THE EFFECT THAT A QUALITY MANAGEMENT SYSTEM HAS ON SMALL, MEDIUM AND MICRO ENTERPRISES

IN THE DURBAN METROPOLITAN AREA OF

KWAZULU-NATAL

By

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DECLARATION OF ORIGINALITY

I, Cheryl-Anne Kain hereby declare that the work presented in this research paper is my own. All sources have been duly acknowledged and referenced.

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ABSTRACT

Quality management has not been developed and marketed well in South African based small, medium and micro enterprises (SMME's). The focus of SMME's has been on product price. In order to improve small business initiatives a culture or the behaviour towards quality needs also to be embraced by SMME's. Debenham (2008) finds that focussing on price alone indicates that SMME's do not grow and become sustainable. Support from both government and the private sector has focussed primarily on providing financial aid to SMME's. Ninety percent of South African small businesses largely remain in the survival stage because of a lack of skills and resources. It has become clear that financial support alone is not enough to grow and sustain SMME's.

The aim of this study is to investigate the effect that the ISO 9001 quality management system (QMS) has on SMME's in the Greater Durban Area with the view to determine the contribution it has made in terms of growth and survival of those SMME's.

This was a qualitative study investigating SMME's in the Greater Durban Metropolitan Area. The sampling frame was made up of two groups of SMME's. Unstructured interviews were conducted at 40 SMME's, comprising of 20 SMME's who have implemented ISO 9001 QMS(have the control/case) and 20 SMME's who have not implemented ISO 9001. The raw data was coded into categories and themes. Descriptive statistics, using the statistical package for the social sciences (SPSS), was used to analyse the data.

The study indicates that the majority of respondents from both groups had a positive perception towards the ISO 9001 QMS contributing to their growth and survival.

DEDICATION

To my children, parents and friends who have given me the opportunity and support to complete this study.

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Chapter One: Introduction and Background

1.1 Introduction

This chapter highlights the rationale for the study and provides an overview of the research problem, the research objectives and the research methodology that guide the study. The limitations of the study are also outlined in this chapter.

1.2 Background to the problem

Europe's and Asia's manufacturing sector were negatively affected after World War II because the destructive battles of the war were concentrated over those two continents this resulted in great losses in their infrastructure. Yet the manufacturing sector of the United States (US) remained largely intact because limited bombing occurred on US soil. This has led to a situation in which American manufactured products dominated the world trading markets and people had no choice but to buy US products, regardless of its quality (Manick, 2006:37-38).

The Germans and Japanese implemented an American concept called "Quality Control". The successful implementation of these quality control concepts in the workplace helped Germany and Japan become the most resilient, sustainable, profitable and benchmarking economies on the world trading markets (Spichiger, 2006:42).

After 1994, South Africa (SA) rejoined the global markets with the lifting of sanctions. With South Africa's new democracy, it became politically and financially viable for international organisations to invest in South Africa's economy (Magwentshu, 2004:3). The motor sector was one of the first in which international organisations invested substantially. Japan built the Toyota plant at Prospecton, Durban. Germany built the Volkswagen plant in Uitenhage as well as the BMW plant in Tshwane (Gauteng). The government welcomed these foreign investments not only for job creation but because South African businesses would benefit by the new trade relationships (Department of Trade and Industry, 2004).

The South African government established the Department of Trade and Investment (DTI) to guide the growth and development of small, medium and micro enterprises (SMME's) in the country. The role of this department is to create an effective business environment that will encourage trade relations between foreign investors and domestic organisations (Magwentshu, 2004:3). A gap exists in the way quality is managed in South African SMME's (Upton, Teal and Felan, 2001:134). The corporate business world have well-developed quality management systems (QMS), whereas South Africa's local SMME's have very few systems that manage the quality of its workmanship or controlling the quality of their products. This could be one of the reasons why SMME's have not benefited much from the new international trade relations because of the lack of quality assurance in the SMME sector. With growing international commerce, the need to develop an international quality management system standard, that can be implemented by smaller suppliers in different countries, has become necessary to enable the small supplier to become a preferred supplier. This new preferred supplier system ensures that SMME's will consistently supply high quality product on time with the right quantities to the larger international manufacturing organisations (West, 2006:55). ISO 9001 was developed by the International Organisation for Standardisation (ISO) in Geneva, Switzerland, to be the preferred QMS that bridges the gap between corporations and SMME's as well as domestic and international markets (Basu and Wright, 2003:23).

1.3 Problem statement

The numbers of entrepreneurs or micro-enterprisers who have succeeded and developed their businesses to become sustainable and profitable are very low (Berry, von Blottnitz, Cassim, Kesper, Rajaratnam and van Seventer, 2002:14). In the last 20 years, the support from both government and the private sector has focused primarily on providing financial aid to SMME's. It has become clear that financial support alone is not enough to grow and sustain SMME's. Molaobi (1997:6) states, that, to assist small business initiatives, the focus should not only be on product price. A quality culture needs to be embraced by SMME's. van der Merve (1997:5) concurs that, by focusing on price alone, SMME's will not grow and become sustainable. Presently, SMME's are still focusing on product price alone to ensure their survival. The mind shift of SMME's to include a culture of quality management in the workplace has not yet occurred. Against this backdrop, the present study has been undertaken with the objective of measuring and evaluating the perceptions that SMME's in the Greater Durban Area have of the value of the ISO 9001 QMS.

1.4 Aim and objectives of the study

The aim of this study is to investigate the impact that a Quality Management System has on SMME's in the Greater Durban Area. The key objectives are:

- To determine if the implemented ISO 9001 QMS has contributed to the growth/survival of these SMME's;
- To identify the major obstacles that prevent SMME's from implementing ISO 9001; and
- To make recommendations on how to manage and improve the quality of SMME products.

1.5 Rationale for the study

This research intends to provide evidence that the ISO 9001 QMS does contribute to the success of SMME's in the Greater Durban Area. This study is important because a survey done in 1999 on SMME's in Gauteng reveals that SMME's attached great importance to government promoted programmes for their growth. The success of these programmes is limited because of the imbalance and neglect of education and training for both employers and employees in the low productivity sector. This study will thus:

- attempt to establish the level of awareness that SMME's have of ISO 9001;
- to identify how SMME's in the Greater Durban Area have benefited from being ISO 9001 certified over a period of two to five years; and
- to determine the obstacles that prevent SMME's from implementing the ISO 9001 QMS in their organisations.

The outcome of this research is to make recommendations on how to improve the quality of SMME products. The study will also contribute to increasing SMME's education on the benefits of working within a quality management system.

1.6 Limitations and scope of the study

This study is confined to the Greater Durban Area. This province has focused on growing the SMME sector when drawing up economic policies. The city of Durban has a well

developed infrastructure, a diversified economy and the busiest harbour in Africa (*South African* Business *Guidebook*, 2004). The limitation of this study may be that there are too few SMME's in the research population with ISO 9001 certification of five years and more.

1.7 Research methodology

The research methodology employed for this study is clearly outlined in this section.

1.7.1 The study type: Qualitative

This study lends itself towards a qualitative approach because it focuses on answering those 'why' questions and is more concerned with understanding them rather than explaining them (McBride and Schostak, 2006:15).

1.7.2 The target population

Welman and Kruger (2005:52) define a population as the total collection of objects of study to which the researcher wishes to make specific conclusions. This study will consist of SMME's in the Greater Durban Area. The sampling frame will be made up of two groups of SMME's, those who have implemented the ISO 9001 QMS and those who have no formal QMS implemented within their organisations.

1.7.3 The research design: Case Control Design Survey

A case control design selects groups because they have (the case) or do not have the control (ISO 9001 QMS). The conditions are studied and the groups are compared with respect to existing or past attitudes, habits, beliefs or demographic factors (Fink and Kosecoff, 1985:72).

1.7.4 Pilot study

A pilot study was conducted to help with the design, administration, wording and procedural matters relating to the questionnaire. Pilot work is invaluable to survey research. A pilot study allows the researcher to understand the problems and difficulties that will be encountered, thus allowing time to resolve them (Oppenheim, 1992: 47-48).

1.7.5 The sampling technique

In this study, the cluster sampling technique will be used. This method of sampling allows for fewer locations to be visited because the first sample is drawn from pre-existing, heterogeneous groups, called clusters. The advantage of cluster sampling is that there is a considerable saving in time and costs (Welman and Kruger, 2005:65-66).

1.7.6 Sample selection

The sample will consist of 40 SMME's, comprising of 20 SMME's in the Greater Durban Area who have implemented ISO 9001(have the control/case) and 20 SMME's who have not. This selection is based on two aspects. Firstly, the radius in which the researcher will conduct interviews is confined to the Greater Durban Area and, secondly, the number of SMME's who have implemented ISO 9001 in the last five years is limited and the greater population is found in the Durban area.

1.7.7 Data collection method

Unstructured interviews will be conducted. A tape recorder as well as field notes will be used to collect the data. According to Fontana and Frey (1994: 276), unstructured interviews provide a great wealth of information when the study is of a qualitative nature. Oppenheim (1992) claims that one advantage of interviews is that they have a better response rate.

1.7.8 Reliability and validity

Validity and reliability of attitude questions remain one of the most difficult in social research and one to which an adequate solution is not yet in sight. By using sets of questions relating to the same attitude under investigation, a more consistent result is achieved (Oppenheim, 1992:147-148). Creswell (2005:195-196) concurs that validity in qualitative research does not carry the same connotations as is does in quantitative research but he makes a few recommendations on the subject. For this research project, the researcher has spent prolonged time in the field and has developed an in-depth understanding of the phenomenon under study and can convey detail about the site and the people that lends creditability to

the narrative account. The pilot study helps to establish reliability and validity of the questionnaire.

1.8 The questionnaire

Each respondent will be sent an introductory e-mail followed up with a confirmation telephone call. During this telephone call, the respondents will be given the opportunity to confirm their ability to participate in this research study. An appointment will be scheduled with the respondents, based on their availability. An interview schedule will be used. It will consist of three open-ended, descriptive central questions. Each question will be followed by a few open-ended probing questions relating to the central question. This will enable the researcher to narrow the focus of study. Miles and Huberman (1994) recommend that no more than twelve questions be used in qualitative research interviews. The information obtained through the literature review as well as the pilot study will assist in the compilation of the final questionnaire.

1.9 Analysis of the data

The research results were analysed using the latest version of SPSS and the appropriate statistical testing will be administered.

1.10 Overview of the study

The report on this study is made up of five chapters. These chapters cover the following areas.

Chapter 1 This chapter will focus on the introduction, the background, the problem statement, the aim and objectives, the rationale, the limitations, and the research methodology for the study.

Chapter 2 The literature review includes a critical review of relevant literature sources related to the topic, the problem statement and research objectives of this study.

Chapter 3 The research methodology will cover the study type, the target population, the research design, the pilot study, the sampling technique, the sample selection, the data collection method, the reliability and validity the questionnaire and the analysis of the data that will be used in this study.

Chapter 4 The results and discussion will summarize and discuss the findings tying them to the objectives of this study

Chapter 5 Conclusions and recommendations

1.11 Conclusion

Chapter 1 focused on the background to this research study. This chapter also outlined the rationale for investigating the impact that the ISO 9001 quality management system has had on small, medium and micro enterprises in the Greater Durban Area. Also listed are the objectives that guided the study.

Chapter 2 contains a literature review of global trends in consumer and supplier demands and effects that these trends have on organisations, irrespective of size or market sector.

Chapter Two: Quality management systems in SMME's

2.1 Introduction

Chapter two focuses attention on globalisation and the impact that quality management systems (QMS) have as consumer and supplier demands increase. The literature review also investigates the importance of small, medium and micro enterprises (SMME's) on global economies, including South Africa's (SA) economy and the benefits SMME's have when they engage in strategic thinking.

2.2 Globally-shaped strategies

Schonberger and Knod, (1988:7) are of the opinion that global, regional and local forces have shaped the strategies of organisations and their operational management functions. They use the following examples: The Great Depression of 1929, World War Two and The Oil Crisis of the 1970s to illustrate how these global factors forced industries all over the world to review operating factors such as process technologies and sources of supply. The end of South Africa's apartheid government in 1994 can be considered a global event which has and is still shaping South Africa's economic future.

A more recent global shaper of strategies is the information technology (IT) era. Great volumes of information are available to the consumer thus increasing competition in the consumer market. Donaldson (2006:38-39) cites that organisations will be shaped by the fluidity of the internet and alliances among them will need to be established that will enable them to build infrastructure capable of effectively and efficiently addressing global competition. Milakovich (2006:9) concur and states that globalisation was being stimulated by the transfer of information via telecommunications and the internet. Narver, Slater and Maclachan (2004:334) define market driven behaviour as the efforts of entrepreneurs and marketers to be efficient and develop their capabilities to attract, serve and retain customers in a constantly evolving and dynamic economic environment. Over the twenty-five years, there have been fundamental changes in the nature of markets and marketing. Milakovich (2006:16) contends that with the reduction of tariffs and quotas, free trade agreements, and the expanded use of IT, customers have the freedom to shop internationally to find best value, highest quality products and services at lower

prices than those offered by providers closer to home. China has made a significant impact on the world economy. China has a growing Gross Domestic Product (GDP), of which 38% comes from exports, while, in the United States (US), the figure is only 10% and, in European countries, it varies between 20% and 25% (Ebersohn, 2006:15).

Divanna (2004:34) has identified four key factors which influence the development of strategies in a global context:

- External forces such as new competitive pressure, introducing new products and servicing customers act to continually reshape the organisations behaviour, structure and the focus;
- Globalisation allows the organisation to look beyond the confines of the organisation and to adopt a world view placing of its business processes, products and services;
- Disintermediation allows the organisation to form groups with similar skills or network of interdependent cells of competencies resulting in highly specialized area of capabilities, who then are able to combine their skills; and form a cohesive unit and
- Evolution of technology allows the organisation to increase its competitiveness by deliberately choosing a different set of activities to deliver a unique mix of value (Divanna, 2004:34-37).

Shiba (2009:25) has an interesting approach as to what motivates organisations to evolve and states that organisations are forced to change because of customers, technology and supply chains and refers to this evolution as ‘business breakthrough.’ Milakovich (2006:86-87) extends on the work of Shiba and suggests that there are four other breakthroughs, namely, breakthroughs in:

- Attitude;
- cultural patterns;
- knowledge; and
- results.

The above breakthroughs are explained in section 2.6.

Juran (1994:15) cites that the twentieth century would be remembered as the century of productivity, while the twenty-first century would be known as the century of quality.

2.3 Choosing quality as a business strategy

At present, there are many national and international standards that attempt to systematise the implementation of business management systems such as:

- ISO 9000 associated with the improvement of quality in the workplace;
- ISO 14000 associated with environmental impact;
- OHSAS 18001 associated with occupational hazard prevention;
- ISO 26000 associated with corporate social responsibility;
- UNE 166000 EX experimental standard associated with Research and development work; and
- Investors in people associated with management of human resources (Tricker, 2001:15).

