CHAPTER ONE: INTRODUCTION

1.1 Background

Organizations operating in the 21st Century face many significant challenges including, profitability, adaptability, competitiveness, growth, globalisation, technology, and speed of change. The challenging environment requires that for their survival, organizations must become more flexible, dynamic and be able to make informed choices while on the move (Brown, 2002). Organizations must have a business strategy, which pays heed to quality management. Cole (1997) argues that, no business strategy will succeed fully in today's competitive conditions unless it gives adequate priority to quality issues.

The concepts of quality in organizations have antecedents reaching back almost a century, to Taylorism, with its industrial, assembly-line view of workers as components in tightly specified systems (Fuggetta, 1995). In the 1920s and 1930s Shewhart of Bell Laboratories identified the importance of process and product variation in such systems, and the need to control variation to improve quality and productivity (Deming, 1986). Shewhart used probability theory and statistical methods to develop statistical process control, successfully applied in United States manufacturing industries in the 30s and 40s, and particularly during the war years when reliability issues were paramount (Cory, 2000).

In the boom that followed World War II, quality management was largely abandoned in a consumer-driven rush for ever greater production volumes and it was not until Edwards Deming's holistic, systemic approaches to quality began to be repatriated from Japan in the 1960s, that quality management regained momentum in the United States of America (Deming, 1986). The inspiration of modern approaches to quality management comes from the achievements of Japanese companies, epitomised by Total Quality Management (TQM) (Miyumo, 2003). The TQM concept has been made practical and has been widely diffused by ISO 9000 Quality Management Systems. Introduced in 1987 and revised in 1994, the ISO 9000 family of standards represent an international consensus on good management practises with the aim of ensuring that an organisation can time and again deliver the product or services that meet the client's quality requirements.

ISO 9000 was developed from the British Standards Institution's BS 5750. These good practices have been distilled into a set of standard requirements for a quality management system, regardless of what the organisation does, its size whether it's private or public.

A survey carried out by the International Organisation of Standardisation found out that so far up to the end of December 2001, at least 510,616 ISO 9000 certificates had been awarded in 161 countries, an increase of 101 985 certificates (+ 24.96 %) over the end of December 2000, when the total stood at 408 631 in 157 countries. This success is still growing rapidly, even though the rate of adoption has recently slowed somewhat in countries where penetration is already high (ISO, 2000).

For many companies, ISO 9000 is seen as a key to doing business in global markets and improving competitiveness. ISO provides users of the standards with an opportunity to add value and enhance their performance through continuous improvement of their process. While it does not itself certify organizations nor specify precisely what kinds of quality processes must occur, or how, it does require that appropriate quality activities be defined, that processes be documented and that proof be supplied that the company consistently adheres to both. Giguere and Smith (1999), suggest that the motto for ISO 9000 could be 'Say what you do, do what you say and prove it'.

Many countries have formed accreditation bodies to authorize certification bodies, which audit organizations applying for ISO 9001 compliance certification, (Giguere and Smith 1999). The various accreditation bodies have mutual agreements with each other to ensure that certificates issued by one of the Accredited Certification Bodies (CB) are accepted world-wide. In Kenya the accredited bodies to undertake certification are SGS Kenya Ltd, Lloyds Register, Bureau Veritas and Kenya Bureau of Standards (KEBS) (Kioko, 2002). Both the accreditation bodies and the certification bodies charge fees for their services.

The applying organization is assessed based on an extensive sample of its sites, functions, products, services, and processes and a list of problems, "action requests" or "non-compliances" made known to the management. If there are no major problems on this list, the certification body will issue an ISO 9001 certificate, once it receives a satisfactory improvement plan from the management showing how any problems will be resolved.

Although commonly referred to as ISO 9000:2000 certification, the actual standard to which an organization's quality management can be certified is ISO 9001:2000 since the revision in the year 2000 by the ISO Technical Committee (TC) 176 (ISO, 2000).

An ISO certificate is not a once-and-for-all award, but must be renewed at regular intervals recommended by the certification body, usually around three years. Questions have been asked as to why individual firms seek certification, whether obtaining and maintaining the certification is worth the time, cost and effort it takes and how employees in the organization perceive the whole process. Other questions include whether employees change the way they work as a result of the certification whether it produce the results business expects it to and its value to Kenyan businesses. Whereas such studies have been conducted in Kenya in the private sector, they have not been undertaken in the public sector, which is considered rather bureaucratic and inefficient. In this report an attempt was made to understand the value of certification through an in-depth examination of employees of KenGen who, pursued and gained certification to ISO 9001:2000.

1.2 Employee Perception

The subject of human factor in organisations can be traced to the early works of Professor Elton Mayo at Western Electric's Hawthorne plant in Chicago in 1927-1932 (Burnes, 2000). Further, V. H. Vroom advanced a view that, an individual's behaviour is formed on the perception of what they consider to be reality (Cole, 1996). This theory argues the case that individual's effort and productivity is determined by their perception of the situation (Cole, 1997). Kibera and Waruinge (1998) define perception as being a result of two factors i.e. stimulus factors, which characterises the physical object, and individual factors, which are characteristic of the individual. Daft (2000) defines perception as the process people use to make sense out of the environment by selecting, organising and interpreting information from the environment. He contends that employee perception of any aspects of their employment will be a function of the intensity or repetitiveness of that aspect.

Other studies have been carried out to determine the perception of employees regarding specific issue e.g. reward (Wallace, 1999; Guest, 1997). They contend that commitment of employees to a certain cause or issue depends on their perception. Miguel (2003) and

Nyawade (2005) concluded that perception studies can be used to measure gaps between current and expected performance and to identify system level measures of desired metrics that link performance and track changes of an organization. Paauwe and Richardson (1997) concluded that positive perception of employees with respect to employee selection, personnel planning, and reward has an effect on human resources results. If employees perceive ISO 9001:2000 to be beneficial to the organization they are more likely to be supportive of its practice.

1.3 Overview of KenGen

By the time of achieving certification, Kenya Electricity Generating Company Limited (KenGen) was a limited liability company registered under the Company's act and wholly owned by the Government of Kenya. The Company was incorporated in 1954 as Kenya Power Company (KPC) and renamed as Kenya Electricity Generating Company Limited in 1997. From mid 1997 power generation has been liberalized and there is mix of public and private players in the sector.

KenGen's vision is to be the market leader in the provision of reliable, safe, quality and competitively priced electric energy in the Eastern Africa region and is the leading electric power generating company in Kenya, producing about 80% of electricity consumed in the country; it also leads in total installed capacity at 82% (KenGen Annual Report, 2004). The Company utilises various sources to generate electricity ranging from Hydro, Geothermal, Thermal and Wind. Hydropower is the leading source with an installed capacity of 677 MW, Geothermal 115 MW, Thermal 213.8 MW and Wind 0.4 MW (KenGen Business Plan, 2005). Currently the total installed capacity is 1006 MW. The main generation modes by KenGen such as Hydropower and Geothermal have very high availability factors, averaging 95 and 98% respectively (KenGen Annual Report, 2005).

The Government of Kenya sold 659,508,437 shares (30%) of its shareholding in KenGen to the public through an initial public offer (IPO) at a price of Kshs 11.90. The offer was open from 20th March 2006 to 12th April 2006 and was the first Initial Public Offer under the privatisation programme of the government and the largest IPO in the history of the Nairobi Stock Exchange, the first IPO under the Capital Markets Regulation 2002, and the

first IPO under the Central Depository System regime (KenGen Business Plan, 2006). The company is also exposed to the following industry risks: diminishing sources of concessionary funding for expansion plans, foreign currency exchange fluctuation, fuel costs fluctuation, competition from bulk suppliers and regional markets (KenGen Prospectus 2006).

KenGen has workforce of 1509 staff located at different power plants in the country. Of its staff 606 constitute management while 903 constitute the unionisable employees (KenGen Annual Report, 2005). The average staff turnover is 2% i.e. a total of about 30 staff leave the company because of either resignation, death, retirement, suspension or termination. About 60% of staff are affiliated to the Kenya Electrical Trades and Allied Workers Union. As KenGen underwent this unique paradigm shift in the eyes of the public it made an interesting study to investigate the view of its greatest assets i.e. the employees.

1.4 Statement of Problem

In Kenya the interest in ISO 9000 is on a crest wave with the high level of respect for the standard demonstrated by the considerable publicity given in the newspapers every time a company achieves the certification (Wagwa, 2005). Kenya is significantly ahead in the region, having a total of 180 registered firms as at December 2006 (Kenya Engineer, 2006). Over the last three or four years a fourth wave, including government departments, state agencies, and publicly-funded organisations who increasingly enter private and contestable markets, have also sought to standardise the quality of their products and processes (Smith, 1993).

KenGen attained the ISO 9001:2000 certification in December 2004 after a year of documentation of procedures, quality policy and objectives and internal and external auditing of all its stations all over Kenya. The whole process cost the company about Kenya Shillings Eight Million for implementation without counting the maintenance costs. As part of the process, internal and external audits were undertaken using internal manuals and policies as a reference point. This enhanced the organisation's capacity to evaluate its work and learn from past experiences. Whereas the audits were satisfactorily undertaken to

evaluate the quality management process, the company has so far not carried out a study to investigate the employee's perception of the process and its implication thereof.

KenGen's aim of going into certification was based on a desire to improve the quality of service or products and to continually improve their processes. Studies have been done to find out why managers seek certification. Managers considering seeking ISO certification should consider whether their primary motivation to gain accreditation is based on a desire to improve the quality or primarily to gain certification. Managers implementing a quality system may need to ensure that members of the organization perceive that this will add value and be related to improvements in the services and products of the business. Brown and Van der Wiele (1995) report on the results of a survey of Western Australian organisations certified to ISO 9000 concluded that organisational members perceived that certification to ISO 9001 had provided many benefits with regard to the quality of the organisation, its processes and the service it offers. However, these benefits resulted mainly from the establishment and maintenance of an effective quality system rather than from seeking certification itself.

Several studies have been carried out to determine the perception of employees regarding management issues e.g. reward (Wallace, 1999). Miguel (2003) and Nyawade (2005) concluded that perception studies can be used to measure gaps between current and expected performance of employees in an organization. Paauwe and Richardson (1997) concluded that positive perception of employees with respect to employee selection, personnel planning, and reward has an effect on human resources results. Nganga (2005) established a correlation between employee expectations and their perception of strategy depending on the level of education, seniority in the organisation and length of service. This study sought to establish the expectations and perceptions of the employees towards the certification process and their performance thereof.

1.5 Objectives of the study

The objective of the study was:

(i) To establish the employee's perception of benefits or otherwise of ISO 9001:2000 certification in KenGen.

(ii) To measure the challenges associated with undertaking the certification process.

1.6 Importance of the Study

The findings from this study will be important to the following:

(i) To KenGen to know whether there is a gap between excepted and perceived profiles of the ISO 9001:2000 Certification

(ii) To companies, particularly public companies considering the implementation of ISO 9000 or any other quality management system to understand the critical elements of the certification.

(iii) To scholars the study is expected to contribute to the existing literature in the field of ISO 9000 Quality Management System and stimulate further research to extend or refine the present study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The ISO 9000 series of standards were revised to ISO 9001: 2000. Studies have been carried out to define and review the impact and challenges associated with certification on companies. In this section, the historical importance and theoretical benefit of Total Quality Management Systems is contextualized, based on findings of previously conducted studies. The conceptual framework is derived and variable attributes are selected to enable the collection and analysis of data.

2.2 Quality Management Systems

Quality management systems are systems that ensure mutual co-operation of everyone in an organisation and associated business processes to produce products and services that meet and, hopefully, exceed the needs and expectations of customers (Dale, 1999). Quality management systems are the outgrowth of work done by W. Edwards Deming, a statistician, after whom the Deming Prize for quality is named, Another important contribution to process improvement is the Japanese strategy for quality enhancement, called Kaizen.

The inspiration of modern approaches to quality management comes from the achievements of Japanese companies, epitomised by Total Quality Management (Miyumo, 2003). The TQM concept has been made practical and has been widely diffused by ISO 9000 Quality Management Systems of which my research is concern. Ascribed to Deming (1986), TQM has been the high fashion of the post-capitalist 80s and 90s (Drucker, 1994), capturing the imagination of managers in private firms and the public service alike (Eicher, 1992).

Other gurus like Juran, Feigenbaum, Crosby and Ishikawa substantially influenced the early development of quality management (Kruger, 2001). Although these gurus developed implementation plans for quality management they did not develop scientific theories (Bryce, 1991; Dean and Bowen, 1994). However, the approach of some of the gurus was

based on management theory. Scientific management theory (Taylor, 1911; Rogers and McIntire, 1983; Shafritz and Ott, 2001) can be found in the early thinking about quality (Wilkinson et al., 1998; Bryce, 1991). Quality is seen as essential for strategic success (Garvin, 1988). Poor quality will lead to losses of profitability and market share. Quality is an aggressive weapon (Garvin, 1988). Companies need to improve their quality to satisfy the ever-increasing demands of customers. There is a trend that customers want more value for less money.

2.3 ISO 9000 Quality Management System Revision

In the year 2000 the ISO 9000 series of standards were revised to ISO 9001: 2000. The revision process, the responsibility of ISO Technical Committee 176 and was conducted on the basis of consensus among quality and industry experts nominated by ISO Member bodies, and representing all interested parties. The revision included the merging of ISO 9001, ISO 9002 and ISO 9003 into one single standard ISO 9001 (ISO, 2000). The main catalyst behind the ISO 9001:2000 revision was the intent to provide users of the ISO 9000 standards an opportunity to add value and enhance their performance through continuous improvement of their processes.

To solicit enhancement feedback, a global survey was conducted of ISO 9000:1994 users, which revealed the need to introduce improvements in four key areas. These areas included: Increased compatibility with the ISO 14000 series of standards (environmental management standard), creating a common structure based upon a process model, creating a method to demonstrate continuous improvement and customer satisfaction and the provision of the standard in a language and terminology that is easy to understand and simple to use.

The changes made to the ISO 9000 brought the standard more in line with the TQM principles (Conti, 1999; Laszlo, 2000; Grigg and McAlinden, 2001). The new system also requires top management to have a greater involvement with the QMS and to put more focus on work environment and employee's participation and continual improvement (Conti, 1999; Laszlo, 2000; Grigg and McAlinden, 2001; Cochran, 2001). It also focuses on the customer, mutually beneficial supplier relationships and embraces a process

approach in which a desired result is achieved more efficiently when related resources and activities are managed as a process. The ISO 9001:2000 changed perceptions, as it requires customer expectations to be identified and understood and processes to be designed to produce outputs that satisfy these expectations.

There was a transition period to ISO 9001:2000 Upon the publication of the ISO 9001:2000 Standard, a transition period of three years commenced. During this period, new or recertification audits were conducted optionally with the ISO 9000:1994 or new ISO 9001:2000 standard. If a company selected to be audited to the ISO 9000:1994 standard, the validity of the certificate would expire with the end of the transition period. For certificates issued prior to the publication of the ISO 9001:2000 standard, it was possible to continue surveillance audits utilizing the ISO 9000:1994 standard for the entire 3-year cycle.

Upon the expiration of the ISO certificate (every three years) a recertification audit would be conducted utilizing the ISO 9001:2000 standard. Information from the Society of Quality Assurance of Kenya which covers Kenya Bureau of Standards, SGS and Bureau Veritas suggests that all firms have revised their certification to ISO 9001:2000.

2.4 ISO 9001:2000: The Kenyan Context

In keeping with the international business environment, liberalization and intensive competition, Kenya through the Kenya Bureau of Standards adopted the ISO 9001: 2000 quality management systems (Rotich, 1996). ISO 9001: 2000 Certification is carried out by the *Quality System Accreditation Committee*, whose objective is to promote quality system certification activities countrywide by ensuring orderliness and accountability and the provision of requisite services. The committee is responsible for maintaining a national register of all certified firms, qualified assessors and registrar bodies.

Four registrars have been listed to undertake certification activities. These include, SGS Kenya Ltd, Lloyds Register, Bureau Veritas and Kenya Bureau of Standards (Kioko, 2002). At the end of December 2006, about 180 firms were recorded as having complied with the ISO 9001:2000 certifications requirements (Kenya Engineer, 2007). Many of

these companies developed strong interest in ISO for various reasons including; a desire to improve quality of services to the customer and performance of the company (Daily Nation, 2001). In Kenya, the interest in ISO 9001:2000 is demonstrated by the considerable publicity given in the newspapers each time a company achieves the certification. Some studies have been carried out in the past on ISO 9001: 2000 and other operations improvements techniques in Kenya but none has sought the perceptions of the employees involved in the process. The past studies include, but are not limited to works by the following:

Wagwa (2005) established that ISO 9000 certified firms in Kenya believed that certification had resulted in internal benefits, improved customer satisfaction and competitive advantage in international market. He cited the main hindrances faced by majority of organizations during implementation of the standard as poor attitude of staff towards change (79.7%), followed by time taken for staff training as well as time during implementation (66.6%). Many organizations were found to be aware of most operations improvement techniques even before obtaining certification, although few put them into practice. It was evident from the study that a majority of organizations prefer incremental approaches for operations improvement. Change in staff attitude has also emerged to be the main obstacle during implementation of various implementation techniques.

Kioko (2002) concluded that most registered firms in Kenya felt that using the standards resulted to internal benefits, improved customer satisfaction and advantages over competitors. The study found out that benefits of having the standard will be watered down if there is no awareness in the business community about the standard. The success of any tool is directly dependent on the skill of the users. When the standards critics point to massive overhead, bureaucratic procedures, unnecessary processes, slow cycle time they are responding to ineffective applications of the standard. He concluded that clients with a thorough knowledge of the standard typically recognize the benefits of a quality system.

Nyamwange (2001) concluded that operations strategies applied for the competitiveness of Kenyan large manufacturing firms. The study found that Kenyan firms do not entirely compete on any one of the operations strategies on cost, quality, reliability or flexibility and some tradeoffs therefore have to be made. Gekonge (1999) undertook a survey of

strategic change management practices by Kenyan companies- 'A case of companies listed at the Nairobi Stock Exchange'. The study found out that, most firms (78%) in Kenya use the procedural and incremental change models. In all these change efforts, a key influential feature was found to be top leadership support. Introducing change, either strategic or operational was found to be a major challenge with up to 60% resistance.

2.5 Why Firms Seek Certification

The number of certified companies in the world has undergone fast evolution since its inception in 1987. Many research papers have tried to analyse the reasons for this growth. A recent study of 514 North American public firms (Anderson, Daly & Johnson, 1999) found that managers sought certification as public evidence of their effective quality management practices, in addition to the need to meet regulatory requirements. In some cases, firms seek certification in the belief that it would enhance their market position, or that it would help improve internal productivity (Anderson, Daly & Johnson, 1999). Moreover, implementing ISO 9000 is not without cost. Besides the fees for auditors and consultants, the process generally consumes considerable employee time and effort. Especially as ISO 9000 was the first standard of its type, many firms had to develop, implement and document their quality management system from scratch

A review of 50 case studies of Australian business which had introduced quality assurance and implemented ISO 9000 found that 76% of these companies identified at least one strategic benefit, such as improved market share, increased sales turnover, winning new customers or differentiation from competitors (Beattie & Sohal, 1999). They reported that about half these firms had sought accreditation primarily in order to satisfy the requirements to tender for government contracts. Anecdotal evidence suggests that firms adopt the standards in order to achieve internal benefits such as quality or productivity improvements, or in response to pressure from customers, especially foreign customers.

Others argue that the standard is too generic to cause performance improvement, but can be seen as a signal of good management. Considerable uncertainty exists among practitioners and scholars about the true effects of the standard, given its generic and hence minimally prescriptive nature; Reimann and Hertz (1994) explain ISO 9000s focus on

conformance in detail and how it differs from the Baldrige award much broader focus on competitiveness. Using Compustat data, Anderson et al. (1999) found that US firms with higher exports to Europe are more likely to seek ISO 9000 certification, and Corbett (2002) found that exports drive early certifications.

2.6 Certification and Organizational Performance

An in-depth study carried out by Terziovski et al (1997) to test the strength of the relationship between ISO 9000 certification and organisational performance revealed that certification to ISO 9000 did not have a significantly positive effect on organisational performance. Some of the organisational performance variables analysed were: Market share growth; sales growth; and export growth. Thus, according to this study ISO certification can be said to have had no significant value in terms of external strategic advantages. Brown and van der Wiele (1995) report on the results of a survey of Western Australian organisations certified to ISO 9000 and concluded that while many organizations do pursue ISO certification to improve their market share and to win tenders, certification does not bring substantial benefit to these areas. They found that the greatest disappointment with ISO 9000 was the use of non-certified organizations by organisations, which required suppliers to be certified.

It has been pointed out that the ISO 9000 certification could have been useful for small companies or companies without previous experience of any quality system, especially in aspects related to the percentage of defects or conformance quality (Sun, 2000; Withers and Ebrahimpour, 2001). However, it is not clear that the ISO quality assurance system has been able to improve firms' performance. Surveys by Terziovski et al. (1997) and Singels et al. (2001) find no link between ISO 9000 and organizational performance among Australian and Dutch firms respectively; though Terziovski et al. (2002) do find that higher reported business performance is positively associated with a broader set of motivations for seeking ISO 9000 certification.

Heras et al. (2002) found a positive relationship between company results and ISO 9000 certification. In a later study they showed that the relationship was in the other direction, that is, more profitable companies implemented the ISO 9000 certification more frequently

(Heras et al., 2002). Haversjo (2000) had reached the same conclusion for Danish industry. In fact, part of the specialized literature defends the idea that ISO 9000 does not affect results (Terziovski et al., 1997; Abraham et al., 2000; Hua et al., 2000; Tsekouras et al., 2003; Martínez and Martínez, 2003) and even that performance worsens after its application (Aarts and Voss, 2001; Singels et al., 2001).

Elmuti and Kathawala (1997) report that ISO 9000 increases productivity by improving employee morale. Through all of these mechanisms, a firm would expect to see its costs decrease when it starts implementing ISO 9000. Most certifications in the industries in our study apply to production-related processes, so we use cost of goods sold divided by sales as our internal performance measure (Mukherjee et al., 1998). MacAdam and McKeown (1999) conclude that the ISO certificate results in better control of business, increased sales, reduced costs, increased productivity and higher customer satisfaction. Sun (1999) concludes that the certificate results in both fewer defective products and fewer customer complaints. Anderson, Daly, and Johnson (1999) show that North American manufacturing firms have successfully used the ISO certificate as a credible signal of quality assurance.

Chittenden, Poutziouris, and Mukktar (1998), show that a majority of ISO users feel that the advantages of using the certificate far outweigh the disadvantages. Wayhan, Kirche, and Khumawala (2002) studied forty-eight US firms that obtained ISO certification during the period between 1994 and 1996, and conclude that the ISO certificates has only a limited impact on the return on asset, and this effect dissipates quickly over time. After studying 858 certified and non-certified Australian and New Zealand firms, Terziovski, Samson and Dow, (1997) conclude that the ISO certification does not significantly impact performance measures. However, the work of Terziovski, Samson and Dow, (1997) cannot be generalized as they use data self reported by firms.

The result of Puderbach and Brown (1998) also cannot be generalized as they have only eleven firms in their sample, although they do find that revenue and net income increase faster after ISO certification than before certification.

2.7 Effects of Certification and Perceived Benefits

Considerable uncertainty exists among practitioners and scholars about the true effects of the standard, given its generic and hence minimally prescriptive nature. Reimann and Hertz (1994) explain the focus of ISO 9000s on conformance in detail and how it differs from the Baldrige award to much broader focus on competitiveness. The commonly perceived benefits of having an ISO certificate are that it improves the product and service quality, efficiency and productivity, customer confidence, and competitive advantage (Quaze, Hong and Meng, 2002). Dalgleish (2002) criticizes the ISO process by pointing out that the process requires an inordinate and unnecessary paperwork. He also points out that as the certificate leads to a pass/fail mentality. The ISO 9000 certificate hinders quality and efficiency the very things it is supposed to encourage.

Giguere and Smith (1999) suggest that the 'motto' for ISO 9000 could be 'Say what you do, do what you say - and prove it'. The effects of the process for certification to ISO 9000 in attaining or improving quality is, however, not clear. Several papers show that the results of certification depend upon company motivation in deciding to attain it (Brecka, 1994; Meegan and Taylor, 1997; Huarng et al., 1999;Hughes et al., 2000; Sun, 2000; Gotzamani and Tsiotras, 2002, Terziovski et al., 2003).

These authors state that companies that obtain ISO 9000 certification motivated by external reasons, but who do not believe that it can really help them to improve quality and efficiency get worse results than those that believe that ISO 9000 can be a good way to reduce quality costs. In this sense, Sun (2000) suggests that in order to attain benefits from ISO 9000 certification, this norm must be seen as a way towards TQM. This is consistent with findings of other studies (Baker 1996, Brown & van der Wiele 1995, Osman 1994, Terziovski et al 1997), which suggest that many companies seek ISO 9000 certification primarily for reasons of external strategic advantage.

2.8 ISO 9001: 2000 Quality Management Standard Requirements

The adoption of a quality management system is a strategic decision of an organization. This standard has been aligned with the ISO 14001:1996 Environmental Standard. Implementing ISO 9000 helps organizations to manage their processes with quality. The

structure of ISO 9001 reflects Plan-Do-Check-Action Deming cycle. The ISO 9001:2000 standard consists of 4 sets of systematic requirement: "Management responsibility", "Resource management", "Product realization", "Monitoring, analysis and improvement" (Standard ISO 9001:2000 Quality Management System – requirements.