Two series of standards issued by the International Organisation for Standardisation (ISO) has become very successful in its implementation in the international economies, namely, ISO 14000 and ISO 9000 (Tricker,2001:16).

Table 2.1 illustrates the number of organisations that have been ISO 9001 certified between 2002 and 2004. It indicates the rapid growth rate during this period with China at the top of the table.

Table 2.1 The number of organisations who have been ISO 9001 and ISO 14000 certified between 2002 and 2004

	ISO 9000 (2002)	ISO 9000 (2003)	ISO 9000 (2004)	ISO 14000 (2002)	ISO 14000 (2003)	ISO 14000 (2004)
China	75,755	96,715	132,926	2 803	5 064	8 882
Italy	61,212	64,120	84,485	2 153	3 066	4 785
United Kingdom	60,960	49,151	50,884	2 917	5 460	6 253
USA	38,927	41,571	37,285	2 620	3 553	4 759
Germany	35,802	24,889	26,654	3 700	4 144	4 320

Japan	33,964	55,916	48,989	10, 620	13, 416	19, 548
Spain	28,690	33,125	40,972	3 228	4 860	6 473
Australia	27,135	19,975	17,365	1 485	1 250	1 898
France	19,870	18,007	27,101	1 467	2 344	2 955
Republic of Korea	14,520	12,846	12,412	1 065	1 495	2 609
Netherlands	13,198	10,309	6402	2 073	1 162	1 150
Canada	12,371	11,759	9286	1 064	1 274	1 492
Switzerland	10,299	9063	11,549	1 052	1 155	1 348
Total sample	432,703	447,446	506,314	35, 247	48, 243	66, 488
Total world	561,747	567,985	670,399	49, 449	66, 070	90, 569

Source: Total Quality Management Feb 2009:5)

The ISO 9000 success has aroused great interest and thus has been extensively studied in the academic field. Among other factors were the motives associated with the implementation of this standard and the results that this standard obtained when implemented successfully. The results of these studies were diverse, but, in general, it could be stated that external factors, especially the coercive pressure of customers were of great importance as motivators (Marimom, Heras and Casedesus, 2009:1-2).

Studies proved that customer pressure to improve quality and service on businesses were increasing. Yet a survey by Accenture, in 2007, on Global Customer Service Satisfaction, revealed that companies were not keeping pace with consumers' rising expectations for service, especially in emerging economies (Stokes, 2009:9).

Milakovich (2006:11) affirms that with the ever increasing transfer of knowledge and exchange of information, customers are now better informed with a broader range of choice and are no longer tolerant of perceived inefficiencies, mismanagement and a lack of responsiveness in both the private and public sectors. Stokes (2009:6) concurs that there has been a marked increase in the number of consumers who switched service providers due to poor service.

Quality has become essential for business success and survival as global competition grows. Consumer demand for quality means that businesses now distinguish themselves in terms of quality rather than price (Debenham, 2008:18-19). In these competitive times, Hughs (2009:60) suggests that organisations need to get back to the basic principles of quality, which is, reducing variation, which, in turn, reduces waste. According to Grulke, (2006:13), the increase in global competition have made businesses aware of the environment in which they trade. This has resulted in these businesses making strategic decisions to achieve sustained profitable growth. Oakland (2008:20) concurs that meeting customer needs has forced businesses to integrate quality into their business strategies to survive. Quality is universally recognised and driven by informed customers. These customers have been made aware of quality issues, such as lead in toy paint and carcinogens in food preservatives, to mention only a few. Parr (2006:18) cites that good opportunities are available for entrepreneurs of all races and within the next 12 years, businesses will make decisions based solely on 'what makes business sense.' Danes, Loy and Stafford (2009:413) proposed that customer satisfaction, including having a quality product or service, appeared to be the ultimate quality barometer for small businesses.

Divanna (2004:27) states that to develop a mindset for strategy, it is essential not to work alone. He also states that effective collaboration is the single-most difficult skill to master in the twenty–first century's business environment. A study by Marimom et al. (2009:1) revealed that globalisation and integration of western economies in the last two decades had grown significantly, as well as the agencies that specialize in standardization. These standards were developed to limit the anti- economic diversity of components, parts and supplies in order to allow for their interchangeability and facilitate serial production, repair and maintenance of products and services across economies. Consequently, standardisation has increased international trade by reducing obstacles and facilitating collaboration amongst different national practices. Marimom et al. (2009) define standardisation as that activity aimed at putting order into repetitive applications that arise in the field of industry, technology, science and the economy.

2.4 Model of how to develop and deploy new business strategies

Saunders (2009:117-119) used a simple model to describe how new business strategies should be developed and deployed within the organisation as reflected in figure 2.1. Once deployed, Basu (2004:96- 98) suggests that the new strategy be monitored both externally (which includes SWOT analysis) and internally (which includes PESTLE analysis). He defines SWOT (strengths, weaknesses, opportunities and threats) as a tool used for analysing an organisation's competitive position and PESTLE (political, economic, social, technical, legal and environmental) analysis as the tool for assessing the impact of external contexts on a project or major operation and also the impact of the project on its external contexts. Internal monitoring include process mapping and the five whys. According to Basu (2004:89-100), process mapping is a diagrammatical representation of sequential activities that produce the best possible result. He describes the 'five whys' as a systematic technique of asking questions successively. The aim is to probe the impact of the new strategy on the business.

Figure 2.1 Illustration how new business strategies should be developed and deployed within the organisation

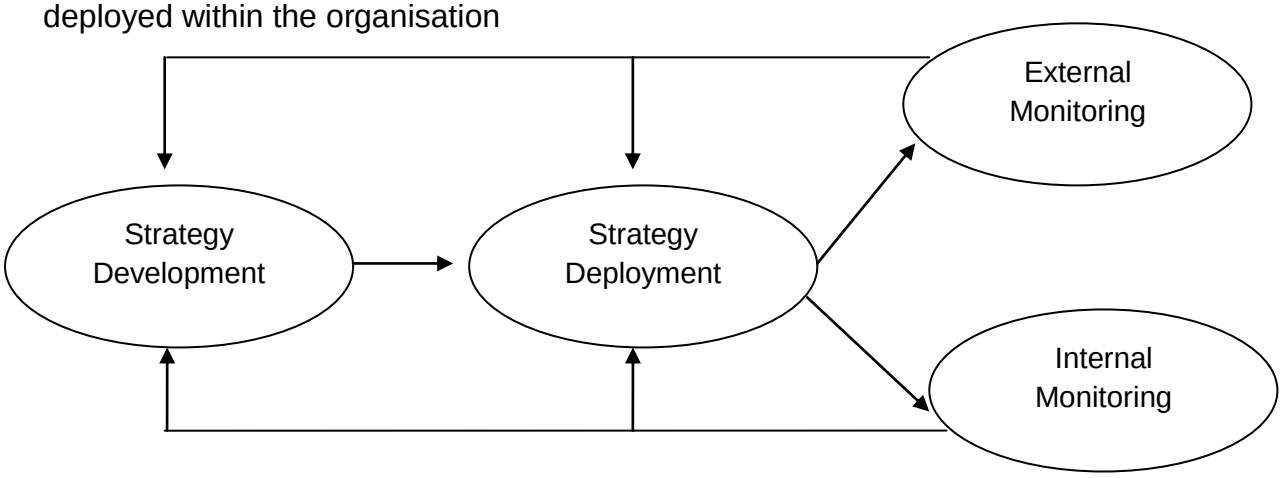


Figure 2.1 Model for the development and deployment of new business strategies: Saunders et al. (2009:118)

2.5 Strategy deployment

Evans (2008:12) defines strategic planning as the process by which the members of an organisation envision its future and develop the necessary procedures and operations to carry out that vision.

Schindehutte, Morris and Kocak (2009:4-6) extend on the work of Saunders et al. (2009) and suggest that market driving of an organisation can be referred to as strategic orientation. They add that there are seven criteria of strategy deployment but, focus on the market orientation of organisations and the behavioural components linked to them (refer to figure 2.2 and table 2.2). The components of market orientation are:

- Customer orientation is defined by Levitte (1980) as sufficiently understanding one's target buyers to be able to create superior value for them continuously;
- Competitor orientation-means that a seller understands the short- term strengths and weaknesses, the long-term capabilities and the strategies of potential competitors (Aaker, 1988); and
- Inter-functional coordination means the coordinated utilisation of company resources in creating superior value for target customers (Porter, 1985).

Organisations can use a planned approach to implemented strategies. Figure 2.2 identifies seven key areas to the implementation process and table 2.2 describes the process of strategy deployment.

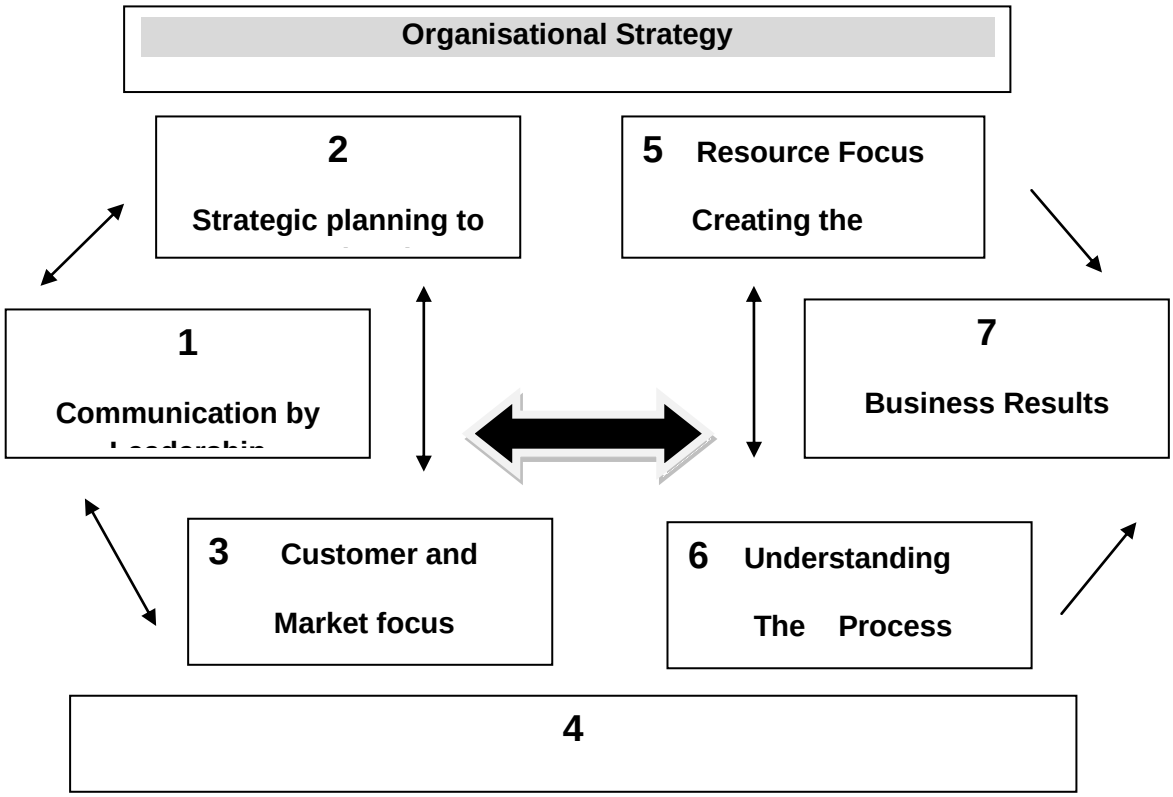


Figure 2.2 Seven criteria for Strategy deployment Evans (2008:14)

Table 2.2 summarises the seven criteria of strategy deployment

Table 2.2 Seven Criteria of Strategy Deployment

	Strategy deployment criteria	Description
1	Communicating the initiative	Top management is to filter from top down the strategic initiative to ensure the understanding of the initiative at all levels of the organisation
2	Achieving buy-in	Acceptance and adoption of the initiative by all stakeholders must be achieved
3	Aligning implementation	Customer and market focus actions are aligned to the strategic direction
4	Learning	Continuous evaluation and adaptation
5	Creating the infrastructure for deployment	Organizing teams, role and responsibilities
6	Understanding the business drivers	Awareness of the business reasons for the initiative
7	Business results	Identifying the scheduling projects, assessing risk, choosing performance measurements

Source: Saunders et al. (2009:118)

Schindehutte et al. (2009) define market orientation as the organisational principle that most effectively and efficiently creates the necessary behaviour for the creation of superior value for buyers and, thus, continuous superior performance for the organisation.

A change in organisational culture requires a change in mindset which becomes evident by a change in attitude by top management structures in organisations.

2.6 The strategic mindset

Evans (2008:34-40) suggests that a strategic mindset requires breakthroughs in culture, attitudes and knowledge. Furthermore, he elaborates on these breakthroughs.

2.6.1 Breakthrough in cultural patterns

Evans (2008:35-37) suggests that this breakthrough requires seven steps:

1. Plan: include participation by all those affected including third parties like suppliers;
2. Eliminate technical and cultural negative influences that are not required for change;
3. Work with committed leadership;
4. Treat all with dignity;
5. Reduce the impact of change by aligning it with existing patterns of behaviour;
6. Use empathy and negotiate change as it affects the entire organisation; and
7. Use a wide variety of techniques to deal with resistance to change.

2.6.2 Breakthrough in attitudes

Instead of reacting to a crisis, Evans (2008) suggests that a quality attitude must be able to reflect a willingness to innovate, to enlist change agents within the organisation, and encourage leadership and creative solutions to a problem.

2.6.3 Breakthrough in knowledge

Evans (2008) states that a breakthrough in knowledge requires the identification of the problem as well as the application of solution technique's. He suggests that the problem is best diagnosed by those who understand it best.

To adopt a quality culture in an organisation (regardless of its size), a breakthrough in attitude, culture and knowledge is essential, as these will facilitate the successful implementation of a QMS in that organisation.

2.7 A brief history of the introduction of quality in the workplace

Evans (2008:10) states that, before the Industrial Revolution, skilled craftspeople served both as manufacturers and inspectors, building quality into their products

through their pride in their workmanship. He states that customers expected quality and craftspeople understood it. The Industrial Revolution ushered in an era of mass production. Thomas Jefferson, in 1789, who was then the American Minister to France, brought the concept of interchangeable parts to America. Eli Whitney, an inventor and successful businessman, mistakenly believed that this idea would be easy to carry out. The American government awarded him a contract in 1798 to supply 10 000 muskets within two years. However, it took him more than ten years to complete the project. Whitney underestimated the effect of variation in the production process and its impact on quality parts (http://www.history.com/topics/interchangeable [accessed 23 August 2010]. Lal (2008:1) states that, up to the late forties, product quality was generally considered in terms of functional efficiency and aesthetic appeal but, since the post-war period, rapid technological advancements have led to a new concept of product quality. He defines quality of a product simply as 'fitness for the purpose'. Wild (2002: 10) provides a more holistic definition and defines the quality of a product or service as the degree to which it satisfies the customer's requirements and is influenced by:

- Design quality – the degree to which the specification of a product or service satisfies customers' requirements; and
- Process quality – the degree to which the product or service, which is made available to the customer, conforms to specification.

Basu (2008:35) concurs with Wild but adds a third dimension to this definition, namely, the quality of the organisation. This is the dimension of sustainable quality that the customer expects to be delivered continuously and is supported by the whole organisation.

The three dimensional model of quality is shown in diagrammatical form in Figure 2.3.

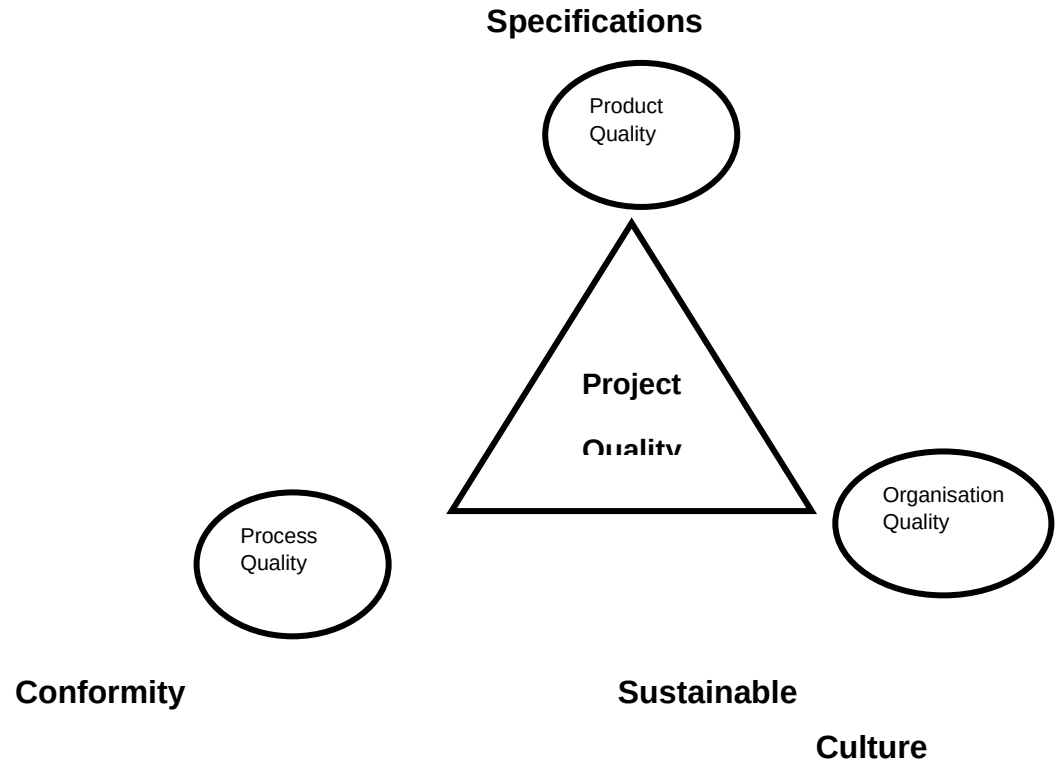


Figure 2.3 The Three Dimensions of Quality: Basu (2008:35)

Although Lal's (2008:1-3) definition of product quality is overly simplistic, he does adequately describe the characteristics that must be found in a quality product as:

- Functional efficiency;
- Appearance;
- Ease of installation and operation;
- Safety;
- Reliability; and
- Maintainability and maintenance cost.

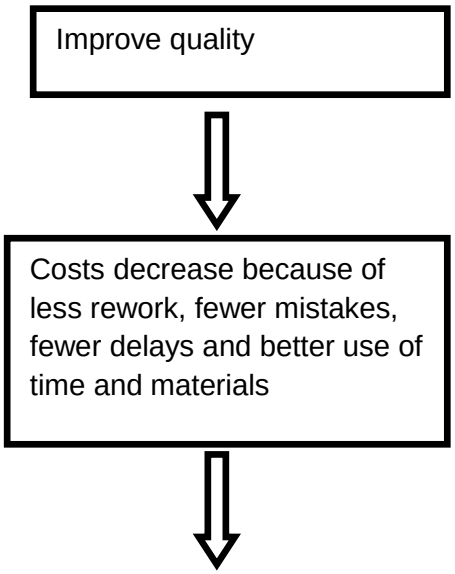
Dr. Edward Deming and Dr. Joseph Juran were pioneers of quality management in the mid-twentieth century. Their influence and guidance allowed the Japanese steel, shipbuilding, motorcycle and automotive industries to become world leaders in their respective sectors. Prior to World War II, Japan had a poor quality reputation. This war weakened the Japanese economy, but due to Juran and Deming's principle of training the entire organisation on how to manage quality, Japan was able to rebuild its economy. By 1970, the Japanese economy had successfully established itself as a world leader. This rapid turnaround in Japan's economic status allowed the

Western world to realise the significance of Juran and Deming's teachings on quality management and quality control in the workplace. Deming found that, by focusing on quality in the workplace, a chain of improvements occurred within that organisation which not only expanded the organisation but made it sustainable even in the highly competitive post-war markets.

Japan's thriving economy, based on Deming and Qurans' teachings, is clearly illustrated in Deming's Chain Reaction. Emperor Hirohito awarded Juran with the Order of the Sacred Treasure for the development of quality control in Japan and the facilitation of US and Japanese friendship (Hutchins, 2008:10:11). Walton (2009:19) contends that an organisation which does not address quality across the whole business usually fails to deliver successful financial results which usually lead to liquidation.

The history of quality in Japan's economy provides evidence which indicates that full participation of the entire organisation will enable that organisation to achieve a sustainable culture of quality.

Figure 2.4 Illustration of the chain of improvements in an organisation that Deming refers to.



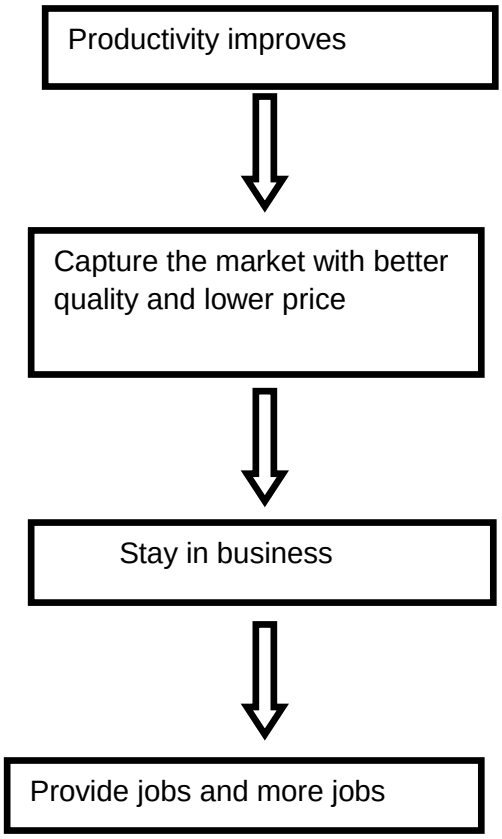


Figure 2.4 The Deming Chain Reaction: Evans (2008:24)

2.8 Quality management systems

Evans (2008:23) defines these systems as sets of functions or activities within an organisation that work together to achieve organisational goals. A system must have an aim or a purpose to which it continuously strives. For long-term business success, businesses need to follow a system comprising rules and guidance, enabling them to be consistently successful and avoid accidents and variations (Dalling, 2008:14).

Quality management implies a holistic view of the organisation and its relations as well as its procedural approach by continuously developing all activities further in such a way as to increase customer satisfaction. Quality management claims that customer satisfaction is a central value with absolute priority and assumes that achieving customer satisfaction also implies optimal economic results. In the term “quality management”, the quality aspect refers to the objective of increasing the efficiency and effectiveness of the company’s operations while the management

component aims at bringing the entire company in line with customer expectations; that is, to produce goods and services adapted to the customers' requirements (Maguad and Krone, 2009:211).

According to Tricker (2005: 187), the Quality Manual is the pinnicle of an organisation's quality management system. The author lists the main functions of a Quality Manual and figure 2.5 illustrates the significance of a Quality Manual in a QMS:

- It is the rule book by which an organisation functions;
- It forms the main policy document that establishes the QMS;
- It defines the responsibilities and interrelated activities of every member of the organisation;
- It is a source of information from which the client may derive confidence; and
- It is a vehicle for auditing, reviewing, and evaluating the organisation's QMS.

The ISO 9001 QMS uses the process approach as illustrated in figure 2.6, to help facilitate the implementation and the management of quality within an organisation.

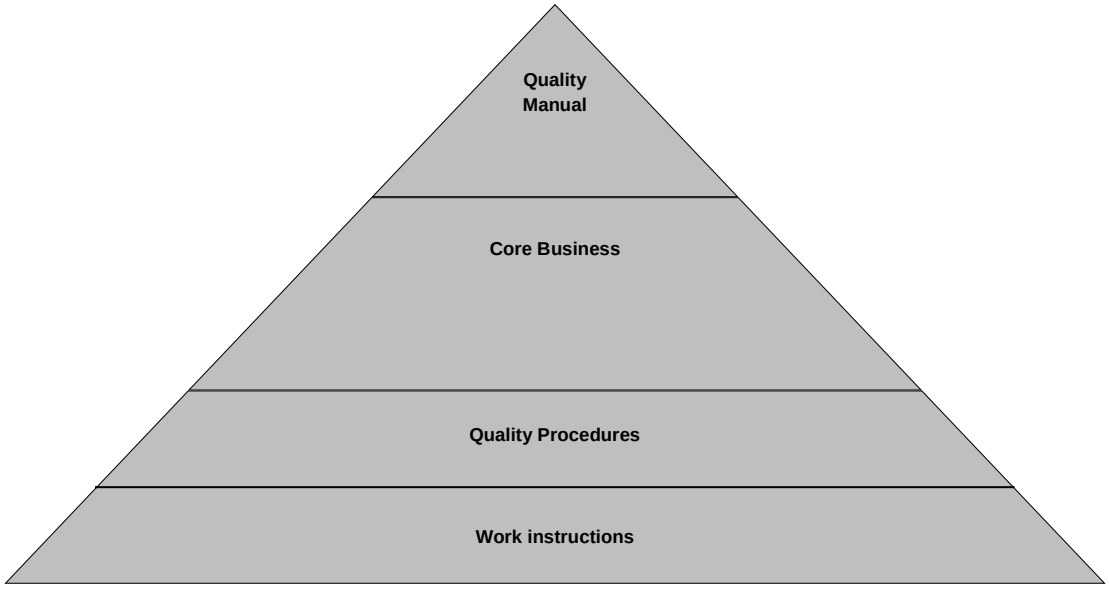


Figure 2.5 Quality Management System- Model : Evans (2008:24)

Figure 2.6 is a simplified model of the process approach.

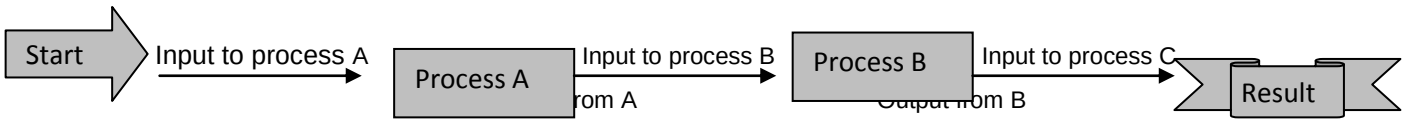


Figure 2.6 The Process Approach: Tricker (2005:49)

The process approach uses the output from one process to become the input to the next process it also identifies and manages numerous interlinked processes.

Figure 2.7 is more detailed model of the process approach

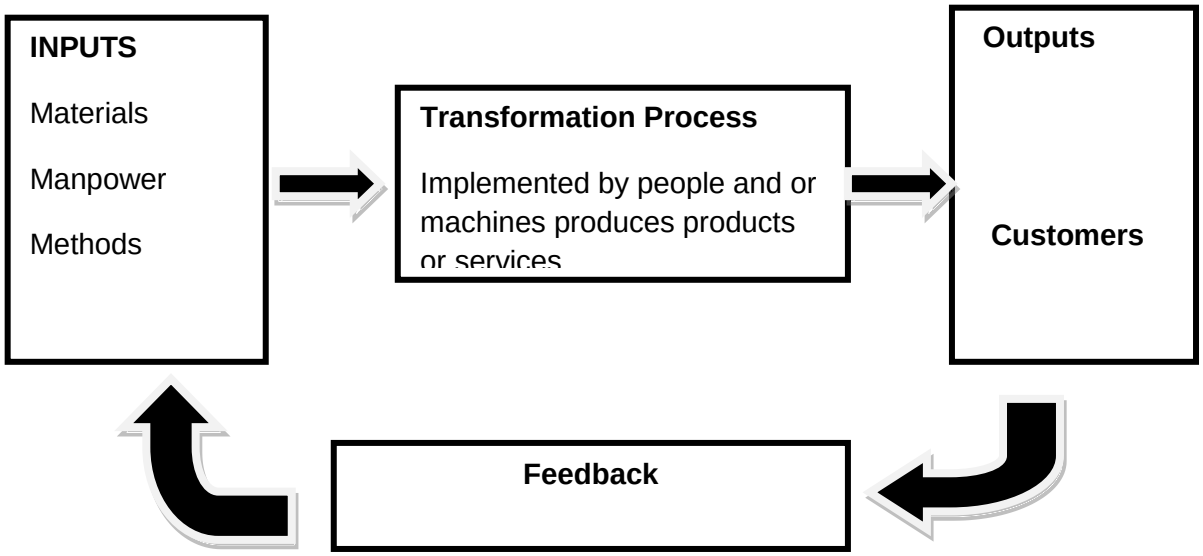


Figure 2.7 Transformation Process (from input to output using the process approach): Tricker (2005:50)

All organisations revolve around taking inputs and putting them through a series of activities that turn them into useful outputs. These activities are the supporting processes.

The process approach to quality management ensures that all activities of the organisation are included in the optimisation process, that is, procedures, staff,

management, suppliers or customers. It also eliminates non-value-adding steps when working towards meeting customer-defined needs and requirements. At each process, the major product or service must be clearly defined. The major customer must be identified and the quality requirements demanded by that customer must be known (Milakovich, 2006:9). Brown (2008:14) cites that the quality of a product or service is directly related to its quality management system (QMS).