2.9 Criticisms of ISO 9000 Certification System

Many companies have found the transition to conforming to ISO 9000 difficult. This, along with doubts about the fundamental value of the standard, has spawned many criticisms (Seddon, 1997), including that the compliance process is costly and time-consuming and a lot of administration is needed to implement it. Adhering to ISO 9000 makes processes more consistent; to some proponents of continuous improvement, it also makes it harder to improve and readapt the processes. "When all you have is a hammer, every problem looks like a nail." It has been argued that it may not be appropriate to apply a process such as ISO 9000 to a field requiring creativity, such as software engineering, which is more analogous to designing factories than to operating a factory.

Bad managers still manage at arm's length, using paper reports rather than knowing what is happening on the factory floor. ISO 9000 can reinforce this behaviour. Instead of being seen as an opportunity to improve things, audits often become quite confrontational in structure. Many companies only register to ISO 9000 because they are forced to by the marketplace, whether or not ISO 9000 is in fact appropriate to their business. ISO 9001:2000 does not give too much practical advice but instead focuses on general principles. In order to create a standard applicable to almost any kind of organization, specific requirements and tools were avoided whenever possible. This is one of the reasons for the proliferation of industry-specific standards which are more practical and give clear guidance about what quality tools have to be used and when.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The objectives of this study were to establish the employees' perception of benefits or otherwise of ISO 9001:2000 certification in KenGen, and subsequently measure the challenges associated with undertaking the certification process. The research work was descriptive, using the semi-structured simple questionnaire and applying the analysis of means and correlations on cluster samples. In this section, these methods are described. The findings were to isolate the gaps between perceived expected and observed individual attributes of the ISO 9001:2000 Certification Systems. The variables used in the measurement were; Employees' seniority, level of education; area of operation; awareness about ISO 9001; 2000 and length of service to the company.

3.2 Research Design

Churchill (1991) notes that a descriptive design can be used when the purpose is to describe characteristics of certain goals, estimate the proportion of people who behave in a certain way and make specific predictions. This design was used successfully in the past in studies related to perception by Nyamwade (2005) and Ngahu (2003).

3.3 Population

As at 1st May 2006, KenGen had a staffing level of 1509 employees. Management staff constituted 41% of the employees and 59% are in the unionisable cadres. The staff were based in power stations located around the country in six key geographical areas, viz. Nairobi, Seven Forks, Upper Tana, Kipevu, Turkwel, Sondu Miriu and Olkaria. This formed the mother population of the study.

3.4 Sample and Sample Design

The degree of confidence attached to the findings of the research depends on the sample size. Because a census of the 1509 employees is impractical with a constrained budget and time limitations, a representative sample of the population was used. To make the sample representative, stratified random sampling was used to obtain a sample from the population.

A sample size of 156 employees was used, to match available financial resources and timeframe. This conforms to the widely held rule of the thumb that, to be representative, a sample should have 30 or more test units (Wayne and Terrell, 1995). Cooper and Emory (1995) also observed that in a population of 10 million, a sample of 2 million would be misleading while a sample of 1,000 drawn in a proper manner from the same population can be more accurate.

Several researchers (Matseshe, 1999; Njoroge, 2003) have reported return rates of between 30% – 85% in their work. The calculated sample size was large enough to take care of this representative sample. and still be within the widely accepted rule of thumb of at least 30 test units, for a

A three-stage stratified sampling method was used to stratify the staff. In the first cluster, the body of staff was categorized according to the location of their work and the population of each area was determined. The second stage the staff was stratified according to status, i.e. union and management and in the third stage the management is clustered into senior management and middle management. The numbers of staff that were then randomly selected for interview are as shown in Table 3-1.

In Nairobi, however, 80% of employees are in Management and 20% are unionisable. As in table 1, the questionnaires were issued as per the stratum randomly using a computer and human resources data.

Odongo (2005) used cluster sampling to effectively measure perception. Nganga (2005) established a correlation between employee expectations and their perception of strategy depending on the level of education, seniority in the organisation and length of service.

Table 3-1: Number and Type of Staff to be Interviewed

			Questionnaires Issued			
Area	**No of Staff In Area**	**Weight**	**Management (q) (40%)**		**Union (p) (60%)**	**Total Number**
			Senior	**Middle**		
Nairobi	315	0.21	2	11	20	33
Olkaria	375	0.25	1	15	23	39
Turkwel	108	0.07	0	4	7	11
Seven Forks	363	0.24	1	14	22	37
Sondu	52	0.03	1	1	3	5
Kipevu	159	0.11	1	6	10	17
Tana	137	0.09	1	5	8	14
	1509	**1**	**6**	**56**	**94**	**156**

Source: Primary Data

3.5 Data Collection Methods

Primary data was collected through a semi-structured questionnaire (Appendix 1). Part A consists of classification data and respondents personal details while Part B has questions on how the employees perceive the ISO 9001: 2000 certification while Part C has questions on specific factors that influence perception and the extent to which each factor influences the employees perception. A five point Likert scale was used to rate the factors that influence the perception. The basis of the questionnaire was the ISO Standard as shown in Table 1 in the Appendix.

These were dispatched to all the selected respondents in the Company with a covering letter (Appendix 2), as necessary. Electronic communication is available, and was used to hasten the process. It is anticipated that some of the respondents may have had problems understanding some of the questions and independent assistance was to be arranged through the managers in the areas. Appropriate instructions were issued to such assistants to minimise bias in their role. A pilot survey was undertaken electronically to fine-tune the questions and to assess initial reactions of respondents.

3.6 Data Analysis Methods

Statistical Package for the Social Sciences (SPSS) software package was used to analyse the data. The underlying goal was to search for trends, explicit or implicit, in the population of study. The following hypothesis was tested with respect to objective 1 of the study.

H_0: There is no significant gap between employees' expectations and perception of benefits of implementing the ISO 9001:2000 certification.

H_A: A significant gap exists between the employees' employees' expectations and perception of benefits of implementing the ISO 9001:2000 certification.

Decision rule: Reject H0 if calculated t is < -1.96 or $> +1.96$ (significance level = 0.05).

Frequency tables were used for Part A of the Questionnaire. The other two parts were analysed with frequencies, means, standard deviation and tabulations. By comparing the differences between the means of the dimensions in Parts B and C of the Questionnaire, it was expected that it was possible to identify the differences in perception from expectations. A t-test was done to verify the statistical significance of the gap between the two in relation to question 1 of the study.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter details the findings and discussions of the research study. The data is summarized into descriptive statistics giving mean scores, percentages, frequencies and standard deviations. They are presented in tables and charts and described in order to show differences between the employee expectations and observed actual perceived performance of KenGen in relation to each aspect of benefit, of the certification process. Discussions on the implications of the findings on the research are also given.

4.2. Response

Out of the 156 questionnaires sent out, 95 employees completed and returned the questionnaires. This is a return rate of 61%. Several researchers (Matseshe, 1999; Njoroge, 2003) have reported return rates of between 30% – 85% in their work. The Response profiles are detailed through **Table 4-1 to 4-5**.

4.2.1 Characteristics of the Sample

Respondents were asked to give details regarding their seniority; location of place of work; level of education; awareness of the ISO 9001:2000 Quality Management Systems; and number of years of service to the company. These variables were used in the analysis.

Table 4-1: Respondents Profile by Job Level

Respondents Profile by Job Level			
	Frequency	**Percent**	**Cumulative Percent**
Senior Management	12	12.6	12.6
Middle Management	52	54.7	67.4
Unionisable staff	31	32.6	100.00
Total	95	100.00	

Source: Primary Data

As at 1st May 2006, the employee population was at 1480, 41% who were management while 59% were Unionisable staff. The respondent profile by their position in the company is shown in Table 4-1. Out of the 96% of the respondents selected to participate in the study, 6% response was expected from the Senior Management, 47% from the Middle Management and 46% from the Unionisable staff. In total, 67.4% of respondents were in senior or middle management. There was an over representation from the Senior Management by 6% and from Middle Management by 7.7%. There was an under representation of the Unionisable staff by 13.2%. This could be attributable to the fact that ISO 9001:2000 is driven by the management and thus the enthusiastic response from the management.

Table 4-2: Respondent Profile by Operational Location

Respondents Profile by Operational Location			
	Frequency	**Percent**	**Cumulative Percent**
Nairobi	31	32.6	32.6
Olkaria	21	22.1	54.7
Turkwel	5	5.3	60.0
Seven Forks	17	17.9	77.9
Mini Hydros	9	9.5	87.4
Kipevu	11	11.6	98.9
Sondu	1	1.1	100.0
Total	95	100.0	

Source: Primary Data

Most of the core operations of the company were located at different power stations outside Nairobi and the clusters were weighted to enable accurate representation because power generation plants operate under different methods and conditions, which variably influence employee perceptions and expectations. The clusters were expected to return 65% regionally and 35% from Central office. Table 4-2 indicates that all the areas were represented as consistent with the required clusters.

The Central Office in Nairobi and the Olkaria Geothermal power generation complex account for 54.7% of the total number of respondents. The respondent employees from the regional generation plants constituted 67% while 33% were from the Central office in Nairobi.

ISO 9001: 2000 is a company-wide standard and was implemented in all the areas. A three-day awareness program was undertaken for the Management staff while a day familiarization was done for the Unionisable staff.

Table 4-3: Respondent Profile by Level of Education

Highest level of education of respondent			
	Frequency	**Percent**	**Cumulative Percent**
Primary	2	2.1	2.1
Secondary	2	2.1	4.2
Middle level College	39	41.1	45.3
University	52	54.7	100.0
Total	95	100.0	

Source: Primary Data

From Table 4-3, more than half the number of the respondents (54.7 %) has university education, 41.1% have middle level college education, while only 4.2% have primary and secondary school education levels.

Table 4-4: Respondents Profile by Number of years of Service

Respondents period of Service			
	Frequency	**Percent**	**Cumulative Percent**
Not exceeding 10 years	51	53.7	53.7
11-20 years	27	28.4	82.1
21-30 years	13	13.7	95.8
More than 31 years	4	4.2	100.0
Total	95	100	

Source: Primary Data

Table 4.4 above shows that 53.7% of the respondents have been in KenGen employment for less than 10 years while 46% have served for more than 10 years. This is not surprising as KenGen was created from the Kenya Power and Lighting Company in 1997 when the Kenyan government implemented liberalization in the energy sector. A number of staff was retained by the Kenya Power and Lighting Company and KenGen has had to recruit new staff. The table also shows that 13.7 % of the staff have worked for 21 to 30 years while only 4.2 % have worked for more than 31 years.

4.2.2 Employee Awareness of the ISO 9001:2000 Standard

Table 4-5: Employee Awareness of the ISO 9001:2000 Standard

Respondents were asked about their awareness regarding the ISO 9001:2000 Standard.

Awareness of the ISO 9001:2000 Standard			
	Frequency	**Percent**	**Cumulative Percent**
No	2	2.1	2.1
Yes	93	97.9	100.0
	95	100.0	

Source: Primary Data

Of the staff surveyed for the study, two members of the staff were new and had not yet been recruited when the ISO awareness process was taking place. The rest of the staff were not aware of the ISO 9001: 2000 certification process. Subsequently, this contributed substantially to the subjective validity of their evaluation on the benefits that the company has so far attained after implementing the system.

.3 Theoretical importance and benefit of the ISO 9001:2000 System:

The theoretical benefit of the ISO 9001: 2000 is represented in the research review by 8 clauses, which are discussed in detail in Chapter 2, Section 2.6 and in Table 1. In this study, clauses were selected that constitute the theoretical importance and benefit of ISO Certification for the company, KenGen. These aspects were operationalised into indicators of benefit, thirty-three of which were tested through the questionnaire.

The perceived level of benefit was measured through a 5-Point Likert Scale where 5 represented the highest level of positive sentiment (extremely beneficial) and 1 represented the highest level of negative sentiment (completely unnecessary). The operationalised indicators were tested twice. First, consideration was given for the perceived expected level of benefit from each indicator. Then consideration was given to the perceived observed level of benefit that had accrued to the company, KenGen, after the Certification process. The indicators were ranked for expected and observed benefit by using the calculated mean score for Likert Scale responses on each item, based on the objectives of

the study. The results are presented in Table 4-6 and 4-7, in which the critical aspects of ISO TQM System are ranked from the mean scores.

Table 4-6: Indicators of expected overall benefit from ISO 9001:2000

INDICATORS (1) EXPECTED BENEFITS	Mean	Rank
Product that meets customer and applicable regulatory requirements	4.589	1.
Documentation of vision; mission; quality; policy and objectives	4.526	2.
Reviewing non-conformities and taking corrective action	4.484	3.
Having Documented procedures	4.484	4.
Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)	4.421	5.
Continual improvement of process through corrective and preventive action	4.389	6.
Provision of resources to implement and maintain and continually improve effectiveness of the QM System	4.379	7.
Top management commitment	4.358	8.
Documents legible and readily identifiable	4.358	9.
Having a Quality manual	4.337	10.
Higher quality awareness	4.305	11.
Internal audits at planned intervals	4.305	12.
Calibration of measuring equipment	4.305	13.
Competent personnel on the basis of appropriate education, training skills and expertise	4.295	14.
Communication to the organization the importance of the standard	4.295	15.
Control of documents and records	4.284	16.
Measurable quality objectives	4.284	17.
Monitoring and Measuring of product	4.284	18.
Verification, validation, monitoring, inspection and test activities for product acceptance	4.263	19.
Having a Customer Focus	4.253	20.
Documents reviewed, updated and re-approved	4.253	21.
Relevant versions of applicable documents available at points of use	4.242	22.
Better Internal communication within the organization	4.242	23.
Reliability and dependability	4.211	24.
Conducive work environment to achieve product conformity	4.168	25.
Provision of infrastructure such as buildings workspace, hardware and software	4.168	26.
Effective communication with the customer	4.147	27.
Verification of purchasing process	4.116	28.
Having an Area Management representative	4.084	29.
Measurement of customer complaints - internal and external	4.084	30.
Control of non-conforming product	4.074	31.
Less operational costs	3.937	32.
Identification and trace-ability of product	3.916	33.