The Chinese philosopher, Confucius, wrote 'I hear I forget, I see I remember, I do and I understand.' This philosophy is the backbone to the Plan-Do-Check-Act (PDCA) model that is used to implement and improve a QMS (figure 2.8).

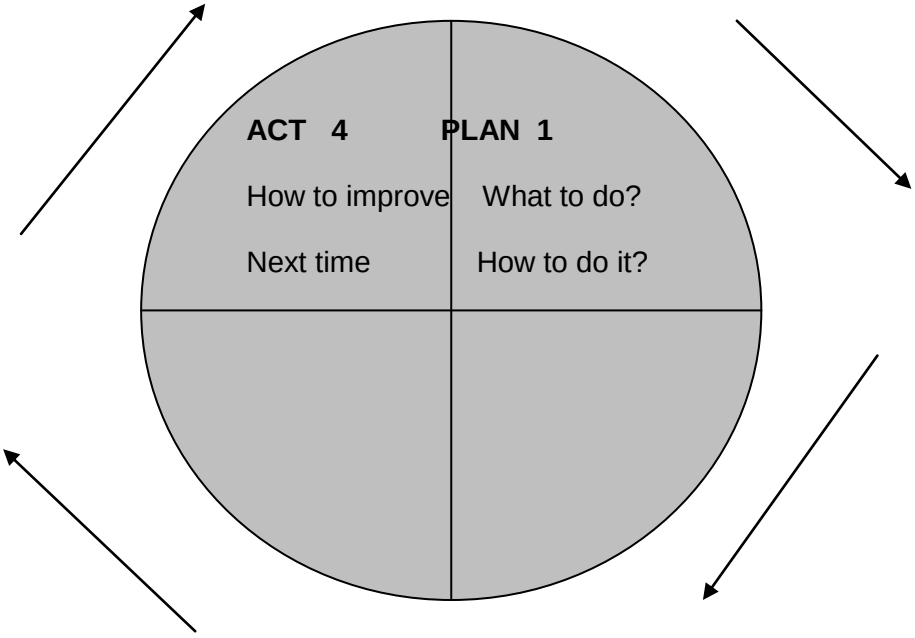


Figure 2.8 Continual Improvement Cycle (PDCA)

Source: Tricker (2005:50)

The Deming PDCA Cycle provides opportunities for continuous evaluation and improvement. The concept was invented by Shewhart and popularised by Deming. This approach is a cyclic process for planning and testing improvement activities prior to full-scale implementation. Deming stated that when an improvement idea was identified, it was often wise to test it on a small scale prior to full implementation to validate its benefit. He suggested that, by introducing change on a small scale, employees had more time to accept it and were more likely to support it

Pr-Sa/Quality-Gurus.html[accesses 23 August 2010]).

2.9 A global interpretation of quality management systems

Lamprecht (2000:24-32) extends on the work of the Dutch sociologist, Geert Hofstede, who undertook an extensive study and established quantitatively that there were differences in work habits across cultures. With this knowledge, Lampecht posed the question: Can an international quality standard be uniformly adopted across culture? Another Dutch researcher, by the name of Fons Trompenaars, conducted, over a period of several years, an extensive quantitative analysis with the aim of better understanding, describing, and classifying corporate cultures. His findings showed that there was a fundamental level of appreciation or acceptance for certain things which he called 'the source of universal taste.' He concluded that it could be assumed that universal values of quality exist, such as quality of service, quality of product and quality of management, and recommended that standardised quality (management) principles could be instilled across cultures and countries in a process that he called 'acculturation" with respect to quality principles.

Tricker (2004:9**)** extends on the work of Lamprecht and suggests that the internet-driven service quality revolution has instituted concepts and principles formerly used only in select multinational organisations, being applied locally to access markets globally.

Schindehutte et al. (2009:6) argue that market orientation (MO) of organisations in the last 20 years has strongly influenced organisational culture. He claims that MO is responsible for developing values, resource capabilities, and innovation and continuous improvements within organisations and that the market lies at the centre of any attempt to understand sustainable competitive advantage within organisations. By introducing a time dimension, Slater and Narver (2000:1165-1168) suggest that the customer-driven philosophies are short-term while market-driven philosophies represents long-term commitment because of the innovation factor that is embedded in this philosophy, which results in superior customer value.

Research shows that organisations are implementing QMS's to access markets as trading becomes more competitive, especially across borders.

2.10 Cost of quality

Foster (2007:213) states that the conventional wisdom was that if one wanted to raise the quality of a product or service one had to spend more money on it. Dr Edward Deming and Dr Joseph Juran began to challenge that conventional wisdom in the 1950s. A study in Japan on the cost of quality (COQ), by Dr Genichi Taguchi, a Japanese engineer and statistician, concurred with Deming and Juran and completely rendered obsolete the idea that the only way to improve quality was to spend more money on it. Taguchi defined the costs relating to quality as the losses incurred by individuals, organisations or societies as a result of poor quality http://www.referenceforbusiness. com/management/ Pr-Sa/Quality-Gurus.html [accessed 23 August 2010]). Furthermore, Weistein, Vokurka and Graman (2009:499) affirm that the primary value of the COQ approach is that it enabled organisations to identify opportunities for improvement and to measure those improvements over time. COQ is a financial measurement that expresses vital information in the language of management.

Milakovich (2006:37) defines the cost of poor quality as a financial accounting methodology for estimating how much an organization spends, as a proportion of either total sales or gross income, in direct and indirect losses incurred for non-value added activities. Financial losses get management's attention. These losses are measurable. This enabled Taguchi, in the mid 20Th century, to expand on his theory by using statistical methods to measure the results from the existing poor or failed quality. Below is a list of measurable poor quality:

- faulty product returns;
- costs of inspection versus including quality into design;
- company or user repair costs for labour and parts;
- production line downtime; and
- customer losses due to poor service (http://www.nysscpa.org/cpajournal/ old/14903851.htm[accessed 23 August 2010]).

Profits, after ISO certification, can be compared with those before certification. Costs of quality (COQ) programmes can be compared with revenues over time and with returns on investment prior to implementation of those quality programmes. Also the costs of poor quality policy making can be measured in terms of human suffering that it causes. Dr Deming (1986:55) supports Taguchi's model and states that costs decrease as quality increases.

Maguad and Krone (2009:214) examines the controversy of the 1970's in the United States over whether 'Quality Costs or Quality Pays' and found that quality pays. This was evident by the spread of international quality standards, increasing profits of companies that have adopted quality programmes and the global adoption of ISO 9000 QMS, among others (Marimom et al., 2009:5).

Milakovich (2006:48) is of the opinion that it costs five times more to acquire a new customer than it does to retain one. Therefore, the focus of organisations must be on delivering consistently good quality products and services to remain competitive. Cost of quality can be divided into four major components: preventions costs (PC), appraisal costs (AC), internal failure costs (IFC) and external failure costs (EFC). To measure total losses due to poor quality, these losses must be separated into direct, indirect and controllable, for example, PC and AC and resultant costs, i.e., IFC and EFC as reflected in figure 2.9.

2.10.1 Prevention costs

Gagne, Gavin and Tully (2005:188) describe prevention costs as those costs associated with preventing defects and imperfections from occurring. They cite that PC are considered as an investment made to keep appraisal and failure costs to a minimum. Prevention costs are associated with such activities as:

- quality training;
- process engineering;
- quality planning;
- supplier reviews;
- statistical process control; and
- corrective action.

An example of prevention costs related to ethics and organisational culture is the cost of educating employees in the organization's ethical belief (Gagne et al., 2005:188-190). Milakovich (2006:151) states that the most effective way an organisation could spend its' limited resources would be to invest in preventative action.

2.10.2 Appraisal costs

Evans and Lindsay (2005:134) describe appraisal costs as those costs associated with measuring quality directly by measuring efforts to ensure conformance to requirements through the measurement and analysis of data to detect non-conformances. Appraisal costs are associated with such activities as:

- lab testing;
- incoming material inspection, work-in-process and all finished goods;
- salaries;
- purchasing of equipment testing machines and material;
- costs associated with maintaining, calibrating and servicing these measuring instruments;
- process measurement and control costs;
- losses resulting from destructive tests; and
- costs associated with assessments like ISO 9001 audits.

An example of an appraisal cost relating to ethics and organisational culture is the cost of an ethics audit (Evans and Lindsay, 2005:133-136).

2.10.3 Internal failure costs

Gryna, Chua and Defeo (2007:29-31) state that these are costs incurred as a result of unsatisfactory quality found before the product or service is delivered to the customer. They associate internal failure costs with activities such as:

- scrap and reworks;
- cost of corrective action;
- downgrading; and
- process failure.

Examples of internal failure costs relating to ethics and organisational culture are:

- costs related to reduced productivity due to low employee morale following ethical lapses which is evident in high absenteeism;
- conflict of interest when disgruntled employees deliberately deliver defective products to the customer;
- sexual harassment;
- inappropriate gifts to corporate personnel and unauthorized payments which results in greed and dishonesty;
- inappropriate customer dealings which results in employee misconduct;
- unfair evaluation of personnel and

pressure to compromise personal standards (Maguad and Krone, 2009:212).

The above examples of internal failure costs relating to organisational culture all have a potentially adverse effect on employee morale and productivity.

2.10.4 External failure costs

According to Maguad and Krone (2009:214), these costs occur after poor quality of products or services reach the customer. External failure costs are associated with such activities as:

- customer complaints and returns;
- product recalls and warranty claims;
- product reliability costs;
- lost customer goodwill; and
- lost sales.

In service organisations, external failure costs are associated with:

- interrupted service;
- delays in waiting to obtain service;
- excessive time in performing the service;
- errors made in billing; and
- errors made in delivery or installation of unnecessary services.

An example of an external failure costs relating to ethics and organisational culture are lawsuits brought about by the government or private individuals (Maguad and Krone, 2009:214).

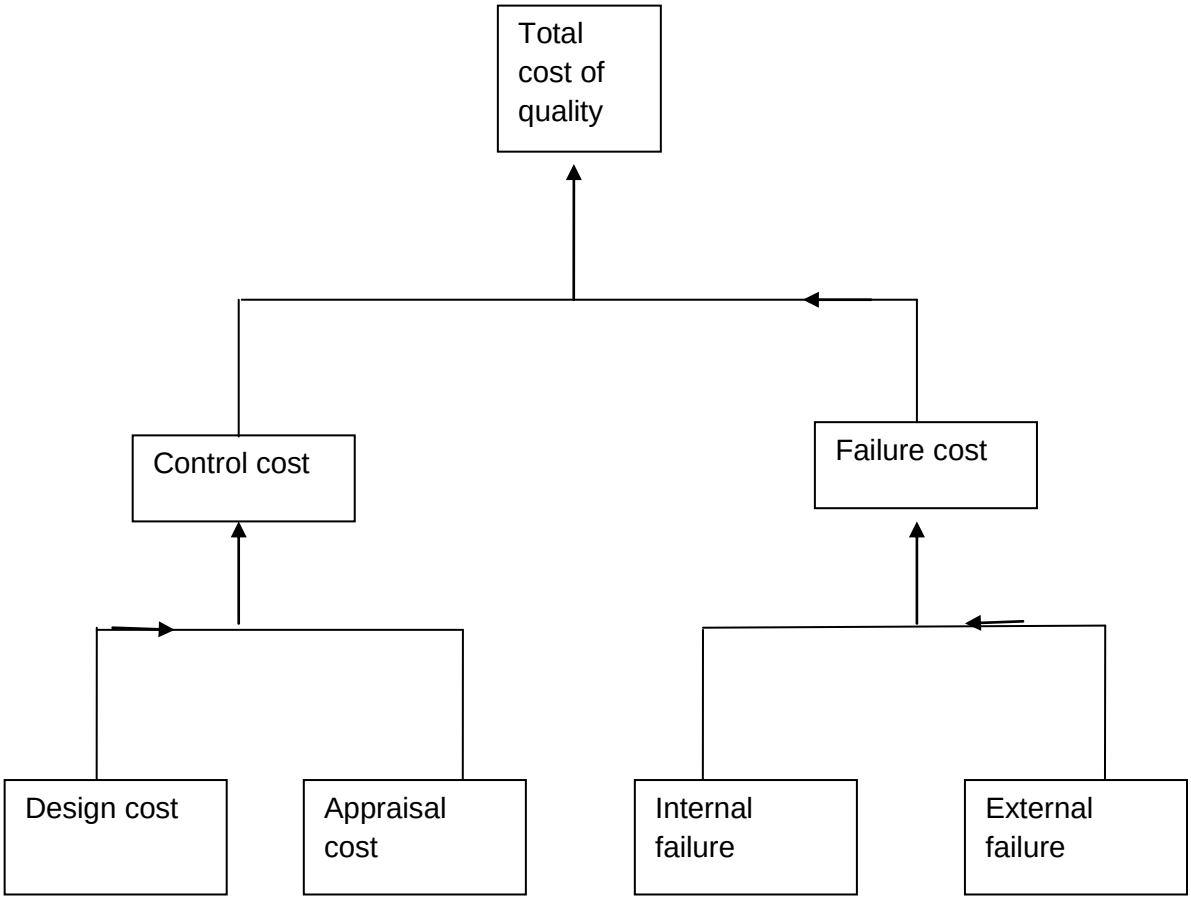


Figure 2.9 Cost of Quality Basu (2004:10)

Figure 2.10 illustrates that better prevention of poor quality reduces internal and external failure costs which, in turn, lowers appraisal costs because less inspection is required as products are made correctly the first time this illustration explains that quality pays' in the phrase 'Quality costs or Quality Pays'. Implementing a QMS improves profit margins by reducing errors.

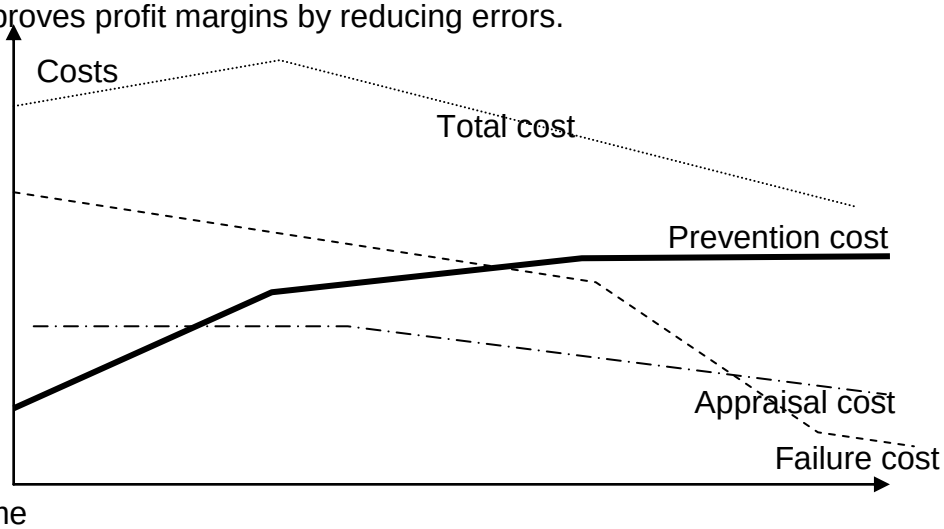


Figure 2.10 Total Cost of Quality Basu (2004:10)

2.11 Small medium and micro enterprises

Small medium and micro enterprises (SMME's) are being recognised as important contributors to job creation and gross domestic profits (GDP) of both developed and developing countries. Organisations attempt to achieve sustainable advantage by responding swiftly to market changes which have driven the entrepreneurial phenomenon.

The 2006 Global Entrepreneurship Monitor (GEM) showed that South Africa had the lowest entrepreneurial activity rate out of the 35 developing countries that participated in the annual survey. According to the report, seven out of ten businesses failed within the first two years and many others never made it past the initial planning stage. Some of the contributing factors to this high failure rate were that owners of SMME's were not aware of the solutions available to them, a lack of business skills and a shortage of information (Higgins, 2006:38). Goldstuck (2006:37) concurs that the most notable challenges faced by SMME's were related to the lack of skills and financial support. The GEM report advocates training and mentoring as critical to ensuring the survival of SMME's. Upton, Teal and Felan (2001:134) claimed that quality management provided a competitive advantage for small business firms. However very little research with regard to quality management had been done on small business. As a result, little understanding exists about quality practices within them. Due to the lack of understanding of quality management within small businesses, large corporations were not able to fully implement quality initiatives to their smaller suppliers.

Quality management is often not addressed on the business plan of small businesses. There exists a perception that small businesses do not have the resources necessary to effectively implement integrated quality initiatives. Danes, Loy and Stafford (2009:395-397) argue that it would be important to view small business success not only from a traditional, financial perspective but also from a non-financial perspective.

2.12 Skills development

The South African government has set aside R18 million rand for training employees in the small business sector (Bothma, 2006:62). This sector employs half of all

working South Africans and is the fastest growing sector in the South African economy. The government has tasked the Sector Education and Training Authorities (SETA) with ensuring adequate training at SMME level but they have reported a slow uptake of training money. The National Skills Development Strategy has set a target for the SETA's. They are to ensure that 40% of SMME's have accessed these funds for skills development by March 2010. The reasons cited by government for the lack of enthusiasm among SMME's to access this support were:

- most SMME's were family-run and often resisted change;
- owners of SMME's were reluctant to have employees learn new skills as they believed that, once they trained their employees, they would seek new employment; and
- employees of SMME's could not afford to spend time on training courses because hours spent learning usually meant time without earning (Blumenthal, 2006:61).

The reasons that Blumenthal (2006) cites for lack of enthusiasm to access government support opportunities by SMME's could be eradicated if the leadership of these SMME's took the initiative to grow.

2.13 Leadership

Yukasovic (2009:44) cites that business leaders face unprecedented complexities due to continuous change such as the effects of the depressed economic climate and lack of credit. He states that leaders, who thrive in this climate, would be those who used these conditions to grow by making strategic decisions. Decision makers must learn the skills of making decisions based on the realities and challenges of what they face in today's' business world. If the challenge facing the organisation is quality, then they require the necessary skills to drive the culture of quality in that organisation (Nightingale, 2008:2).

Organisational culture is defined, by Lategan and Holzbaur (2009:31), as the system of shared beliefs in an organisational context or, simply stated, the 'glue' that binds individuals together in an organisational context. Evans (2008:231) extends on the work of Lategan and Holzbaur, and suggests that, in order to promote a quality culture within an organisation, an organisation has to re structure for quality

programmes. This is done by promoting the concept of internal customers, forming process teams, reducing management hierarchy and establishing quality steering committees to ensure the buy-in of quality programmes within that organisation.

Management commitment to drive the quality culture within an organisation was one of the key requirements to successfully implement and sustain a quality management system. Lussier and Achua (2001:41) state that the most frequently cited reason for failure to implement a QMS's was the lack of commitment from management. They cite that the causes for this lack of commitment were:

- reluctance by management to change old habits; and
- failure to lead.

Furthermore, they confirm the link between lack of implementation and lack of management commitment. The above authors state that to sustain a quality initiative in the organisation, top management must demonstrate commitment by displaying consistently high ethical standards and must cultivate high levels of trust and respect from their members. They suggest that this commitment should be based not just on stated values but on their willingness to make personal sacrifices for the sake of upholding these values.

Dr Edward Deming espoused a transformation in management with his 14 Points for Management (refer to Table 2.3). Dr Joseph Juran concurred by stating that senior management must play an active and enthusiastic leadership role in the quality management process (Evans, 2008:32). Goetsch and Davis (2002:58) state that top management should establish a customer-oriented organization by:

a) defining systems and processes that can be clearly understood, managed, and improved in effectiveness as well as efficiency; and
b) by insuring effective and efficient operation and control of processes and the measurement and data use to determine satisfactory performance of the organisation.

Deming's 14 Points for management, is tabled in table 2.3

Table 2.3 Deming's 14 Point for Management

1	Create and publish to all employees a statement of the aims and purpose of the company. Management must demonstrate constantly their commitment to this statement.
2	Learn the new philosophy, that is, top management and everybody.
3	Understand the purpose of inspection, for improvement of processes and reduction of costs.
4	End the practice of awarding businesses on the basis of price tag alone.
5	Improve constantly and forever the system of production and service.
6	Institute training.
7	Teach and institute leadership.
8	Drive out fear. Create trust. Create a climate for innovation.
9	Optimise towards the aims and purpose of the company, the efforts of teams, groups and staff.
10	Eliminate exhortations for the workplace.
11	a) Eliminate numerical quotas for production. Instead learn and institute methods for improvement. b) Eliminate management by objective. Instead, learn the capabilities of processes and how to improve them.
12	Remove barriers that rob people of pride of workmanship.
13	Encourage education and self improvement for everyone.
14	Take action to accomplish the transformation.

Source: Evans (2008:29)

Similarly, Yukasovic (2009:47-48) lists the requirements of good leadership as:

- Chief executives must take active ownership for leading the organisation towards the desired behaviour;
- Leaders must invest effort in building a common understanding of the organisation and its vision;
- Leaders must engage in cross-organisational leadership and must be able to handle the day-to-day management of their organisational areas;

- Leaders must build governance capabilities within their organisations by equipping each employee with clear job descriptions, roles and responsibilities;
- Leaders must address skills deficits and encourage one-to-one mentoring; and
- Leaders must ensure the right behaviours are enabled and address and remove unhelpful behaviour.

Forward thinking leaders are required by SMME's who will put more time and effort on long-term, sustainable components of the business such as outsourcing.

2.14 Outsourcing

Outsourcing allows organisations to reduce in size there by focussing more on core functions. Organisations that outsource certain activities must ensure they do not lose control of their quality management system. Outsourcing is global trend and must be managed in a QMS.

The globalisation of competition, according to Divanna (2004: 26), has meant that organisations must coordinate their actions across continents because there are large differences in time. It also means they must react with speed and tailor their products and services to local markets. In the highly competitive commercial environment, a successful business must be streamlined and focused on core functions or what they do best. This has lead to a business practice known as operating under lean conditions. Running lean operations means that a significant amount of work is outsourced both locally and internationally. In the past, outsourcing was defined as purchasing ongoing services from an outside company that most organisations normally provide themselves, but globalisation has since shifted the concept of outsourcing to a phenomenon known as transformational outsourcing. Here organisations use outsourcing to achieve rapid, sustainable improvement in the organisations' performance. This involves outsourcing ongoing services that are critical to the performance of the business (Linder, 2004:26:29). According to Draper and Alves (2009:74), China and India capitalised by outsourcing their more sluggish parts of their economies.

Marimom et al. (2009:2) contend that, in order to outsource products and services, appropriate standards must be implemented in order to limit variability and diversity of components, parts and supplies. Evans (2008:45) concurs and extends on the usefulness of outsourcing and states that inter-organisational partnerships like supplier, customers, or educational organisations allow for innovation, reduction in variation of critical characteristics of supplied materials, lower costs and improved quality. He further states that by reducing the number of suppliers and establishing long-term relationship with the selected suppliers, the organisation is able to blend core competencies with complementary strengths and capabilities of these suppliers, thus improving the organisations' flexibility, responsiveness and knowledge sharing capabilities.

Outsourcing has the potential of placing a business at great risk because that task or process that is outsourced is no longer contained within the primary business management system and is, therefore, no longer subjected to all the controls of that system. McDonald (2008:32-33) lists the criteria that larger or more mature organisations have developed to enable them to manage this risk:

- Quality-aspects like fitness for purpose, reliability, technical specifications and technical competence;
- Cost- direct and indirect associated with money, for example, unit, lifetime, and failure costs or late payment charges;
- Delivery-time-related issues, such as lead time, on-time delivery performance, accuracy and frequency; and
- Service- intangible or customer-specific issues, location, flexibility to work non- standard hours and adaptability.

These four criteria components (QCDS) are not weighted equally. The lesser bargaining powers of SMME's, due to their smaller size, have forced SMME's to operate within a quality management system that will enable them, to access the outsourced market. Similarly, Milakovich (2006:9) states that in-sourcing, outsourcing and factory-less enterprises has dominated the global economy which has prompted the expansion of quality management systems. He is also of the opinion that the global outsourcing trend is likely to continue into the future.

Evans (2008:191-192) argues that, when supplier performance can be measured and certified, appraisal cost can be almost eliminated because incoming material can be "ship-direct-to-stock". These suppliers would be required to be defect-free for at least two years and meet all requirements specified on purchase orders. Similarly, Hughs (2009:60) cites that suppliers need to be reviewed regularly to establish their impact on the organisations' quality.

Outsourcing has both benefits and risks for SMME's but can be a viable option. One benefit is that it would create opportunities for increased linkages between businesses. These business linkages would improve SMME sustainability (Evans: 2008:46).

2.15 Quality and performance excellence

Quality is defined in many ways. Some quality professionals think of quality as superiority or excellence of a product or service, others view it as a lack of manufacturing or service defects, still others think of quality as related to product features or price (Juran, 1992: 24). A study that asked managers of 86 companies to define quality produced different responses, including:

1. Perfection;
2. Consistency;
3. eliminating waste;
4. speed of delivery;
5. compliance with policies and procedures;
6. providing a good usable product;
7. doing it right the first time; and
8. delighting or pleasing customers (Juran, 1994:54).

Evans (2008:7) recommends that quality should not focus solely on the goods or service that the organization produces or provides. It should also be embedded in management practices and should be the underlying value on how an organisation is managed. The increasing aggressiveness and volume of global competition, together with fluctuations in business cycles throughout both national and

international markets and the speed of changes in manufacturing, product development and marketing, has seen quality become the standard for world-wide business (Donaldson, 2006:42). This attitude towards quality in the workplace has been formerly adopted in the Quality Manifesto (1986:14-15) which states that quality is more than a business strategy. Quality is a personal responsibility and part of a cultural heritage that should be a source of national pride. The manifesto concludes that quality is an attitude formulated in boardrooms and visible on factory floors and over service counters.

2.16 The ISO 9000 series

The ISO 9000-9004 series officially came into existence in 1987 when the five following documents were published by the International Organisation for Standardisation in Geneva:

1. ISO 9000-1, Quality Management and Quality Assurance Standards: Guidelines for selection and use;
2. ISO 9001, Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation, and servicing;
3. ISO 9002, Quality Systems – Model for Quality Assurance in Production and Installation;
4. ISO 9003, Quality Systems – Model for Quality Assurance in Final Inspection and Test; and
5. ISO 9004 -1, Quality Management and Quality System Elements Guidelines (Tricker, 2001:10-13).

ISO 9001:2000 and ISO 9004:2000 are referred to as the consistent pair. The aim of the consistent pair is to relate modern quality management to the processes and activities of an organisation, including the promotion of continual improvement, and achievement of customer satisfaction. Furthermore, it suggests that the ISO 9000 standards have global applicability (Goetsche and Davis, 2002:312).

2.17 Rationale for ISO 9000 certification

Why would an organisation voluntarily take on the work and expense of certification to ISO 9000? Goetsche and Davis (2002:9) investigated the rationale for adoption of Quality Management systems (QMS's) like ISO 9000 and total quality management

(TQM) by organisations and found that survival, “keeping our customers”, was the single most important reason. They also found that if an organisation sought registration merely to use in its advertising, the ISO 9000 QMS would not change the quality culture of that organization which would result in the failure of the ISO 9000 QMS and probably the failure of that business. Goetsche and Davis (2002:315) state that gaining a marketing advantage is the wrong motivation for adopting ISO 9000. They found that customer pressure was more of a legitimate motivation as those organisations were in a do-or-die situation. Thus, they fully embraced the ISO 9000 QMS within their workplace. Similarly Milakovich (2006:35) states that organisations who implement a QMS do so not only to satisfy customers or gain market share but more so as a survival strategy. However, for most organisations, the rationale for implementing ISO 9000 should include one or more of the following:

- To improve product or service quality, or the consistency of quality;
- to improve customer satisfaction;
- to improve competitive posture;
- to improve organisational performance through better management of processes and resources; or
- to have a quality management system that will be recognised by customers world-wide (Goetsche and Davis, 2002:9&317).

Many organisations had to embrace a QMS or cease to exist because their competitors were so much more efficient (Milakovich, 2006:34). Evans (2008: 100) states that organisations are not to be forced to implement the ISO 9000 QMS, but, in the USA, customer pressure was a major impetus for certification of this QMS. He further states that the ISO 9000 provided a set of good basic practices for initiating a quality system, and was an excellent starting point for companies with no formal quality assurance programme. Tricker (2005:23) concurs and lists the benefits of the ISO 9001 series as:

- its ease of use and understandability;
- its applicability to all product categories, regardless of sector and/or size of an organisation;
- it is capable of being used with other management systems like ISO 14000; and

- it requires less documentation than other QMS's.

For organisations in the early stages of adopting a culture of quality within the workplace, the ISO 9001 QMS enforces standards and discipline of control that is necessary before the company can go to the next level of continuous improvement. The requirements of periodic audits reinforce the stated quality system until it becomes ingrained in the company.

Not all of the pressure is coming from customers. Increasingly, organisations are beginning to understand that a sound QMS, such as ISO 9001, is a viable approach to becoming and remaining competitive. The market place is rapidly approaching the point when a recognised QMS will become the "admission ticket" to doing business. As more and more organisations are being certified by ISO 9001 auditors, the economic pressure on non-certified organisations can only increase (Goetsche and Davis, 2002:285-286).