Source: Primary Data

It shows that the five topmost attributes of certification that were considered extremely beneficial are: Product that meets customer and applicable regulatory requirements, which

had a mean score of 4.589 out of a possible 5; Documentation of vision, mission, quality, policy and objectives (4.526): Reviewing non-conformities and taking corrective action (4.484): Documented procedures (4.484): and Continual improvement of process through corrective and preventive action (4.389). These results show that these aspects are rated within the range of important to extremely important. The two aspects that are rated above 4.5, i.e., a conforming product, and documentation of vision, mission and quality objectives were therefore considered as extremely important by staff in the certification process.

A conforming product means a quality product and this is in line with the objectives of getting certification. Documentation of vision, mission and quality objectives guide staff in the operations and provide the necessary targets that staff are required to attain. All other indicators except less operational costs and identification and traceability of product were ranked as important, with the two ranking as somewhat important to important. These results are consistent and indicate that the staff in KenGen actually appreciated and understood the process of the ISO 9001:2000 certification.

Having an area management representative measurement of complaints though ranked as fourth last and third last respectively were still considered as important to the process of certification as they 3.916 and 3.937 respectively. All factors were considered important by employees. There were more consensuses on issues that were rated high in importance (lower standard deviation) than those of less importance.

The indicators are then used to measure the employee perception of observed actual benefit for the company and the results are given in Table 4-7 below. The scores from Table 4.7 show that ratings on the indicators of observed benefit to KenGen are not as high as ratings on the indicators of expected benefit. None of the indicators were ranked above 4.5 out of a maximum 5. While 20 out of 33 of the indicators of observed benefit were ranked as having been beneficial to the company, 31 out of 33 indicators of expected benefit were ranked as being important

Table 4-7: Indicators of observed actual benefit to KenGen from ISO 9001:2000

INDICATORS (2) OBSERVED BENEFITS	Mean	Rank
Having documented procedures	4.432	1.
Documentation of vision; mission; quality; policy and objectives	4.347	2.
Having a Quality manual	4.316	3
Higher quality awareness	4.242	4.
Internal audits at planned intervals	4.232	5.
Reviewing non-conformities and taking corrective action	4.232	6.
Continual improvement of process through corrective and preventive action	4.2	7.
Measurable quality objectives	4.189	8.
Provision of resources to implement and maintain and continually improve effectiveness of the QM System	4.168	9.
Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)	4.158	10.
Having documents legible and readily identifiable	4.158	11.
Product that meets customer and applicable regulatory requirements	4.126	12.
Control of documents and records	4.116	13.
Calibration of measuring equipment	4.084	14.
Relevant versions of applicable documents available at points of use	4.053	15.
Competent personnel on the basis of appropriate education, training skills and expertise	4.053	16.
Monitoring and Measuring of product	4.011	17.
Documents reviewed, updated and re-approved	4	18.
Having a Customer Focus	4	19
Verification, validation, monitoring, inspection and test activities for product acceptance	4	20.
Communication to the organization the importance of the standard	3.989	21.
Measurement of customer complaints - internal and external	3.989	22.
Verification of purchasing process	3.979	23
Having an Area Management representative	3.958	24
Control of non-conforming product	3.947	25
Top management commitment	3.926	26
Reliability and dependability	3.874	27.
Conducive work environment to achieve product conformity	3.874	28.
Better internal communication within the organization	3.863	29.
Identification and trace-ability of product	3.842	30.
Provision of infrastructure such as buildings workspace, hardware and software	3.832	31
Effective communication with the customer	3.8	32
Less operational costs	3.705	33.

Source: Primary Data

The scores indicated, overall, that the staff felt the benefits derived from the certification were important. All measured aspects of the certification were considered to have been beneficial to the company, in line with the provisions of the standard, which if implemented well can lead to enormous benefits both internally and externally (Kioko, 2002).

The most important factor with an average of 4.432 as valued by the staff was the ability of certification to lead to documented procedures. The staff indicated that having documented procedures enabled them to be more aware of the core business functions of KenGen. It also enhanced flexibility in job rotation and made it easier for staff to hand over when they were going on vacation. It also enabled ease of induction to new staff and led to more transparency.

Documentation of vision, mission, quality, policy and objectives; and having a quality manual for the employees were ranked second and third respectively were also highly ranked by the employees. The following attributes were ranked lower, as important: less operational costs, effective communication with the customer, provision of infrastructure, identification and traceability of product and better internal communication within the organization. On the issue of less operational costs, the certification process was deemed to be costly by staff and therefore leading to higher costs. A number of employees felt that they do not have the necessary equipment to undertake their work and this did not change with certification.

Electricity is a unique homogeneous product that cannot be differentiated and thus the issue of identification and traceability of the product did not rank highly. On internal communication staff had expected a complete overhaul due to the certification and this was not achieved.

4.4 Perceptual Gap of KenGen's Certification Process

The scores for Table 4-6 were taken to represent the situation expected by employees while those in Table 4-7 represented the actual situation in KenGen with regard to Certification. The mathematical difference between the scores from both tables for corresponding items would be zero if employees' expectations expressed in Table 4-6 were

met. Therefore, cognitive dissonance is represented by the values obtained by subtracting the mean score in Table 4-7 from each corresponding score in Table 4-6. These values were calculated and ranked as the perceptual gap in the Table 4-8.All the critical indicators had gaps between the expected performance and the actual performance. The range of the gap was from -0.021 to -0.463.

The perceived observed benefit of the certification process failed to meet all the employees' expectations. In no instance did the observed performance exceed the expectations. The perceptual gap was narrowest for the following aspects: Having a Quality manual for the employees; Having documented procedure; Higher quality awareness; Internal audits at planned intervals; and Documentation of vision, mission, quality, policy and objectives.

Documentation of vision, mission and strategy are seen as essential for success of an organization thus this finding is consistent with the finding that quality is essential for strategic success (Garvin, 1988).

The gap was widest for a number of critical indicators: the benefit of the Product that meets customer and applicable regulatory management expectedly because of the nature of electricity as a homogeneous product which cannot be differentiated: wider perceptual gap for Top management commitment expectedly because most respondents felt the top management did not initially fully commit to the project: perceptual gap occurring for Better internal and effective communication which was not adhered to as information was not flowing as expected. The employees indicated that having certification did not enhance the product, or the internal and effective communication within the organization. Workers also expressed a lack of top management commitment.

Table 4-8: Differences between expected and observed performance of KenGen in the ISO certification process

INDICATOR	Expectation	Observed	Gap	Rank
Having a Quality manual	4.337	4.316	-0.021	1
Having Documented procedures	4.484	4.432	-0.053	2.
Higher quality awareness	4.305	4.242	-0.063	3.
Internal audits at planned intervals	4.305	4.232	-0.074	4.
Identification and trace-ability of product	3.916	3.842	-0.074	5.
Measurable quality objectives	4.284	4.189	-0.095	6
Measurement of customer complaints - internal and external	4.084	3.989	-0.095	7
Control of non-conforming product	4.074	3.947	-0.126	8
Having an Area Management representative	4.084	3.958	-0.126	9
Verification of purchasing process	4.116	3.979	-0.137	10.
Control of documents and records	4.284	4.116	-0.168	11.
Documentation of vision; mission; quality; policy and objectives	4.526	4.347	-0.179	12
Relevant versions of applicable documents available at points of use	4.242	4.053	-0.189	13
Continual improvement of process through corrective and preventive action	4.389	4.2	-0.189	14
Documents legible and readily identifiable	4.358	4.158	-0.2	15.
Provision of resources to implement and maintain and continually improve effectiveness of the QM System	4.379	4.168	-0.211	16
Calibration of measuring equipment	4.305	4.084	-0.221	17.
Less operational costs	3.937	3.705	-0.232	18.
Competent personnel on the basis of appropriate education, training skills and expertise	4.295	4.053	-0242	19.
Documents reviewed, updated and re-approved	4.253	4	-0.253	20.
Having a Customer Focus	4.253	4	-0.253	21.
Reviewing non-conformities and taking corrective action	4.484	4.232	-0.253	22.
Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)	4.421	4.158	-0.263	23.
Verification, validation, monitoring, inspection and test activities for product acceptance	4.263	4	-0.263	24.
Monitoring and Measuring of product	4.284	4.011	-0.274	25
Conducive work environment to achieve product conformity	4.168	3.874	-0.295	26.
Communication to the organization the importance of the standard	4.295	3.989	-0.305	27.
Reliability and dependability	4.211	3.874	-0.337	28.
Provision of infrastructure such as buildings workspace, hardware and software	4.168	3.832	-0.337	29.
Effective communication with the customer	4.147	3.8	-0.347	30.
Better Internal communication within the organization	4.242	3.863	-0.379	31.
Top management commitment	4.358	3.926	-0.432	32
Product that meets customer and applicable regulatory requirements	4.589	4.126	-0.463	33.

Source: Primary Data

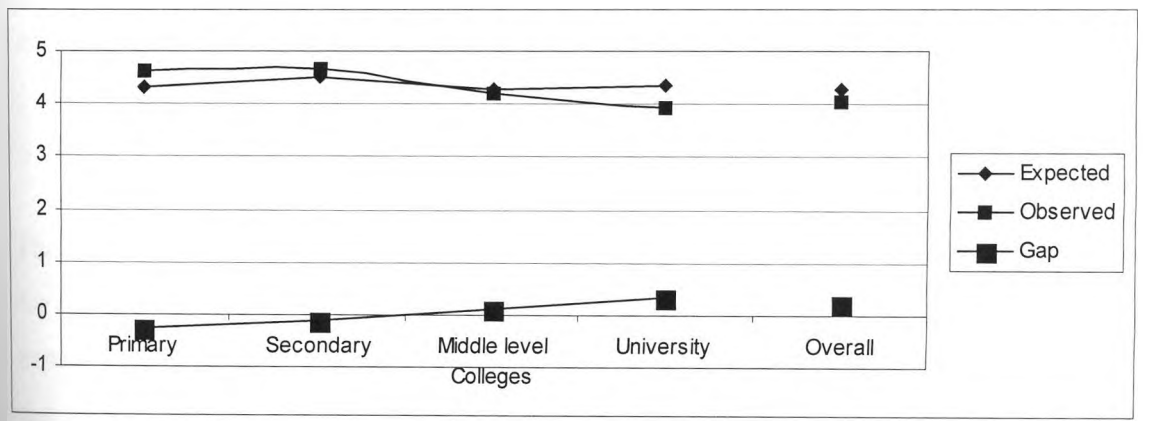
4.5 Factors influencing Employee Perceptions

The expected, perceived performance and the perceptual gap of the company with regard to ISO 9001; 2000 certification was plotted against employee attributes to investigate the level and extent of their relationship.

(i) Effect of Level of Education on Employee Perception

The expectations were highest for those with secondary and university education. Perceived performance was highest for employees with primary school education and it decreased with increase in education. The gap was widest for those with university education and lowest for those with primary school education.

Figure 4-1; Effect of Level of Education



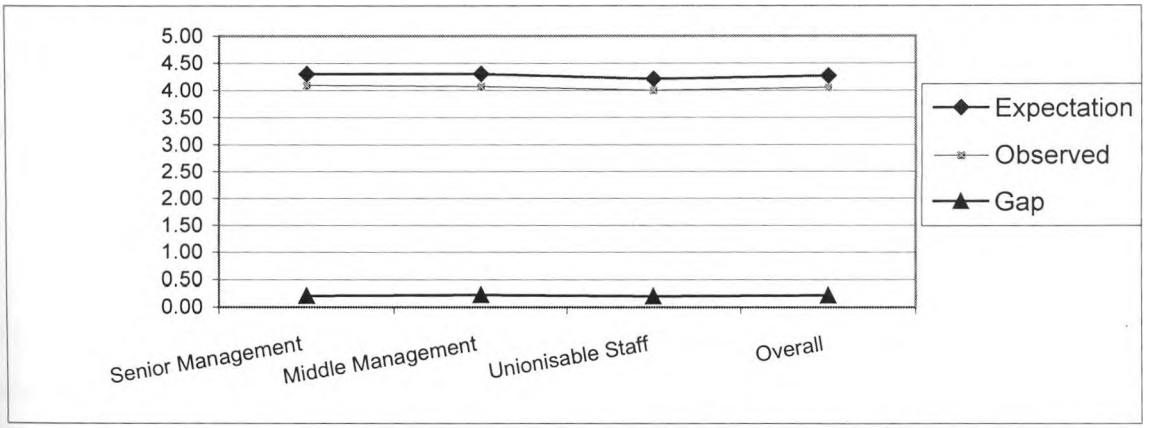
Source: Primary Data

This result is expected because employees with higher education are well versed with the activities of the company and are likely to have reasonable expectations and understand the intricacies of the performance as well (Nganga, 2004).

(ii) Effect of Employee Status in the Organization

Figure 4.2 below indicates that there was a marginal decrease in the employee expectation and observed performance as one moved down the organizational hierarchy. Unionisable employee ratings were lower than those of middle management and senior management.

Figure 4-2: Effect of Employee Status in the Organization



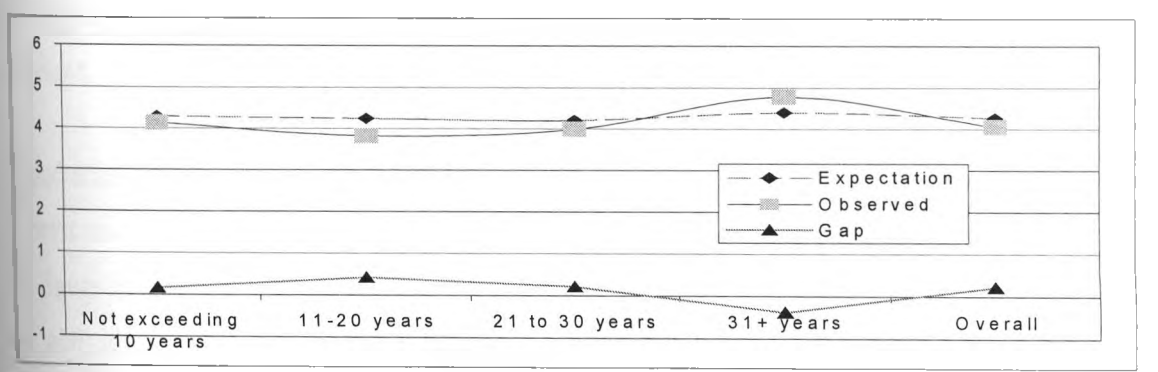
Source: Primary Data

This is expected as the management staff was exposed more to the certification process and were trained for three days unlike the union staff who were trained for only a day. They were also exposed more to the process during auditing the senior management are also leaders in the organization and are expected to bring change (Porter, 1996)...

(iii) Effect of Length of Service of the Respondent

Figure 4-3 below illustrates the effect of the number of years that employees have worked for the company. Employees who had been in the company for 11-20 years had the lowest expectations of benefits of the certification, while those who had worked for over 31 years had the highest expectations. New employees' expectations were moderate. For the staff with over 31 years experience the observed performance of the certification exceeded their expectations.

Figure 4-3: Effect of Length of Service of Respondent



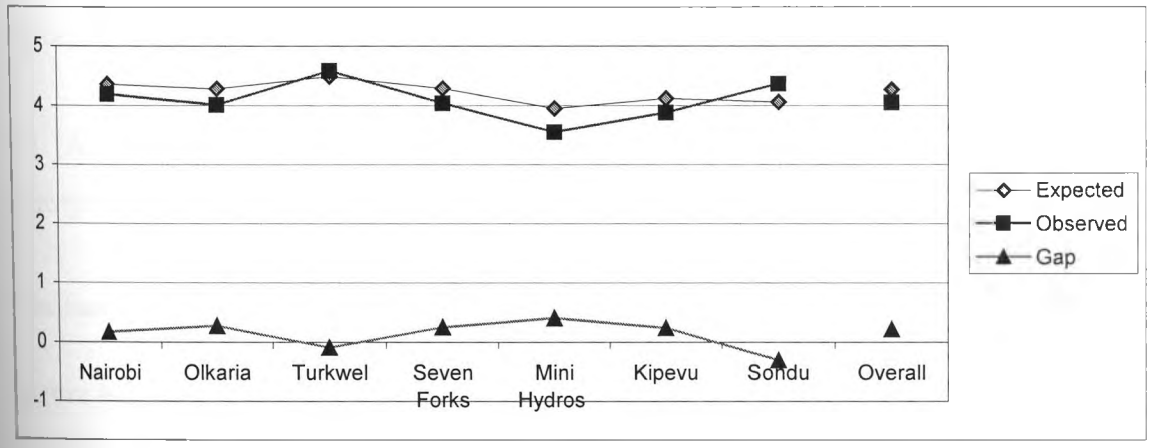
Source: Primary Data

Bennet, 1997, found that employees who have served the longest are likely to be influenced by past experiences of similar initiatives in the organisation. Employees who have stayed long in the firm are also bound to be satisfied with the firm and in senior positions. Middle management employees' expectations are lower due to the fact that they feel lost in the system.

(iv) Effect of Geographical Location of Place of Work

Figure 4-4 shows the effect of geographical location of place of work. The perceptual gap was lowest in Sondu and Turkwel, and highest in Olkaria and the Mini hydros.

Figure 4-4: Effect of Geographical Location of Place of Work



Source: Primary Data

Performance expectations varied across all stations in the company. The expectation was highest in Turkwel with the perceived performance meeting the expectation. This finding is expected as staff in Turkwel are located far away from the urban areas and may have more time to concentrate on the certification due to lack of distraction. The number of staff in Turkwel is also small which may make it easier to communicate the provisions of the standard.

Expectation was lowest in the Mini hydros and moderate in Nairobi, Olkaria, Seven forks, Kipevu and Sondu. The observed performance trailed below the expectation as shown in the figure in all areas expect in Nairobi and Turkwel. In Nairobi this is expected as most of the activities pertaining to the certification emanated from the head office and was

transferred to the areas. The acceptance level of those in the head office would therefore be high (Ng'ang'a, 2004).

4.6 Statistical Significance

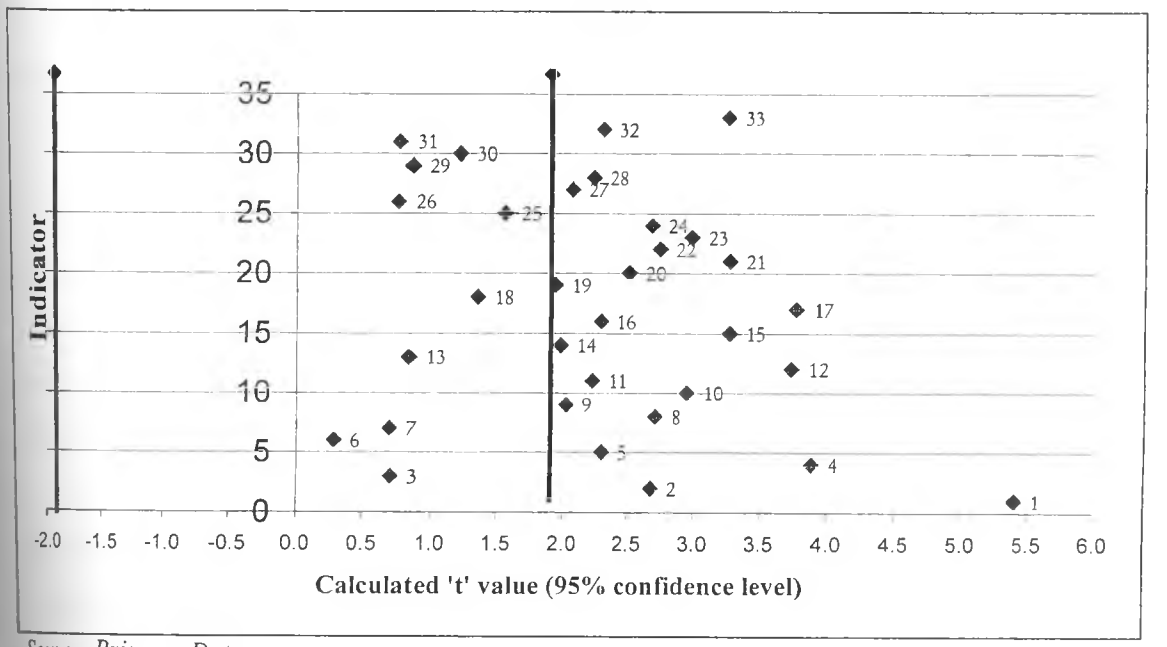
The T test for statistical significance was carried out to establish the significance of the differences and the gaps between the expectation and the ratings. The calculated T values were plotted on the horizontal axis against the indicators of benefit on the vertical axis. The confidence interval was set at 95% (0.05 significance level). The results were tabulated in the Figure 4.5 below. The following hypothesis was tested:

H_0 (Null hypothesis): there is no significant gap between employee's expectations and perception of benefit

H_1 (Alternative hypothesis): a significant gap exists between employee's expectations and perception of benefit.

Decision rule: Reject H_0 if calculated T is <-1.96 or >+1.96 (significance level =0.05)

Figure 4-5: Significance Test on the difference between Expectations and Perceived Strategy Performance



Source: Primary Data

Based on the above results, the null hypothesis was not rejected on all counts as not all calculated 't' values were greater than +1.96 or less than –1.96. Consequently, the gap between the expectations and the perceived benefits by employees was not statistically significant on all the indicators that were used in the study. For the following indicators, calculated 't' values were less than +1.96: Higher quality awareness; Having a Quality manual; Having Documented procedures; Measurable quality objectives; Having an Area Management representative; Verification of purchasing process; Identification and traceability of product; Measurement of customer complaints - internal and external; Control of non-conforming product; and having Internal audits at planned intervals.

4.7 Correlation Analysis

Correlation is used to reveal the magnitude and direction of relationships. Magnitude reveals the degree to which a variable moves in the same or opposite direction while direction is indicated by whether a variable has a positive or negative relationship (some variables may be inversely related). Absence of a relationship is expressed by a coefficient that approximates zero. The Pearson's correlation coefficient, which was used in this work, ranges from –1 through 0 to +1. Correlation was investigated on employee expectations of the certification process and its perceived performance, in relation to seniority, length of service in the Company and level of education. The results are presented in a correlation matrix in **Appendix 3.** Correlation with employee characteristics was weak and negative for most of the attributes that were used to measure employee expectations.

(i) Expectations and Seniority

There was negative but significant correlation (r = -0.312) between seniority and having a product that meets customer and regulatory requirements; negative correlation (r= -0.255) between seniority and provision of infrastructure such as buildings workspace hardware and software. Top management commitment was also negatively correlated (r = -0.283) to employee seniority.

(ii) Expectations and Length of Service

There was little correlation between the expectations and number of years spent working for the company by employees. Only one of the attributes exhibited significant negative correlation: Verification, validation, monitoring, inspection and test activities for product acceptance (r = -0.213).

(iii) Expectations and Level of Education

Level of education negatively correlated to the following attributes; 'Having a product that meets customer and regulatory requirements'; 'reliability and dependability'; 'where responsibilities and authorities are well-defined and effectively communicated within the organization'; 'less operational costs'; 'Verification, validation, monitoring, inspection and test activities for product acceptance'; 'Measurement of customer complaints - internal and external (r = -0.217)'. 'Having Documented procedures' (r = -0.269). 'Effective communication with the customer' negatively correlated with level of education (r = -0.206), together with 'Identification and traceability of product' (r = -0.214). Level of education was positively correlated with 'Having a Customer Focus' (r = 0.214). Low levels of education yielded higher expectations and lower performance scores

(iv) Expectations and Area of Operation

Negative correlations were observed between area of operation and 'Effective communication with the customer'; Area of operation and provision of infrastructure; Documents reviewed, updated and reapproved; Measurable quality objectives (r= -0.243); Measurement of customer complaints – internal and external; and Identification and traceability of product (r = -0.227)

(v) Perception of Benefit and Seniority

No significant correlation was observed between any of the aspects of observed benefit and seniority.

(vi) Perception of Benefit and Area of Operation

Perceptions of benefit accruing to KenGen from Certification were negatively correlated to the respective area of work. The relationship were of importance in the following attributes; Less operational costs (r = -0.23): Better internal communication within the organization (r = -0.228); Provision of resources to implement and maintain and continually improve effectiveness of the QM System (r = -0.203); Identification and traceability of product (r = -0.236); Calibration of measuring equipment (r = -0.246); Control of non-conforming product (r = -0.204); and Reviewing non-conformities and taking corrective action (r = -0.21)

(vii) Perception of Benefit and Length of Service

Perception of benefit was correlated to length of service on most aspects. However, the correlation was not significant with respect to the attributes of benefit...