2.18 ISO 9001: 2000 quality management system

Trends of globalisation and outsourcing have led to the growing demand for assurance of quality before contracts are awarded. In order to access the European Union (EU), Japanese and American market place, it is necessary to establish a single quality management system that satisfied the requirements of:

- The United Kingdom with its British Standards Institution (BSI);
- Germany with its Deutsch Institut fur Normung (DIN);
- France with its Association Francais de Normalisation (AFNOR);
- America with its American National Standard Institute (ANSI); and
- Canada with its Canadian Standards Association (CSA).

During the 1980s and 1990s, multinationals in the automotive sector tried to create a global homogeneous market. They had to transfer to various parts of the world not only their technologies, management style, and culture but also the quality principles associated with these technologies. One manifestation of this attempt to globalize quality management principles has been the ISO 9000 series of quality standards. A United Nations Agency was established, with representatives from more than 90 countries, to develop an internationally accepted quality management system that

addressed quality control and quality assurance. The International Standards Organisation (ISO) 9001:2000 quality standard was developed for this purpose in 1987. The ISO 9000 series has been improved several times since, to enable it to be comprehensive, compatible with other ISO standards, yet user friendly for all business types and sizes (Tricker, 2001:3:35).

The most recent revision of the ISO 9001 standard was completed and published for use in November 2008 and is referred to as ISO 9001:2008. The changes affected the wording but not the structure of the previous version and are not relevant for this study.

2.19 The value of standards

The material and socioeconomic costs associated with the lack of standardisation was clearly demonstrated during the Chicago fire of 1871 when fire engines from other cities, which had come to provide assistance, could not connect to the fire hydrants because of a difference in screw threads.

According to Lamprecht (2000:114-148), the emergence of the international standardisation movement during the 1920s could be directly attributed to:

- the continued evolution and growth of mass markets;
- the mass production and mass distribution system that developed to satisfy the ever increasing demands of mass consumption, which, in turn, influenced the need to constantly improve rapid manufacturing; and
- the growth of international trade that followed the World War I and II.

Shibutani (1966:182) cites that “the survival of an idea depends on its continued utility.” Goetsche and Davis (2002:58) extend on the work of Shibutani, and state that leading and operating an organisation successfully requires managing it in a systematic and visible manner and that success results from implementing and maintaining a management system that is designed to continually improve the effectiveness and efficiency of the organisation’s performance by considering the needs of the interested parties.

Table 2.4 illustrates the continuous changes in mindset and organisational values as quality becomes imbedded in an organisation.

Table 2.4 A comparative analysis of organisational values before and after the implementation of a QMS

Before	After
Hierarchical, that is, top-down management style and organisational structure	Flatter management style, participatory organisational structure
Centralised command and control structure	Decentralised and empowered workforce
Productivity vs. quality mentality	Product gains are achieved through quality
Separate data systems	Integrated data systems
Blame workers for poor quality	Management is responsible
Quality achieved through inspection	Quality is built into systems and processes
Supplier relationships are short-term and cost-oriented	Supplier relationships are long-term and quality-oriented
People are viewed as variable costs and replaceable	People are viewed as assets for their contributions to the organisation
Training is external to the mission of the organisation	Training is integrated with quality and productivity goals
External definition of quality standards	Quality is measured by customer needs and process improvements
Quality is measured by degree of conformance to standards	Quality reflects continuous improvement and user satisfaction

Source: Milakovich (2006:40)

Achieving ISO 9000 registration does not guarantee world-class competitiveness because standards, by definition, can only provide minimum requirements but standards do increase the level of consistency of the product.

2.20 Trade policy under apartheid

During the 1920's, South Africa was one of the first countries to explicitly adopt the import substitution model as a vehicle for industrialisation. Moss Gas and Sasol were built to reduce the dependence of South Africa on import of products such as liquid fuels. This protection discouraged export growth and diversification. By the 1970's, South Africa was exceedingly dependent on gold as a source of foreign exchange. Gold was the key to holding the apartheid economy together (Draper and Alves, 2009:88-89). The Reynders Commission of Enquiry in 1972 emphasized the need to diversify into non-gold exports through export promotion methods. Joint research studies by the Organization for Economic Co-operation and Development (OECD), the National Bureau for Economic Research and the World Bank suggested that countries with more liberal trade policies had more open economies and grew faster than those with more protectionist policies. Protection levels in 1994 were high but South Africa under apartheid had been progressively moving from an import substitution industrialization model to one focused on export promotion (Draper and Alves. 2009:90).

2.21 Trade and investment in post-apartheid South Africa

South Africa has undergone significant changes in trade and industrial policy focus since the 1980's. The vision for Africa under the African National Congress (ANC) is of openness, sustainable international competiveness and deeper integration into the global economy. The post-apartheid government is focused on a developmental approach which is characterised by increased global integration that has less regulatory constraints to economic policymaking. Liberalisation, deregulation and selective privatisation are all key elements of attaining those goals (Sibiya, 2006:18).

The Competitions Act and Competition Authority were developed to reshape and strengthen institutions and regulatory frameworks governing economic activity. The results of this policy shift have been mixed. Export performance has improved since 1994 but its contribution to Gross Domestic Product (GDP), growth and job creation has fallen short of expectation. Draper and Alves (2009:39) suggest that the trade policy should be coupled strongly with competition friendly measures to improve the domestic business climate. They also suggest that, to increase investment and

growth, reduce unemployment and poverty, the manufacturing sector needs to improve the tradable sectors. Calculations done by the World Bank and Angus Madison in 2000 revealed that protectionism and high restriction on cross-border movement of products and workers had damaged developing countries' growth prospects. Developed countries had far lower tariff restrictions than developing countries (refer Table 2. 5).

Annexure Table A1 (World ranking in ease of doing business, 2006) ranks the worlds developing economies with eleven key indicators. The countries are ranked by the numbers which correspond to each country's aggregate on the ease of doing business. The remaining ten key indicators or topics comprise the overall ranking.

Table 2.5 compares growth prospects among developing countries that have significantly reduced tariff protection

Table 2.5 A comparative analysis of the growth prospect for developing countries with high-tariff protection policies versus those with low-tariff protection policies

Developing countries	Number	Total population	GDP	Tariff protection	Reduction in Poverty (key indicator)
More globalized	25	3 billion	Massive growth	Big cuts in tariff protection	Dramatic reduction
Less globalised	50	1.5 billion	Stagnant growth	Modest cuts in tariff protection	Stagnant to modest reduction

Source: Draper and Alves (2009:12)

The General Agreement on Tariff and Trade in 1993 provide evidence that there is a discernible shift towards openness and global integration by the new South African government but small business did not benefit from this shift until early 2004. The

economic reform agenda turned to focus on microeconomic problems and the need to modernise the informal sector. More emphasis was placed on integrating the second economy with its more developed counterpart in an effort to address poverty and unemployment. To modernise the informal sector would require improved targeted support of skills, the upgrading of standards, tax incentives and the support of supply-chain linkage (Draper and Alves, 2009:74-75).

Investing in South Africa has become much easier than 20 years ago. This enabled the country to capitalise on the Afro-pessimism that existed in the developing world. Where developed countries were sceptical to invest in other African countries, South Africa became the favourable African investment destination (Ebersohn, 2006:15).

Trade and Investment KwaZulu-Natal (DTI) are a provincial trade and inward investment agency that has partnered with the provincial government to promote the province as a world class business investment destination. Due to this partnership, several agreements and trade pacts have been established to increase international trade. These include the African Growth and Opportunity Act (or Agoa). This act provides opportunities for the manufacturing and agricultural sector to access the United States (US) market on a duty and quota-free basis on approved products. A dormant *Memorandum of Understanding* with Shanghai, signed in 2001, has been reactivated and has been redefined to focus on current priorities of KwaZulu-Natal. KwaZulu-Natal's Department of Economic Development has led trade and investment missions with a view of establishing partnerships and joint ventures with leading countries like: the Gulf region, Brazil, France, Germany, Le Reunion Island, Bahrain, Korea, Japan, Singapore, Sri Lanka, Italy, Belgium, India, China and Bavaria. The eThekwini Municipality has signed a memorandum of understanding with the Confederation of Indian Industries (CII). This memorandum was aimed at assisting and empowering SMME's in the manufacturing sector in the eThekwini municipal area (Department of Trade and Investment KwaZulu-Natal, 2009:18).

2.22 The city of Durban in KwaZulu-Natal

KwaZulu-Natal is home to South Africa's second largest economy, emerging as a major hub of industrial development in sub-Saharan Africa. This emerging province is strategically situated on the east coast with access to South Africa's two largest

deep water ports, namely, Durban and Richards Bay. Durban is the largest city in KZN and lies within the eThekwini municipal area. This city has a substantial labour pool and world- class transport infrastructure.

KwaZulu-Natal is based on the coexistence of two economies, the highly advanced first economy and a survivalist second economy. With international recognition and regional prosperity as the goals, stakeholders have the vision of this becoming a thriving, empowered and globally competitive economy. In line with the national Industrial Policy Framework, government is intensifying the implementation of customized measures in sectors to facilitate investment in business process outsourcing (Department of Trade and Investment KwaZulu-Natal, 2009:16-20).

2.23 Assistance for smaller organisations in setting up quality management systems

The UK government published a White Paper entitled' "Standards, Quality and International Competitiveness" via its National Quality campaign. The aim of this campaign was to bring awareness of quality through the application of modern quality management techniques. The UK government's Department of Trade and Industry (DTI) formed part of this campaign. The National Information Centre (NQIC), in conjunction with DTI, provides information on standards, training courses and how to improve quality in small and medium enterprises (SME) activities. Most SME's in the UK seem to be either unwilling or unable to implement the procedures required to achieve certification to the ISO 9001 series. Thus the British Standards Institution (BSI), in 1994, launched a low-cost no-fuss BSI/QA Small Business Service. The American Society for Quality (ASQ), together with the American Society Testing and Materials (ASTM), are responsible for quality management systems, standards and quality statistics. The ASQ provides guidelines for selection, implementation and development of the most appropriate QMS for all organisations (Tricker, 2004:69-71).

The South African government, through the DTI, have established programmes to support SMME's, but these programmes are not specifically focused on mentoring SMME's on QMS.

2.24 Conclusion

Chapter two presented literature on the rationale for implementing a quality management system, like ISO 9001, as a strategic decision by management to better position SMME's in the highly competitive and global market in which they trade. The history of quality and the pioneering efforts of Dr Joseph Juran and Dr Edward Deming, in the rebuilding of Japan's economy, are highlighted in this chapter. The literature provides evidence of the global growth and acceptance of quality management systems in the workplace.

In view of the literature presented a QMS such as ISO 9001 is beneficial to organisations yet SMME's are not benefiting from this knowledge. This study aims to identify the obstacles preventing SMME's from implementing the ISO 9001 QMS and whether they perceive that this QMS will contribute to their growth.

Chapter three covers the research methodology followed in this study.

Chapter Three- Research Methodology

3.1 Introduction

This research proposes to identify the effectiveness of the ISO 9001 quality management system for SMME's. The previous chapter established the literature of this study. In this chapter, the methodology used to conduct the research for this study is discussed. The primary research method, sampling, data collection, data analysis and the reliability as well as the validity of the data are also presented.

3.4 The importance of research

Lategan (2009:12) states that knowledge production is not an end in itself. Instead, science should contribute to a better society and should complement and impact on business, industry, government and society at large. Furthermore, he states that the most ambitious task is to bring scientific, critical and rational thinking as well as the implementation of enlightened ideas to society. His definition of enlightenment is that it enables people to willingly draw conclusions on their own and to act according to rational conclusions. Lategan (2009:20) lists a few reasons for transferring knowledge:

- Normative reasons, which go back to the organisation and individual's ethical motives;
- The classic university mission, to do research and create knowledge;
- The paradigm that knowledge creates and allows for better decisions and a better society;
- The contribution to sustainable development, which in turn, increases the quality of life and the chance to preserve human culture for forthcoming generations;
- To satisfy the customer as the market competition increases;
- Pragmatic reasons: from creating income to increasing the individual or corporate reputation; and
- The impact on society is the ultimate reason for research.

The purpose of this study is to transfer knowledge to SMME's so that a QMS like ISO 9001 will allow them to make better decisions, contribute to their sustainable development and, ultimately, satisfy the customer as the market competition increase.

3.3 The differences between qualitative research and quantitative research

The terms 'qualitative' and 'quantitative' refer to the type of data generated in the research process. Quantitative methods produce data in the form of numbers, that can be aggregated and analysed to describe and predict relationships, while qualitative research generates data in text form to help explain those relationships, and to explain contextual differences in their quality (Holland and Campbell, 2005:1-7).

This study was undertaken with the objective of measuring and evaluating the perceptions that SMME's in the Greater Durban Area have of the value of the ISO 9001 QMS. For this purpose, the qualitative research approach was used because a deductive research project will help to add more detail through the comparative studies of two different sample populations. A comparative design technique was used for this study. Richards and Morse (2007:90) elaborate on this type of technique and state that a two-group design could be used when the research question wishes to determine what is special about a group or to identify particular conditions or circumstances in that group.

3.4. Surveys

A survey yields reliable results when it involves asking a series of formal questions which are not regarded as too private, sensitive or threatening by the selected people, recording their responses and then analysing them. It also aims to give systematic, representative and reliable information about a particular set of people, called the research population (Pratt and Loizos, 1992:58-59). A survey will thus form the primary research method for this research project as it best suits this research project.

3.5 The target population

Welman and Kruger (2005:52) define a population as the total collection of objects of study to which the researcher wishes to make specific conclusions. Kent (2001:52) concurs with Welman and Kruger but extends on the definition to include:

- The specification of the type of case which should be the focus of the research;
- the geographical extent or location of the study; and
- the time frame involved.

The criteria for the target population for this study is SMME's in the Greater Durban Area who have implemented the ISO 9001 QMS in the last five years and SMME's who have not, but are aware of ISO 9001. This population profile originates from the database of the South African Bureau of Standards (SABS). The SABS certifies and monitors SMME's that have been ISO 9001 certified. These SMME's are subject to evaluation audits annually to maintain their certification status. This sample is thus representative, according to Holland and Campbell (2005:35-39), and also satisfies Barahona and Levy (2002:50) who argue that variability is as equally important as representativeness. The population of the group that had no formal QMS implemented within their organisations also come from the database of the SABS. It represents those SMME's within the Greater Durban Area that have made enquiry into the ISO 9001 QMS. The researcher approached the marketing manager of SABS KZN office in Mayville, Durban to assist with the selection of the research population that would satisfy the research project as well as enhance the validity of the sample. A list of both certified and potential clients were forwarded to the researcher

3.6. Sampling and sample frame

Kent (2001:52) states that a population may be adequately specified but the total set of cases may still need to be identified. He suggests that one or more list or frames be used. The total sample for this research project was determined from the whole population and consisted of 40 SMME's made up of two frames, 20 SMME's which

have been ISO 9001 certified (have the control/case) and 20 who have no ISO certification. This selection is based on two criteria:

- the number of SMME's that have implemented ISO 9001 in the last five years; and
- the radius in which the researcher will conduct interviews is confined to the Greater Durban Area (see Figure 3.1).