(viii) Perception of Benefit and Level of Education

Correlation with level of education exhibited higher values for the following attributes, albeit negatively: 'Product that meets customer and applicable regulatory requirements (r = -0.253)'; 'Reliability and dependability' (r = -0.287); 'Less operational costs' (r = -0.332); 'Responsibilities and authorities defined and communicated within the organization (Delegation of Authority) (r= -0.204)'; 'Effective communication with the customer (r = -0.316)'; 'Verification, validation, monitoring, inspection and test activities for product acceptance (r = -0.287)'; 'Verification of purchasing process (r = -0.249); Measurement of customer complaints – internal and external (r = -0.324)'; 'Control of non-conforming product (r = -0.231)'. This implies that those with more education are likely to be less satisfied on these aspects of benefit than those with less education.

This would imply that those with higher education perceived the Company to be doing unsatisfactorily in certification than those with less education.

4.8 Summary of Correlation Analysis

There were three hypothesized factors that could affect employee expectation and perception of strategy: seniority in the organisation, length of service and level of education. Based on analysis of data, the employees' level of education is the most significant predictor factor, correlating with ten out of thirty-three aspects of expectation and nine out of thirty-three aspects of observed benefit. Area of operation, seniority in the organisation and length of service also correlated at various levels with the attributes.

4.9 Measure of Challenges associated with undertaking certification:

KenGen achieved certification after a year of documentation of procedures, quality objectives, quality policy and internal and external audits. The whole exercise was expensive in terms of time and money. Wagwa(2005) and Kioko (2002) identified hindrances faced by majority of the organization as follows: High surveillance costs(E1), management support towards change (E2), time taken training staff (E3), supplier inconsistency (E4) and lack of appreciation by Kenyan customers (E5).

Figure 4-6: Measures of Challenges Associated with Certification

	E1 Costs	E2 Mgmt Support	E3 Time Spent	E4 Supplier Inconsistency	E5 Lack of appreciation
	%	%	%	%	%
No	65.82	72.15	72.15	65.82	72.15
Yes	34.18	27.85	27.85	34.18	27.85

Source: Primary Data

These were tested as challenges with 34.18%, 27.85%, 27.87%, 34.18% and 27.85% of the respondents considering the factors to be challenges. Respectively, 65.82%, 72.15%, 72.15%, 65.82% and 72.15% did not consider the factors as challenges. These results show that employees were positive towards the certification and thus had a positive outlook to what otherwise would be called challenges.

Several papers show that the results of certification depend upon company motivation in deciding to attain it (Brecka, 1994; Meegan and Taylor, 1997; Huarng et al., 1999; Hughes et al., 2000; Sun, 2000; Gotzamani and Tsiotras, 2002, Terziovski et al., 2003). The findings from the study indicate that employees were motivated to get the certification and thus regarded it positively.

Respondents also indicated that certification is a time consuming process, both during training and implementation. They also suggested that the process merely documents work as it is without a mechanism for correcting inherent problems in the system before documentation. Giguere and Smith (1999) suggested a similar finding that the 'motto' for ISO 9000 could be 'Say what you do, do what you say - and prove it'. The effects of the process for certification to ISO 9000 in attaining or improving quality is, however, not clear. This indicates that there is no attempt to improve the process. In any case changes in policy or procedures are not documented immediately.

Employees also mentioned the excess handling of bulk documentation related to the certification. (Quaze, Hong and Meng, 2002). Dalgleish (2002) criticizes the ISO process by pointing out that the process requires an inordinate and unnecessary paperwork

Respondents faulted the top management for being slow in accepting the certification process. For employees who worked so hard to see to it that KenGen achieved the certification, there were no incentives for the achievement. With time, there were irregular internal audits with lack of sufficient auditors as more and more divisions found it difficult to release their employees to undertake the auditing exercise.

4.10 Disadvantages of the Certification

Disadvantages of certification were compiled from previous studies by Wagwa (2005) and Kioko (2002). These disadvantages were tested using SPSS Statistical Software. The responses were analysed, and the fact that certification does not work in a public organization was not found to be a disadvantage by the majority, 48.05% found it a disadvantage while 51.95 % did not consider it a disadvantage. 'Lack of top management support' of the process, though very important, was considered a disadvantage by 20.78% of the respondents, while 79.22% found it to be 'not a disadvantage'. ISO certification is

now widely accepted in third world countries and this was confirmed by the 59.70% who considered the factor 'not a disadvantage'.

Figure 4-7: Measure of Disadvantages of certification

	Disadvantage of Certification	Disadvantage	Not a disadvantage
		%	%
1.	Time spent	81.82	18.18
2.	Getting ISO registration is expensive	79.22	16.84
3.	Implementing ISO is expensive	71.43	23.16
4.	It will not work without management support	20.78	79.22
5.	It is not appreciated in a public organization	48.05	51.95
6.	It is not appreciated in a third world country	40.30	59.70

Source: Primary Data

The following factors were however found to be disadvantages by majority of the staff. 81.82% of respondents indicated that the time spent on the certification was a disadvantage. This is due to the time required for training and awareness of all staff, time taken to document the process and time required undertaking audits.

79.22% of respondents indicated that the fact that certificate is expensive is also a disadvantage. The expense is due to cost of hiring a certifying body and costs related to implementing the process. Reductions in cost of certification were found to be one of the ways in which acceptance of the certification could be enhanced. 71.43% of the staff indicated that implementing the standard is also expensive due to revisions in the documentation, and time and expense incurred by employees when undertaking audits. The minority of the staff did not consider these factors as disadvantage.

CHAPTER FIVE: SUMMARY AND CONCLUSCIONS

5.1 Introduction

This chapter addresses the findings of the study in relation to the study objectives. These objectives were:

i) To establish the employee's perception of benefits or otherwise of ISO 9001:2000 certification in KenGen

ii) To measure the challenges associated with undertaking the certification process.

This section also highlights the limitations of the work and gives suggestions for further research.

5.2 Summary

The analysis of data indicated that the gap between the expectations and the perceived benefits of the ISO 9001: 2000 certification by employees was statistically significant on most of the indicators that were used in the study. The null hypothesis that postulated that there was no significant gap between employees' expectations and their perception of benefit to the company was not rejected on all counts as not all values of T were greater than +1.96 or less than –1.96.

Whereas the employees' expectations of the benefits were very high, the perceived performance did not rank as high. The five topmost attributes of Certification that were considered extremely beneficial were: 'Product that meets customer and applicable regulatory requirements', which had a mean of 4.589 out of a possible 5; 'Documentation of vision; mission; quality; policy and objectives'(4.526), 'Reviewing non-conformities and taking corrective action' (4.484): 'Documented procedures' (4.484), 'Continual improvement of process through corrective and preventive action' (4.389). The values for these attributes were high and show that they were considered within the range from important to extremely important.

This was a pointer to the amount of importance the employees attached to the certification process and thus their motivation for it to succeed. Several papers show that the results of certification depend upon company motivation in deciding to attain it (Brecka, 1994; Meegan and Taylor, 1997; Huarng et al., 1999;Hughes et al., 2000; Sun, 2000; Gotzamani and Tsiotras, 2002, Terziovski et al., 2003).

Of the findings on observed benefits to KenGen none of the indicators was ranked as extremely beneficial, i.e. above 4.5 out of a possible 5. A total of twenty (20) indicators of observed benefit out of a possible thirty three (33) were ranked moderately as being beneficial. By comparison, the findings indicated that a total of 31 indicators of expectation out of the possible 33 were beneficial. However, findings indicated that the staff generally felt that the company had benefited from the certification and that each attribute was important. The accrued benefit that was valued as most important by the staff was the ability of certification to lead to documented procedures with an average of 4.432.

With regard to the advantages of Certification, the employees indicated that having documented procedures enabled them to be more aware of the core business functions of KenGen. It also enhanced flexibility in job rotation and made it easier for staff to hand over when they were going on vacation. It also enabled ease of induction of new staff and led to more transparency. Employees indicated that there were some internal benefits. This is in line with Kioko (2002) who concluded that the ISO 9001:2000 quality system if implemented well can lead to enormous benefits and Chittenden, Poutziouris, and Mukktar (1998) show that a majority of ISO users feel that the advantages of using the certificate far outweigh the disadvantages.

5.3 Conclusions

The perceptual gap was narrowest for the following aspects, Having a Quality manual for the employees, Having documented procedures, Higher quality awareness, Internal audits at planned intervals, Documentation of vision; mission; quality; policy and objectives. Documentation of vision, mission and strategy are seen as essential for success of an organization thus this outcome is consistent with the finding that quality is essential for strategic success (Garvin, 1988).

Documentation of procedures and work instructions was found to be a good practice in that the process being documented belonged to the company as opposed to the individual performing it. The finding was similar to the findings of Kioko (2002) and Ndolo (2002) who established that ISO 9000 certified firms believed the certification resulted in internal benefits. Documentation also led the employees to be more aware of the core business functions of KenGen and its commitment to embrace change in the dynamic business environment. This finding was similar to the findings by Gekonge (1999) and Kioko (2002) Although ISO certification required a lot of input in terms of time and money this was not found to be a disadvantage because the benefits far outweighed the costs.

Internal audits at planned intervals were found to be beneficial in enhancing efficiency of the process in the organization, improving staff capacity, enhancing teamwork, internal communication and enhancing a safety culture. This has the overall effect of increasing employee motivation. This is in line with the findings by Elmuti and Kathawala (1997) that certification of ISO 9000 increases productivity by improving employee morale.

This suggests that the employee perceived that the certification did not benefit the organization in terms of enhancing provision of infrastructure as some staff still felt they lacked proper office space, storage space and working equipment. Employees found a lack of commitment by the top management to the certification process whereby the process did not necessarily enhance the product. Giguere and Smith (1999) suggested a similar finding that the 'motto' for ISO 9000 could be 'Say what you do, do what you say - and prove it'. The effects of the process for certification to ISO 9000 in attaining or improving quality is, however, not clear.

Expectations arising from certification appear to be related marginally to the position that an employee holds in the company hierarchy. The findings indicated that the higher the position, the higher the expectation and the lower the perceived performance. Level of education was also found to be related to both expectation and perception. Employees with higher levels of education tended to have higher levels of expectation but the perceptual gap was smaller for employees with primary education. The higher the level of education the higher the expectation was, and the lower the perceived performance. The values for expected benefit for employees who had served for the longest periods in the company

were exceeded by values indicative of the observed benefit. This can be attributed to their positive view of the company. Members of the staff based in Nairobi and Turkwel had high levels of expectation, but which were met by the performance.

Challenges to implementation of the certification process include; time taken training staff, the documenting of procedures and the auditing process. The findings of this study were similar to those of Wagwa (2005), and Kioko (2002). The process of documentation of procedures may be done without a mechanism for first correcting inherent problems in the system. In any case, changes in policy or procedures are not documented immediately. If there is no proper introduction of the standard to the organization, top management commitment is initially lacking. There is no performance reward system and no incentives for certification achievement.

Continual Improvement is also not yet accepted as a key administrative concept or requirement in companies (Quaze, Hong and Meng, 2002). Dalgleish (2002) criticizes the ISO process by pointing out that the process requires an inordinate and unnecessary paperwork. He also points out that as the certificate leads to a pass/fail mentality. The ISO 9000 certificate hinders quality and efficiency, which are the very things it is supposed to encourage.

Some methods of improving acceptance of the standards that were discussed included the following. the spread of awareness and education in the industry: Full commitment of the top management so that they lead by example: Reduced cost of certification: Banning of the importation of sub standard products: Certification can be simplified: and a Legal framework instituted to make the standard mandatory: Incentives like tax rebates for certified companies can be introduced: Rewards for adherence to set procedures and systems documented: and Benchmarking can be done across industries. Acceptance of the standard in an organization will be also be enhanced if staff are involved at all levels.

Several lessons were learnt from the implementation process of certification which are as follows: Certification is a time consuming process and proper preparation would help in saving time: Business processes can and should be organised, procedures and work instructions can be downloaded and uploaded to the intranets of organizations for ease of

usage: Organizational transformation and change management is required as part of the change process: For the process to be efficient, internal communications between business units in the company need to be strengthened: Top Management support is the most crucial aspect for the adoption of the standard and finally staff capacity is enhanced as result of he process.

In conclusion: the findings from the study indicated that perceptual gaps between the expectations and the perceived benefits by employees was significant on most of all the indicators that were used in the study, indicating that employees had very high expectations with regard to the benefits of Certification that were not met. It was observed that the certification resulted in internal benefits, which could otherwise not be achieved without the surmounting challenges.

5.4 Recommendations

Pursuant to the preceding findings, the study recommends that all staff in any organization undergoing certification should be well trained during the awareness period. They should be fully involved in the preparation of procedures and audits. Training plays a key role in the first stage to enhance acceptance and knowledge. This should lead to good procedures and work instructions, which would enhance the efficiency of operations of the company. The certification should not be done in isolation but should be part and parcel of all the other best practices that the organization is pursuing.

Top management must support the process and be willing to invest time and resources in training staff and undertaking audits. All staff should be involved in the process and it should not be seen as a preserve of the senior management. Organizations must enhance continuous improvement if they are to maintain the certification and enhance a quality culture within the organization.

The introduction of a quality award scheme where companies who have adopted quality management systems are recognized and ranked according to how effective they have been in the application of quality management systems in all their operations will enhance the

acceptance of the standard. Reduction in the cost of certification and the introduction of tax rebates for companies that comply with certification will have similar effects.

5.5 Limitations of the Study

ISO 9001:2000 QMS is a company wide standard. The study on perception should be carried out incorporating all the employees as much as possible i.e. a census. The use of predetermined questions in a survey force respondents to answer questions without understanding the question itself well.

Measures of benefits and challenges were not exhaustive. Measures such as customer and supplier perception with respect to change in a certified organization should be investigated. There were limitations on time and financial resource. On this account, it was not possible to have a one-on-one interview with the respondents. A number of respondents expressed the desire to give more insight to their views if this was possible.

It was also appreciated that respondents' bias may have been an inevitable part of the Study as employees were required to make a judgement on the institution that they work for. One may perceive penalties or benefits resulting from taking a particular position on an issue. This was, however, minimised by encouraging anonymous responses.

5.6 Suggestions for Further Research

In view of the preceding limitations, the study suggested the extension of the analysis to:

i) Undertake survey and analysis of the perception of customers and suppliers to an organization before and after certification to moderate the "self centeredness" of employees.

ii) The study focused in the public sector. Future research should compare perceptions in both public and private companies

iii) The research study was also quantitative in nature, to a certain degree, as it identified the aggregate position of the situation without interrogating the quality of individual responses through interviews. A qualitative case study could be conducted in future to dwell deeper into the reasons behind how and why employees perceive strategic issues as identified in the findings of this study.

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APPENDIX 1: QUESTIONNAIRE

Introductory letter

Jennifer A. Nyambala
P. O. Box 47936 00100
KenGen, Stima Plaza ,Nairobi
27th February, 2007

Dear Sir/ Madam,

RE: REQUEST FOR RESEARCH DATA:

I am a post graduate student in the School of Business, University of Nairobi majoring in Operations Management. My special area of interest is in use of operations management to enhance corporate performance. In this respect, I am conducting a Management Research Project on "Employee Perception of ISO 9001:2000 Certification: The Case of KenGen".

In order to undertake the research, you have been selected to form part of the study. This is therefore to request your assistance in filling the attached questionnaire as truthfully as you can. The information you give will be treated in the strictest confidence and is needed purely for academic purposes. Even where a name has been provided, it will not under any circumstances appear in the final report. A copy of the final report will be made available to you upon request.

Your assistance and co-operation will be highly appreciated.

Yours Sincerely,

Jennifer A. Nyambala
(Student)

John Kenduiwo
Senior Lecturer, Dept of Management Science
(Project Supervisor)

Questionnaire

Part A:

Please respond to the following questions to the best of your ability. **Indicate with an X** your appropriate choice:

A: Respondent Profile

A1. Your name.....(Optional)

A2	**Your job falls within:**	
	Senior Management	
	Middle Management	
	Unionisable staff	

A3.	**Indicate your operational area:**	
	Nairobi	
	Olkaria	
	Turkwel	
	Seven Forks	
	Sondu	
	Mini Hydros	

A4.	**A4. Period of service with the company**	
	Not exceeding 10 Years	
	11 – 20 years	
	21 – 30 years	
	Over 31 years	
	Not exceeding 10 Years	
	11 – 20 years	

A5.	**Highest level of education attained**	
	Primary	
	Secondary	
	Middle level college	
	University	

A6.	**I am aware/familiar or with ISO 9001: 2000 Quality Management System?**	
	Yes	
	No	

PART B: Please indicate the degree to which in your view the following issues are Indicative of ISO 9001:2000 Certification Quality Management system, where (5) is *Extremely Important*: (4) - *Important*: (3) - *Somewhat Important* (2) - *Not Important* and (1) - *Completely Unnecessary.* Please rank the following benefits:

	INDICATOR	(5) Extremely Important	(4)	(3)	(2)	(1) Completely unnecessary
1	Product that meets customer and applicable regulatory requirements					
2	Documentation of Vision, Mission, Quality, Policy and Objectives					
3	Higher quality awareness					
4	Reliability and dependability					
5	Less operational costs					
6	Quality Manual					
7	Documented procedures					
8	Documents reviewed, updated and reapproved					
9	Relevant versions of applicable documents available at points of use					
10	Documents legible and readily identifiable					
11	Control of documents and records					
12	Top management commitment					
13	Measurable quality objectives					
14	Customer Focus					
15	Communication to the organisation the importance of the standard					
16	Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)					
17	Internal Communication within the organization					
18	Having a Management representative					
19	Management Review					
20	Provision of resources to implement and maintain and continually improve effectiveness of the QMS					
21	Competent personnel on the basis of appropriate education, training skills and experience					
22	Provision of infrastructure such as buildings, workspace, hardware and software					
23	Conducive work environment to achieve product conformity					
24	Effective communication with the Customer					
25	Verification, validation, monitoring, inspection and test activities for product acceptance					
26	Verification of purchasing process					
27	Identification and traceability of the product					
28	Calibration of measuring equipment					
30	Monitoring and Measuring of product					
31	Measurement of customer complaints-internal and external					
32	Control of non conforming product					
33	Internal audits at planned intervals					
34	Continual improvement of process through corrective and preventive action					
35	Reviewing non conformities and taking corrective action					

PART C: Please rate the degree to which in your view the implementation of ISO 9001:2000 has impacted the company in the following areas, where (5) is *Extremely important*: (4), *Important*: (3), *Somewhat Important* (2), *Not Important* and (1), *Completely Unnecessary* and led to:

	INDICATOR	(5) Extremely Important	(4)	(3)	(2)	(1) Completely unnecessary
1.	Product that meets customer and applicable regulatory requirements					
2.	Documentation of Vision, Mission, Quality, Policy and Objectives					
3.	Higher quality awareness					
4.	Reliability and dependability					
5.	Less operational costs					
6.	Quality Manual					
7.	Documented procedures					
8.	Documents reviewed, updated and reapproved					
9.	Relevant versions of applicable documents available at points of use					
10.	Documents legible and readily identifiable					
11.	Control of documents and records					
12.	Top management					
13.	Measurable quality objectives					
14.	Customer Focus					
15.	Communication to the organisation the importance of the standard					
16.	Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)					
17.	Internal Communication within the organization					
18.	Having a Management representative					
19.	Management Review					
20.	Provision of resources to implement and maintain and continually improve effectiveness of the QMS					
21.	Competent personnel on the basis of appropriate education, training skills and experience					
22.	Provision of infrastructure such as buildings, workspace, hardware and software					
23.	Conducive work environment to achieve product conformity					
24.	Effective communication with the Customer					
25.	Verification, validation, monitoring, inspection and test activities for product acceptance					
26.	Verification of purchasing process					
27.	Identification and traceability of the product					
28.	Calibration of measuring equipment					
29.	Monitoring and Measuring of process					
30.	Control of non conforming product					
31.	Internal audits at planned intervals					
32.	Continual improvement of process through corrective and preventive action					
33.	Reviewing non conformities & taking corrective action					
34.	Monitoring and Measuring of product					
35.	Measurement of customer complaints-internal and external					

PART D: What did you feel are the disadvantages of having the organization become ISO 9000:2001 certified?

		Disadvantage	Not a disadvantage
1	Time spent		
2	Getting ISO registration is expensive		
3	Implementing ISO is expensive		
4	It will not work without management support		
5	It is not appreciated in a public organization		
6	It is not appreciated in a third world country		

Other(s) (Please specify).....
.....
.....

PART E: What challenges have you faced in maintaining the registration? Tick as appropriate?

1. Surveillance costs are high? ( )
2. Management support is lacking? ( )
3. Staff turnover and new staff? ( )
4. Supplier inconsistency? ( )
5. Lack of appreciation b Kenyan customers ( )
6. Others, please specify..... .....
   .....
   .....
   .....

PART F; What do you think could be done to improve the acceptance by industry of the ISO 9001:2000 Quality Management system .....
.....
.....

APPENDIX 1: Table 1: ISO 9001:2000 Clauses

Clause	Indicators of ISO 9001:2000 implementation	Questions in questionnaire
1.0 Scope	-Product that meets customer and applicable regulatory requirements	11, 21
2.0 Normative reference	References to subsequent amendments or revisions	Not applicable
3.0 Terms and definitions	-Definitions of supplier, organization and customer	Not applicable
4.0 Quality Management System	-Documentation of Vision, Mission, Quality, Policy and Objectives -Interactions between divisions -Quality Manual A system documented, implemented, maintained and continually improved in accordance with ISO 9001 -Documented procedures -Documents reviewed, updated and reapproved -Relevant versions of applicable documents available at points of use -Documents legible and readily identifiable -Control of documents and records	1,2,3,4,5,6,7,8
Clause	**Indicators of ISO 9001:2000 implementation**	**Questions in questionnaire**
5.0 Management Responsibility	-Evidence of top management commitment to the development and implementation of the QMS -Measurable quality objectives -Customer Focus -Communication to the organisation the import -Responsibilities and authorities defined and communicated within the organization (Delegation of Authority) -Internal Communication within the organization -Having a Management representative -Management Review	13-15

6.0 Resource Management	-Provision of resources to implement and maintain and continually improve effectiveness of the QMS -Competent personnel on the basis of appropriate education, training skills and experience -Provision of infrastructure such as buildings, workspace, hardware and software -Conducive work environment to achieve product conformity	16-20
7.0 Product Realisation	-Verification, validation, monitoring, inspection and test activities for product acceptance -Effective communication with the Customer -Verification of purchasing process Identification and traceability of the product -Calibration of measuring equipment	22-24
8.0 Measurement, Analysis and Improvement	-Monitoring and Measuring of process -Monitoring and Measuring of product -Measurement of customer complaints-internal and external -Control of non conforming product -Internal audits at planned intervals -Continual improvement of process through corrective and preventive action -Reviewing non conformities and taking corrective action	23-32

Table adopted from the clauses of ISO 9001:2000 Procedures, Standard ISO 9001:2000, Quality Management System requirements. International Standard Organization, 2000.

APPENDIX 2: SIGNIFICANCE t-TEST RESULTS

	Paired Differences					t	df	Sig
INDICATOR	Mean	Std. Dev	Std. Err Mean	95% Confidence Interval				(2-tailed)
				Lower	Upper			
Product that meets customer and applicable regulatory requirements	0.463	0.836	0.086	0.293	0.633	5.403	94	0
Documentation of vision; mission; quality; policy and objectives	0.179	0.652	0.067	0.046	0.312	2.675	94	0.009
Higher quality awareness	0.063	0.873	0.09	-0.115	0.241	0.705	94	0.482
Reliability and dependability	0.337	0.846	0.087	0.165	0.509	3.882	94	0
Less operational costs	0.232	0.983	0.101	0.031	0.432	2.295	94	0.024
Having a Quality manual	0.021	0.729	0.075	-0.127	0.17	0.281	94	0.779
Having Documented procedures	0.053	0.735	0.075	-0.097	0.202	0.698	94	0.487
Documents reviewed, updated and reapproved	0.253	0.911	0.093	0.067	0.438	2.704	94	0.008
Relevant versions of applicable documents available at points of use	0.189	0.914	0.094	0.003	0.376	2.02	94	0.046
Documents legible and readily identifiable	0.2	0.662	0.068	0.065	0.335	2.944	94	0.004
Control of documents and records	0.168	0.739	0.076	0.018	0.319	2.222	94	0.029
Top management commitment	0.432	1.127	0.116	0.202	0.661	3.734	94	0
Measurable quality objectives	0.095	1.102	0.113	-0.13	0.319	0.838	94	0.404
Having a Customer Focus	0.253	1.246	0.128	-0.001	0.506	1.976	94	0.051
Communication to the organisation the importance of the standard	0.305	0.912	0.094	0.12	0.491	3.263	94	0.002
Responsibilities and authorities defined and communicated within the organization	0.263	1.122	0.115	0.035	0.492	2.285	94	0.025
Better Internal communication within the organization	0.379	0.98	0.101	0.179	0.579	3.767	94	0
Having an Area Management representative	0.126	0.914	0.094	-0.06	0.312	1.347	94	0.181
Provision of resources to implement and maintain and continually improve effectiveness of the QM System	0.211	1.061	0.109	-0.006	0.427	1.934	94	0.056
Competent personnel on the basis of appropriate education, training skills and expertise	0.242	0.942	0.097	0.05	0.434	2.505	94	0.014
Provision of infrastructure such as buildings workspace, hardware and software	0.337	1.006	0.103	0.132	0.542	3.262	94	0.002
Conducive work environment to achieve product conformity	0.295	1.051	0.108	0.081	0.509	2.734	94	0.007
Effective communication with the customer	0.347	1.137	0.117	0.116	0.579	2.978	94	0.004
Verification, validation, monitoring, inspection and test activities for product acceptance	0.263	0.959	0.098	0.068	0.458	2.675	94	0.009
Verification of purchasing process	0.137	0.858	0.088	-0.038	0.312	1.554	94	0.123
Identification and traceability of product	0.074	0.948	0.097	-0.119	0.267	0.758	94	0.451
Calibration of measuring equipment	0.221	1.044	0.107	0.008	0.434	2.065	94	0.042
Monitoring and Measuring of product	0.274	1.198	0.123	0.03	0.518	2.227	94	0.028
Measurement of customer complaints - internal and external	0.095	1.073	0.11	-0.124	0.313	0.861	94	0.392
Control of non-conforming product	0.126	1.013	0.104	-0.08	0.333	1.215	94	0.227
Internal audits at planned intervals	0.074	0.937	0.096	-0.117	0.265	0.767	94	0.445
Continual improvement of process through corrective and preventive action	0.189	0.803	0.082	0.026	0.353	2.3	94	0.024
Reviewing non-conformities and taking corrective action	0.253	0.757	0.078	0.098	0.407	3.251	94	0.002