The major industrial hubs of Greater Durban are located in the north as far as Umhlanga, west as far as Pinetown and south as far as Isipingo. The study will not be confined to any specific industry or sector within the Greater Durban Area.

3.6.1 Limitations

The limitations for this study are:

- This study is confined to the Greater Durban area;
- The limited number of SMME's that meet this study's criteria; and.
- The population list received from SABS was more than 18 months old and not pre-screened for size, foreclosure, change in function and relocation of SMME's who are not ISO certified.

Figure 3.1: Greater Durban Area

Source: eThekwinin Municipality demarcation for 2010

3.6.2 The sampling technique

Holland and Campbell (2005:10) suggest that when choosing research sites (geographical communities) and research units (population groups), probability – based selection or random sampling be used, because it gives an equal chance of selection to all sites and all people.

In participatory research, however, it may not be desirable to select sites and groups randomly because these sites and communities are often identified not because they are representative of a particular population profile, but because they are engaged in a particular project, programme or policy process. In these instances, purpose selection sampling is used. This type of sampling is not random and is, therefore, potentially biased and unrepresentative. The researcher must then acknowledge that the lack of randomization has implications for the validity of the data (Holland and Campbell, 2005:22-25).

In this study the cluster sampling technique was used for the selection of SMME's that have been ISO 9001 certified. This method of sampling allowed for fewer locations to be visited because the first sample was drawn from pre-existing, heterogeneous groups, called clusters. The advantage of cluster sampling is that there is a considerable saving in time and costs (Welman and Kruger, 2005:65-66). Random stratified sampling was used for the selection of the sample size for SMME's that have not implemented the ISO 9001 QMS. This was because this population list was larger as compared to the population size of those SMME's that are ISO 9001 certified within the Greater Durban Area.

3.6.3 Sampling validity: Achieving representativeness with qualitative data

Holland and Campbell, (2005:35-39) define data as being representative or externally valid if a presumed causal relationship can be generalized across different types of persons, settings and times. They argue that achieving representativeness in qualitative research is difficult because of the type of data generated, which is usually contextual and suggest that to increase representativeness, and therefore usefulness of the data, sampling protocol should be large because it would produce reasonably generalised inferences that are representative of the population of interest.

Barahona and Levy (2002:46) argue that variability within a population is more important than population size in determining sample size. Due to various constraints, it may not be possible to conduct in-depth research in sufficient sites.

3.7 Data analysis and coding

The qualitative researcher collects descriptive material such as personal experiences, introspection, life stories, artifacts, interviews, cultural text and productions. There are many sources and numerous techniques. Qualitative research is time consuming and the data complex. Computer-aided qualitative data analysis software like, NVivo or SPSS, is available to assist the researcher during the data analysis process of the research project. All major qualitative methods use coding techniques to organise the vast amount of data which is frequently collected during qualitative research. Coding is the process of focusing a mass amount of free-form data with the goal of empirically finding answers to research questions.

Coding progresses from unsorted data to the development of more refined categories, themes and concepts. This is done by identifying and describing the most important information and physical objects, which must be labeled for future reference (Denzin and Lincoln, 2008:4-14).

The study gathered data via interviews and used coding techniques to reduce the data. Descriptive statistics using the Statistical Package for the Social Sciences (SPSS) version (18) software was used to analysis this data to establish the impact and perceptions managers of SMME's have on quality management systems.

Figure 3.2 is a graphical representation of the coding process.

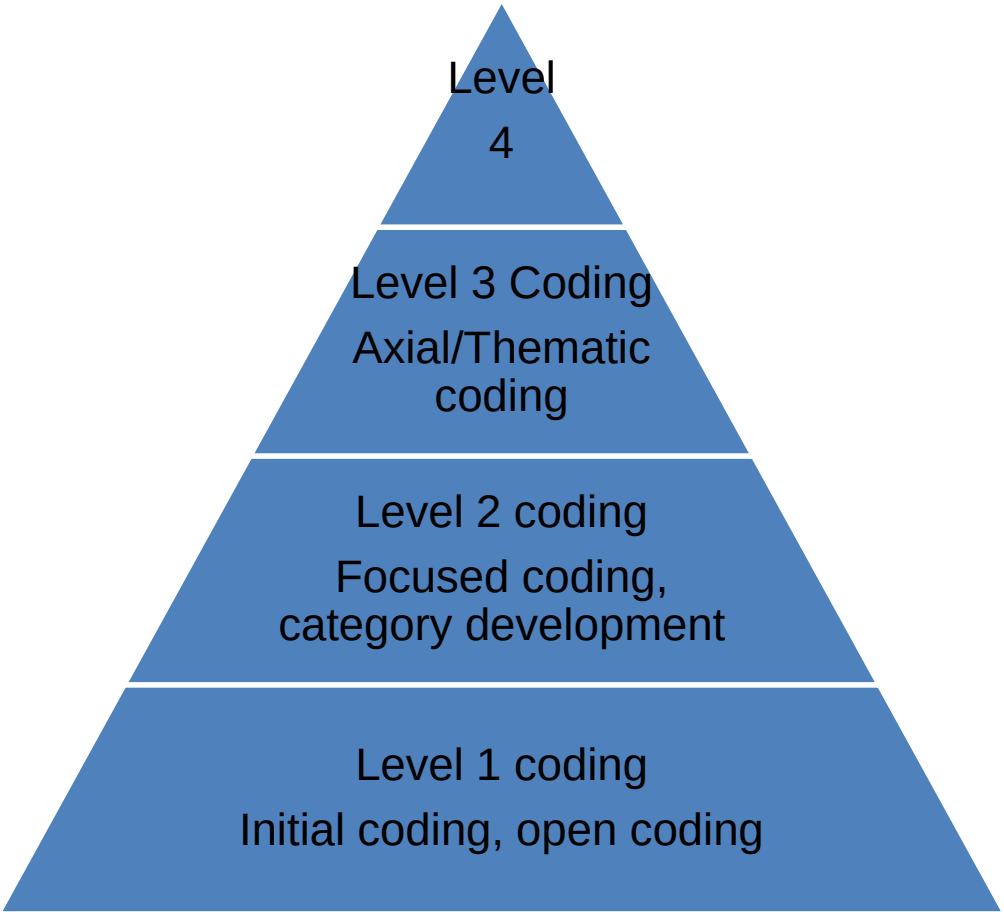


Figure 3.2: The levels of coding

Source: Robson (2002:118)

3.7.1 Level 1 coding

This is the first stage commonly called initial or open coding. Here useful information is extracted from the material. Hence qualitative data is significantly reduced (Robson 2000:118-119).

3.7.2 Level 2 coding

Commonly called focused coding or category development. The data is further refined. Baxter, Hughes and Tight (2006:43) concur and extend on Robson's explanation of level 2 coding by adding that this level of coding reduces data like ages, locations or attitudes into categories of a limited number of groups. Each group is signed its own numerical identity, such as '1', '2' and '3,' replacing age categories 21, 21-64 and 65 and over, respectively.

3.7.3 Level 3 coding

Known as axial or thematic coding, finely focuses data using the progressive convergence of ideas from level 2 as the basis of enquiry. It is at this stage of coding that data is refined enough to be used in reports and publications. Robson (2002:118) states that themes are established at this level of coding.

3.7.4 Level 4 coding (theoretical development)

This level of coding is seldom used by qualitative researchers. This is because it re-examines previously discovered categories and themes which may emerge as additional theories (Holland and Campbell, 2005: 6-7).

For this study, levels 1 to 3 coding is being used for sorting the data. Robson (2002:119) suggests that coding be done by the researcher and not a statistical analyst because the researcher's perception and judgment play a central role in the coding process.

3.8 Data reliability and validity

Reliability is concerned with the findings of the research and relates to the credibility of the findings. Welman, Kruger, et al. (2005:145) states that, "if a research finding

can be repeated, it is reliable". In this study the Cronbach Alpha Test was used to test the reliability of the survey questionnaire.

Validity defines the reliability of information in natural sciences and economics as the extent to which each repetition of the same instruments will yield similar measurements. Pratt and Loizos (1992:32) concur that the key principle of validation is to cross check the different perceptions of different observers about the same fact. A set of criteria has been established against which observers can judge findings from qualitative research. These are credibility, transferability, dependability and conformability.

3.8.1 Credibility

Credibility refers to confidence in how well data and processes of analysis address the intended focus (Polit and Hungler, 2001:715). According to Johnson (2008:100-101), credibility (for internal validity) can be enhanced by:

- Prolonged engagement: investing sufficient time to provide scope for the study by learning context and culture, testing for misinformation and building trust;
- Persistent observation: providing depth to the study by identifying the elements in the situation that are most relevant;
- Triangulation: cross-checking information by use of multiple and different sources, methods, investigators and theories;
- Peer debriefing: exposing researchers to disinterested peers in order to probe biases and explore meanings;
- Negative case analysis: continuously revising hypothesis until it accounts for all known cases;
- Referential adequacy: archiving data for future reference; and
- Member checks: testing interpretations and conclusions with members of those stakeholder groups from whom data were originally collected.

3.8.2 Transferability

Transferability refers to the extent to which the findings can be transferred to other settings or groups. Polit and Hungler (2001:717) state that to facilitate transferability,

it is valuable to give a clear and distinct description of culture and context, selection and characteristics of participants, data collection and process of analysis.

3.8.3 Dependability

Another aspect of trustworthiness is dependability. According to Lincoln and Guba (1990:299), dependability seeks means for taking into account both factors of instability and factors of phenomenal or design induced changes, that is, the degree to which data changes over time and alterations made in the researcher's decisions during the analysis process. Dependability (for reliability in qualitative research) can be enhanced by triangulation and step-wise replication (parallel investigations) by research teams.

3.8.4 Confirmability

Confirmability (for objectivity) can be enhanced through research journals, triangulation and confirmabilty audits (Holland and Campbell, 2005:8). The researcher's prolonged engagement with the subject matter will establish data credibility. The use of international research journals, which document the impact of quality management systems on SMME's, will establish confirmability of this project's data.

3.9 The research questions

Robson (2002:16) states that the research questions form the foundation of what is being analysed, discussed and reported on. Mason (2008:19) agrees that research questions form the "backbone" of research design and supports the project that develops around it. According to Campbell (2005:34), research questions are meant to enable research and to give it focus, while allowing it to retain flexibility to deal with unexpected occurrences. Research questions must be clear and unambiguous.

The quantitative versus the qualitative approach to generating knowledge leads to the formulation of different types of questions (Table 3.1).

Table 3.1 The quantitative versus qualitative approach

Inductive research	Deductive research
Qualitative (inductive research)	Quantitative (deductive research)
Open-ended questions	Closed questions
Circular	Linear
Iterative: generating and continually testing working hypotheses	One-off testing hypotheses
Rooted in lived experience	Theory based
Flexible, changing design	Fixed, Static design
Knowledge-generating	Fact orientated
Participatory	Top -down

Source: Campbell (2005:289)

Deductive research is fixed within a theoretical framework, reliant more on quantitative data in its assessment of hypotheses, and follows a fixed path from initial point of enquiry to final conclusions. In contrast, the inductive method is more reliant on a qualitative set of data. It is open-ended; the research is more iterative in approach and is more rooted in lived experiences. This makes it more reliant on the context being studied for its conclusions and theories that emerge (Campbell, 2005:28-29). This study used the inductive method to obtain data.

3.10 Interviews

The interview is a widely used method in small-scale evaluations. It comes in many different forms but, typically, it takes place in a face-to-face situation between interviewer and interviewee. Baxter, Hughes and Tight (2007:172) are of the opinion that the interview is a very useful technique for collecting data. There are three broad styles of conducting interviews: the informal, semi- structured and structured interview.

3.10.1 Informal Interviews

Informal interviews require the researcher to observe the workplace closely and to use the opportunities that arise to have brief discussions with staff, managers or clients. This type of interview method is associated with unstructured interviews.

3.10.2 Unstructured Interviews

According to Richards and Morse (2007:113), the unstructured interview is the most common type of interview but requires considerable skills to prevent the interviewer straying from the task of gathering information relevant to the evaluation and to refrain from counseling on personal or professional problems. The researcher should have vast experience and training in this type of interview method.

3.10.3 In-depth interviews

In-depth interviews offer the researcher a broad, holistic understanding of the impact of the focus of study at business, household, individual, community and market level. Respondents will talk about the direct impact of participation on their own business activities and income. Appropriate probing could encourage respondents to talk about their perceptions and attitudes regarding the subject matter. The open-ended approach is important because reliability depends, in part, on the consistency of respondents' explanations as to why certain things impact more than others. There also exists scope for combining in-depth interviews with quantitative survey-based work. Open and closed questions can be combined sequentially in a single interview schedule, but the drawback of this is the resulting length of the interview (Campbell, 2005:60-61).

3.10.4 Structured interviews

Structured interviews use a fixed sequence of predetermined questions and are essentially the same as a self-completion questionnaire with yes, no, or a choice from a fixed set of alternative answers (Robson, 2000:89-90).

According to Hahn (2008:73) taking notes during an interview is not recommended because the researcher's focus is split on listening to the respondent while rapidly writing verbatim what is being said. He suggests the use of either an audio or video recorder to capture the interview. He further strongly recommends that this data be

backed up by using two different types of media, for example, digital and analog in the form of cassettes.

This study used a cell phone and an MP3 player to capture the interview because the digital recording will allow the files to be backed-up, e-mailed and edited easily. The questionnaire schedule combined open and closed questions with a short survey in a single interview.

3.10.5 Semi- structured Interviews

Richards and Morse (2007:114) suggests that when the researcher is acquainted with the phenomenon or the domain of enquiry, pre-planned questions may be used. Semi-structured interviews allow the researcher to work out in advance the main areas to be covered. This gives the researcher greater freedom to vary the exact wording of questions as well as their order. The researcher can also ask relevant questions on his/her list of topics, thus facilitating the flow of the interview. Robson (2000:87) suggests that because of the flexibility of the semi-structured interview makes it the most appropriate type of interview for small scale evaluations especially when the sample population is small. This research project employed the semi-structured interview method with face-to-face interviewing. A predetermined set of questions were prepared to ensure that all the relevant information was obtained from that interview.