APPENDIX 3 CORRELATION BETWEEN PERCEPTIONS OF EXPECTATION AND EMPLOYEE CHARACTERISTICS:

INDICATORS		Seniority	Area	Length	Education
Product that meets customer and applicable regulatory requirements	Pearson Correlation	**-0.312(*)**	-0.032	-0.178	0.022
	Sig. (2-tailed)	0.002	0.759	0.085	0.829
Documentation of vision; mission; quality; policy and objectives	Pearson Correlation	-0.028	-0.073	-0.195	-0.006
	Sig. (2-tailed)	0.785	0.485	0.058	0.954
Higher quality awareness	Pearson Correlation	-0.064	-0.103	-0.117	0.022
	Sig. (2-tailed)	0.535	0.32	0.257	0.833
Reliability and dependability	Pearson Correlation	0	-0.144	0.021	-0.036
	Sig. (2-tailed)	1	0.163	0.837	0.726
Less operational costs	Pearson Correlation	0.073	-0.165	-0.103	-0.088
	Sig. (2-tailed)	0.48	0.109	0.322	0.394
Having a Quality manual	Pearson Correlation	0.107	-0.167	-0.05	-0.011
	Sig. (2-tailed)	0.302	0.105	0.629	0.913
Having Documented procedures	Pearson Correlation	-0.059	-0.149	-0.009	-0.06
	Sig. (2-tailed)	0.571	0.151	0.928	0.561
Documents reviewed, updated and reapproved	Pearson Correlation	-0.019	**-0.269(*)**	0.063	0.009
	Sig. (2-tailed)	0.856	0.008	0.545	0.932
Relevant versions of applicable documents available at points of use	Pearson Correlation	-0.055	-0.167	0.114	0.039
	Sig. (2-tailed)	0.598	0.106	0.271	0.707
Documents legible and readily identifiable	Pearson Correlation	-0.044	-0.062	0.179	0.038
	Sig. (2-tailed)	0.669	0.552	0.082	0.717
Control of documents and records	Pearson Correlation	-0.009	-0.015	-0.06	-0.002
	Sig. (2-tailed)	0.929	0.882	0.563	0.987
Top management commitment	Pearson Correlation	**-0.283(*)**	-0.18	0.097	0.126
	Sig. (2-tailed)	0.005	0.081	0.349	0.223
Measurable quality objectives	Pearson Correlation	-0.116	**-0.243(*)**	-0.008	-0.044
	Sig. (2-tailed)	0.263	0.018	0.942	0.67
Having a Customer Focus	Pearson Correlation	-0.031	-0.094	0.021	**0.214(*)**
	Sig. (2-tailed)	0.763	0.364	0.844	0.037
Communication to the organization the importance of the standard	Pearson Correlation	0.03	-0.066	-0.034	0.158
	Sig. (2-tailed)	0.773	0.522	0.741	0.126
Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)	Pearson Correlation	-0.184	0.004	0.009	0.176
	Sig. (2-tailed)	0.074	0.968	0.934	0.088
Better Internal communication within the organization	Pearson Correlation	0.051	-0.132	-0.092	-0.046
	Sig. (2-tailed)	0.62	0.203	0.377	0.661
Having an Area Management representative	Pearson Correlation	0.026	0.039	-0.048	-0.144
	Sig. (2-tailed)	0.804	0.71	0.646	0.164

Provision of resources to implement and maintain and continually improve effectiveness of the QM System	Pearson Correlation	-0.099	-0.019	0.105	-0.084
	Sig. (2-tailed)	0.34	0.854	0.313	0.419
Competent personnel on the basis of appropriate education, training skills and expertise	Pearson Correlation	-0.068	-0.052	-0.185	-0.067
	Sig. (2-tailed)	0.513	0.618	0.073	0.521
Provision of infrastructure such as buildings workspace, hardware and software	Pearson Correlation	0.014	**-0.255(*)**	-0.038	-0.1
	Sig. (2-tailed)	0.893	0.013	0.711	0.335
Conducive work environment to achieve product conformity	Pearson Correlation	0.073	-0.137	0.101	-0.09
	Sig. (2-tailed)	0.483	0.185	0.331	0.383
Effective communication with the customer	Pearson Correlation	-0.053	**-0.206(*)**	0.063	-0.072
	Sig. (2-tailed)	0.607	0.045	0.544	0.49
Verification, validation, monitoring, inspection and test activities for product acceptance	Pearson Correlation	-0.043	-0.174	0.109	**-0.213**
	Sig. (2-tailed)	0.682	0.091	0.292	0.038
Verification of purchasing process	Pearson Correlation	-0.187	-0.102	0.006	-0.042
	Sig. (2-tailed)	0.069	0.324	0.95	0.683
Identification and traceability of product	Pearson Correlation	0.07	**-0.227(*)**	0.04	**-0.214(*)**
	Sig. (2-tailed)	0.499	0.027	0.703	0.037
Calibration of measuring equipment	Pearson Correlation	0.004	-0.068	-0.087	-0.06
	Sig. (2-tailed)	0.969	0.511	0.403	0.562
Monitoring and Measuring of product	Pearson Correlation	-0.024	-0.128	-0.045	-0.156
	Sig. (2-tailed)	0.816	0.216	0.667	0.132
Measurement of customer complaints - internal and external	Pearson Correlation	-0.1	**-0.217(*)**	-0.18	-0.105
	Sig. (2-tailed)	0.333	0.035	0.081	0.313
Control of non-conforming product	Pearson Correlation	-0.027	-0.077	-0.026	-0.122
	Sig. (2-tailed)	0.795	0.461	0.804	0.237
Internal audits at planned intervals	Pearson Correlation	-0.084	-0.107	0.052	-0.111
	Sig. (2-tailed)	0.418	0.302	0.616	0.285
Continual improvement of process through corrective and preventive action	Pearson Correlation	-0.126	-0.13	-0.11	-0.091
	Sig. (2-tailed)	0.222	0.208	0.288	0.38
Reviewing non-conformities and taking corrective action	Pearson Correlation	-0.054	-0.111	0.028	-0.08
	Sig. (2 tailed)	0.601	0.284	0.787	0.439

** Correlation is significant at the 0.01 level (2-tailed).**

* Correlation is significant at the 0.05 level (2-tailed).*

APPENDIX 4 CORRELATIONS BETWEEN PERCEPTIONS OF BENEFIT AND EMPLOYEE CHARACTERISTICS

Indicator		Seniority	Area	Length of service	Education
Product that meets customer and applicable regulatory requirements	Pearson Correlation	-0.187	-0.025	-0.003	**-0.253**
	Sig. (2-tailed)	0.07	0.806	0.976	0.013
Documentation of vision; mission; quality; policy and objectives	Pearson Correlation	-0.039	-0.13	0.134	-0.024
	Sig. (2-tailed)	0.709	0.208	0.196	0.821
Higher quality awareness	Pearson Correlation	-0.052	-0.074	-0.116	-0.122
	Sig. (2-tailed)	0.616	0.479	0.264	0.238
Reliability and dependability	Pearson Correlation	0.103	-0.05	0.088	**-0.287(*)**
	Sig. (2-tailed)	0.322	0.631	0.396	0.005
Less operational costs	Pearson Correlation	0.051	**-0.23(*)**	-0.105	**-0.332(**)**
	Sig. (2-tailed)	0.622	0.02	0.313	0.001
Having a Quality manual	Pearson Correlation	0.044	-0.106	0.041	-0.121
	Sig. (2-tailed)	0.671	0.308	0.696	0.243
Having documented procedures	Pearson Correlation	-0.053	-0.097	0.108	-0.069
	Sig. (2-tailed)	0.607	0.35	0.299	0.508
Documents reviewed, updated and reapproved	Pearson Correlation	0	-0.167	-0.056	-0.019
	Sig. (2-tailed)	1	0.106	0.589	0.857
Relevant versions of applicable documents available at points of use	Pearson Correlation	-0.191	-0.138	0.163	-0.076
	Sig. (2-tailed)	0.064	0.182	0.115	0.463
Having documents legible and readily identifiable	Pearson Correlation	-0.125	-0.039	0.043	-0.005
	Sig. (2-tailed)	0.227	0.708	0.682	0.958
Control of documents and records	Pearson Correlation	-0.092	-0.029	-0.074	-0.137
	Sig. (2-tailed)	0.378	0.782	0.479	0.186
Top management commitment	Pearson Correlation	-0.119	-0.058	0.008	-0.16
	Sig. (2-tailed)	0.249	0.576	0.937	0.121
Measurable quality objectives	Pearson Correlation	-0.143	-0.141	-0.066	-0.21
	Sig. (2-tailed)	0.168	0.174	0.526	0.041
Having a Customer Focus	Pearson Correlation	0.051	-0.036	-0.013	-0.234
	Sig. (2-tailed)	0.627	0.73	0.904	0.022
Communication to the organisation the importance of the standard	Pearson Correlation	-0.059	-0.173	0.027	-0.263
	Sig. (2-tailed)	0.569	0.093	0.798	0.01
Responsibilities and authorities defined and communicated within the organization (Delegation of Authority)	Pearson Correlation	-0.128	-0.053	-0.044	**-0.204(*)**
	Sig. (2-tailed)	0.217	0.607	0.669	0.047
Better internal communication within the organization	Pearson Correlation	-0.119	**-0.228(*)**	-0.015	-0.18
	Sig. (2-tailed)	0.249	0.026	0.882	0.081
Having an Area Management representative	Pearson Correlation	-0.065	-0.193	0.066	-0.108
	Sig. (2-tailed)	0.534	0.06	0.526	0.298

Provision of resources to implement and maintain and continually improve effectiveness of the QM System	Pearson Correlation	-0.035	**-0.203(*)**	-0.141	-0.138
	Sig. (2-tailed)	0.737	0.048	0.172	0.183
Competent personnel on the basis of appropriate education, training skills and expertise	Pearson Correlation	0.036	-0.079	-0.1	-0.222
	Sig. (2-tailed)	0.729	0.445	0.337	0.031
Provision of infrastructure such as buildings workspace, hardware and software	Pearson Correlation	0.107	-0.03	-0.026	-0.245
	Sig. (2-tailed)	0.301	0.775	0.799	0.017
Conducive work environment to achieve product conformity	Pearson Correlation	0.078	-0.097	0.029	-0.428
	Sig. (2-tailed)	0.451	0.349	0.778	0
Effective communication with the customer	Pearson Correlation	-0.003	-0.164	0.011	**-0.316(**)**
	Sig. (2-tailed)	0.977	0.113	0.913	0.002
Verification, validation, monitoring, inspection and test activities for product acceptance	Pearson Correlation	0.072	-0.154	0.067	**-0.287(*)**
	Sig. (2-tailed)	0.486	0.136	0.516	0.005
Verification of purchasing process	Pearson Correlation	0.007	-0.166	-0.035	**-0.249(*)**
	Sig. (2-tailed)	0.945	0.108	0.736	0.015
Identification and traceability of product	Pearson Correlation	0.082	**-0.236(*)**	0.064	-0.268
	Sig. (2-tailed)	0.43	0.021	0.539	0.009
Calibration of measuring equipment	Pearson Correlation	0.024	**-0.246(*)**	0.174	-0.101
	Sig. (2-tailed)	0.816	0.016	0.091	0.331
Monitoring and Measuring of product	Pearson Correlation	-0.165	-0.165	0.085	-0.151
	Sig. (2-tailed)	0.109	0.11	0.415	0.143
Measurement of customer complaints – internal and external	Pearson Correlation	-0.076	-0.119	0.079	**-0.324(**)**
	Sig. (2-tailed)	0.462	0.251	0.445	0.001
Control of non-conforming product	Pearson Correlation	-0.045	**-0.204(*)**	0.027	**-0.231(*)**
	Sig. (2-tailed)	0.667	0.047	0.796	0.024
Internal audits at planned intervals	Pearson Correlation	-0.026	-0.195	-0.126	-0.068
	Sig. (2-tailed)	0.801	0.058	0.223	0.513
Continual improvement of process through corrective and preventive action	Pearson Correlation	-0.12	-0.175	0.031	-0.19
	Sig. (2-tailed)	0.245	0.089	0.766	0.066
Reviewing non-conformities and taking corrective action	Pearson Correlation	-0.133	**-0.21(*)**	0.092	-0.055
	Sig. (2-tailed)	0.198	0.041	0.374	0.598