3.11 The questionnaire schedule

Campbell (2005:65) suggests that the first element of the structure is to start with more general questions and then move onto those that relate directly to the research matter. Robson (2002:85) concurs and states that the researcher starts with asking the respondents about their first hand experiences, like what they have done, their current situations, as well as their feelings and perceptions. If necessary, the interviewee may also be asked pre-set, probing questions to ensure that the respondent's narrative account covers all the key aspects of the impact of QMS in SMME's. The questionnaire schedule will be comprised of three sections (A, B and C), two of which were closed-ended and one open-ended section. Section A (open) started with a generative question like: How did you get to know of the ISO 9001 QMS? Section B (closed) assessed provincial conditions influencing entrepreneurial

activity in KwaZulu- Natal. This section has been sourced from http://www.journals.co.za/ej/ejour-acom.html. Section C (closed) collected basic information about the identity of the respondents, their level of education and the position they held in the organisation (see Annexure C).

3.12 Pilot work

Baxter, Hughes and Tight (2007:137) defined piloting as the process whereby the researcher first tries out the research techniques and methods which he/she has in mind, to see how well they work in practice. If necessary, the plans may be modified accordingly. Pilot work is invaluable to research projects. Often things do not work out the way the researcher envisages and this test run allows the researcher to anticipate the effectiveness or otherwise of his/her choice of research methodology. Pilot work was included in this research project.

3.12.1 The pilot study

A pilot study was conducted to test the following:

- logistics of setting up of the interviews;
- the main study schedule ;
- clarity of the questions;
- flow of the interview; and
- length of the interview.

The questionnaire was tested on four respondents, namely, two SMME's who had ISO 9001 certification and two who had none. The four respondents were selected randomly from the population lists provided by the SABS. They were first contacted telephonically to evaluate their eligibility for this study. Once evaluated, an appropriate e-mail address was sourced. A consent e-mail was sent and required a response (see Annexure D). A follow-up call was made to confirm that the e-mail was received. This allowed the researcher to clarify and resolve any apprehensions the respondents might have had to agreeing to an interview. This call proved to be most beneficial as it seemed to encourage the respondents and they became more willing to participate in the study. An appropriate time and date was selected, based on the availability of the respondents.

3.12.2 What was learnt from the pilot study

The pilot study gave indications that the population list received from SABS was older than three years. It was found that some organisations had successfully implemented the QMS and had received certification in the last few years. This discovery thus reduced the population of organizations in the Greater Durban Area who had no ISO 9001 certification. The researcher further established that the duration of the interview did not exceed 30 minutes. The respondents gave no verbal or body language indicating that the interview was too long. Thus, the length of the interview did not pose a problem for the main study. A few changes were made to improve the flow of the interview.

3.13 Ethics

Key issues a researcher should consider when collecting data for a project are: access and ethics. These issues are concerned with the data the researcher will be collecting, how the researcher will get access to it and how this data will be used. For qualitative research methods, ethical issues like privacy, informed consent, anonymity, secrecy and truthfulness become crucial because of the close relationship between researchers and respondents. It is important, therefore, for the researcher to exercise responsibility in the process of data collection, analysis and dissemination. Ethical research involves getting the informed consent of the participants in an agreement and keeping to that agreement (Baxter et al., 2006:154-158). For this study, each participant was informed via e-mail, fax, sms or telephonically of the nature of the research, the reason why they were selected to participate and the usefulness of the research. Once the participants agreed to take part in the research, a letter of consent was e-mailed or faxed to them to be filled out and returned. Also a suitable date and time were established for a face-to-face interview with the appropriate person of that SMME (refer to Annexure E for the letter of consent).

3.14 Access

Andrews (2005:204-5) states that researchers need to locate and identify suitable participants who would be willing to partake in social research. For this research project, the researcher approached the South African Bureau of Standards (SABS) and explained the rationale for doing this research project.

3.15 Conclusion

This chapter investigated and selected the qualitative research approach to investigate the impact a quality management system, like ISO 9001, has on SMME's in the Greater Durban Area. The semi-structured interview was the primary research method for this study. A target population was selected, based on the delimitations of this study. The qualitative data generated, was analysed using the SPSS software for coding. This chapter also focused on the validity of the study.

Chapter four will analyse the data gathered and present the results.

Chapter Four: Data analysis and discussion of results

4.1 Introduction

The previous chapter explained the methodology used in this study. This chapter will present the results that were obtained through the semi-structured interviews (Annexure B) with the aim of analysing, interpreting and discussing the data collected. The overall objective of the research undertaken in this study was to ascertain the perceptions of SMME's towards the ISO 9001 and to establish if it had contributed positively to their growth and sustainability. Descriptive statistics and inferential statistics were used to analyse Sections A, B and C of the questionnaire. The results were then presented in tabular and graphical formats with explanations.

4.2 Descriptive statistics

According to Welman, Kruger and Mitchell (2005:231), descriptive statistics refer to the summarising and grouping of data which is then presented in the form of tables and graphs.

4.3 Inferential statistics

Inferential statistics was used to test the reliability of section B (questionnaire). The data collected from the responses was analysed using the Statistical Package for Social Sciences (SPSS) version 18.0.

4.3.1 Reliability of questionnaire

The two most important aspects of precision are reliability and validity. Reliability is computed by taking several measurements on the same subjects. The relevant questions of the questionnaire were grouped into themes. The themes were tested for reliability using the Cronbach Alpha Coefficient. A reliability coefficient of 0.70 or higher is regarded as acceptable in most social science research situations (http://www.ats.ucla.edu/stat/Spss/faq/alpha.html, 05-10-09).

Inferential statistics were used to establish reliability of each theme in section B. The reliability scores are shown in table 4.1

Table 4.1 The Cronbach Alpha Test

Theme	Cronbach's Alpha
1	0.385
2	0.689
3	0.768
4	0.655
Overall	**0.624**

Due to the untested nature of the questionnaire, the overall reliability coefficient is lower than the recommended 0.7 value. For the most part, these were due to negative co-variances which some questions yielded. Three of the themes had Cronbach alpha values that exceeded or were close to the accepted value. The overall score is only slightly less than the minimum value.

4.3.2 Validity of the data

The triangulation technique was used to validate the data gathered. Leedy (2008:99) states that triangulation uses multiple sources of data with the hope that they converge to support a theory. Twenty-eight different sources of data were collected. This data converged to produce common themes and categories which supported the objectives of this study.

4.4 Response Rate

The target population was SMME's in the Greater Durban Area that had implemented the ISO 9001 QMS in the last five years and SMME's that had not, but were aware of ISO 9001. The total number of respondents that completed sections A, B and C of the questionnaire was 28. Table 4.2 illustrates the response rate for this study.

Table 4.2 Response rate of SMME's in the Greater Durban Area

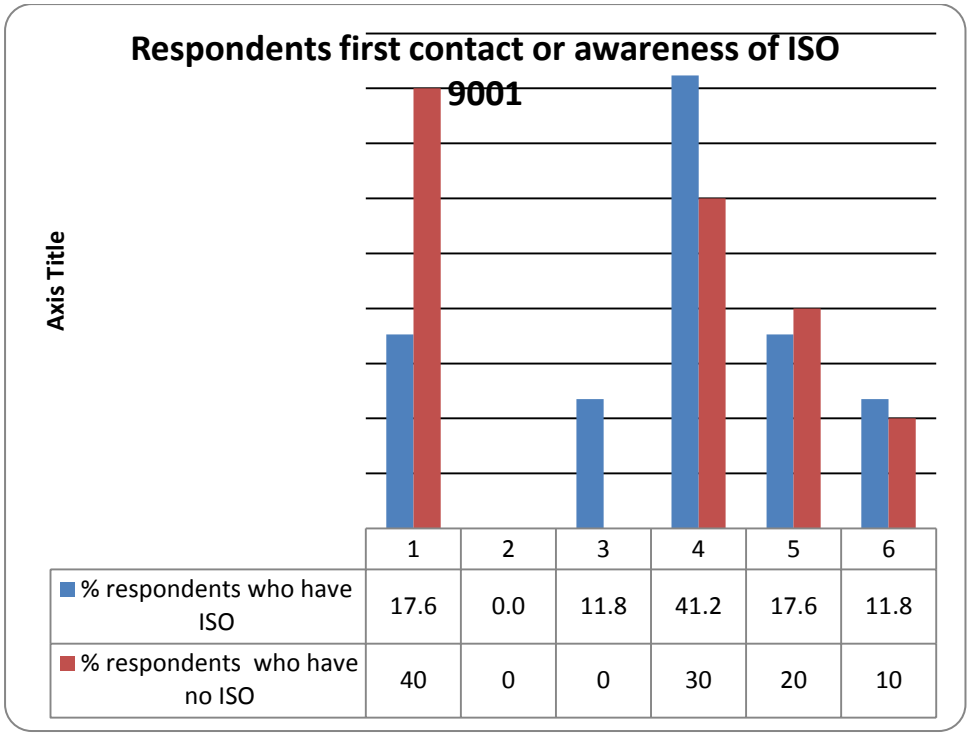
Respondents	Planned number of sample	Achieved number of respondents sample	Percentage response rate
SMME's with ISO 9001 certification (Group A)	20	18	90%
SMME's with no ISO 9001 certification (Group B)	20	10	50%

The response rate for SMME's that were ISO 9001 certified was 90% while the response rate for SMME's that were not ISO 9001 certified was 50%, as illustrated by Table 4.2. The low response rate for group B was due to the fact that many of these respondents had indicated that they had achieved ISO 9001 certification in the past 24 month period. Some were in the final audit stage of certification and others were overwhelmed with work and could not spare the time to participate in this study. Gillham (2005:166) cites that a questionnaire survey "plus 30 interviews (or thereabout) makes for a substantial piece of research."

4.5 Section A of the questionnaire

In section A of the questionnaire, face-to-face interviews with the respondents were recorded and coded to level two, as described in section 3.7 of the methodology.

4.5.1 Category (a): Establishes the level of awareness SMME's have of ISO 9001.



	1	2	3	4	5	6
% respondents who have ISO	17.6	0.0	11.8	41.2	17.6	11.8
% respondents who have no ISO	40	0	0	30	20	10

Figure 4.1 Areas contributing to ISO 9001 awareness

Key

1 - Imported knowledge from respondents previous employer

2 - Respondent had no previous contact or experience

3 -From the tendering process

4 - Made enquiries via internet, SABS, QMS consultants

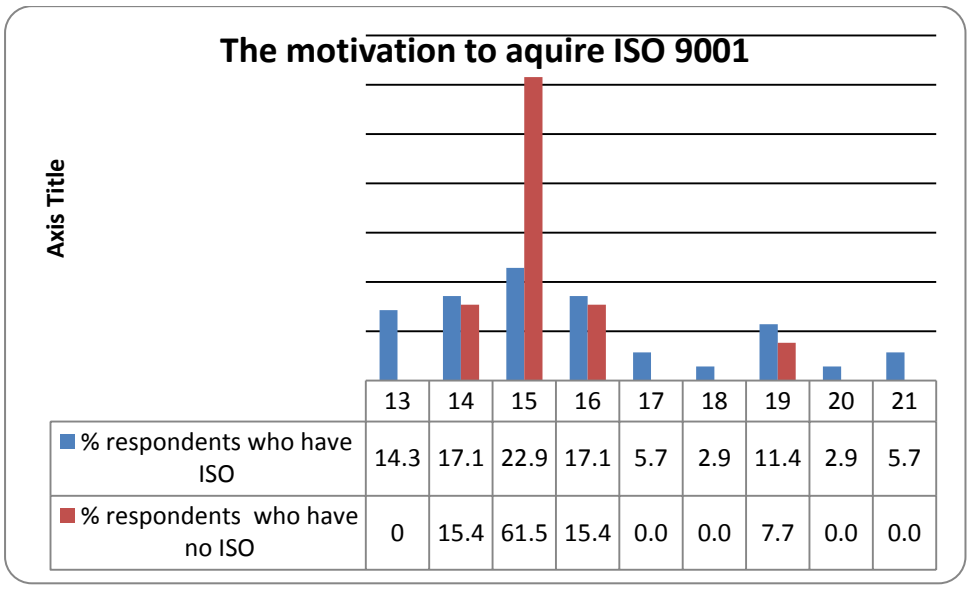
5 - ISO first contact in current employment

6 - Customers and suppliers

As reflected in Figure 4.1, 17.6% of respondents, who are ISO 9001 certified, had their first contact with ISO from their previous employers; 11.8% from the tendering process; 41.2% via internet, SABS or QMS consultants; 17.6% in their current employment; 11.8% from customers and suppliers and there were none with no previous knowledge or experience of ISO 9001. This data is compared with respondents who are not ISO 9001 certified and reflect that 40% had their first contact with ISO from their previous employers; 0% from the tendering process; 30% via internet, SABS or QMS consultants; 20% in their current employment; 10% from customers and suppliers and none with no previous knowledge or experience of ISO 9001. The data clearly establishes that both sets of respondents had prior knowledge of ISO 9001. This finding clearly establishes that SMME's located in the

Greater Durban Area are aware of ISO 9001. This finding is consistent with section 2.9 and 2.11 of the literature review

4.5.2 Category (b) establishes the motivation for implementing ISO 9001 QMS and the level of satisfaction for that decision to implement this QMS



	13	14	15	16	17	18	19	20	21
% respondents who have ISO	14.3	17.1	22.9	17.1	5.7	2.9	11.4	2.9	5.7
% respondents who have no ISO	0	15.4	61.5	15.4	0.0	0.0	7.7	0.0	0.0

Figure 4.2 Motivational factors to acquire ISO 9001

Key

13 - Supplier pressure-(the need to trust that SMME can deliver)

14 - To be competitive

15 – Recognition of quality in organisation and product (systems approach and control)

16 - Customer requirement

17 - Accountability

18 – To lead and set the benchmark

19. –Export requirement

20 –Customer satisfaction (quality, communication, customer driven, service delivery to customers)

21 – Retain customers especially niche markets, enter new markets, be more flexible (diversify)

As reflected in Figure 4.2, 14.3% of respondents, who are ISO 9001certified, acquired their ISO 9001 certification because of supplier pressure; 17.1% wanted to be more competitive; 22.9% wanted to build quality principles and structure into their business as well as improve the quality of their product; 17.1% claim that it was a customer requirement; 5.7% wanted the level of accountability that ISO provides; 2.9% wanted to be benchmarkers and lead the way; 11.4% claimed that it has become a requirement to do business outside the country's borders; 2.9% claimed

that it increased communication especially with their customers and improved their customer service delivery and 5.7% claimed it helped them to retain their customers and become more flexible to enter new markets. This data is compared with respondents who are not ISO 9001 certified and reflect that 15.4% wanted ISO 9001 so they would more competitive; 61.5% wanted to build quality principles and structure into their business and improve the quality of their product; 15.4% claim that it was a customer requirement and 7.7% claimed that it had become a requirement to do business outside the country's borders. This result shows that the highest frequency by both groups, as motivation to acquire ISO 9001, was to build quality both into the organisation and product. One of the benefits of ISO 9001 is that it builds a systematic and controlled environment in which organisations can function, as described in section 2.17 of the literature review.

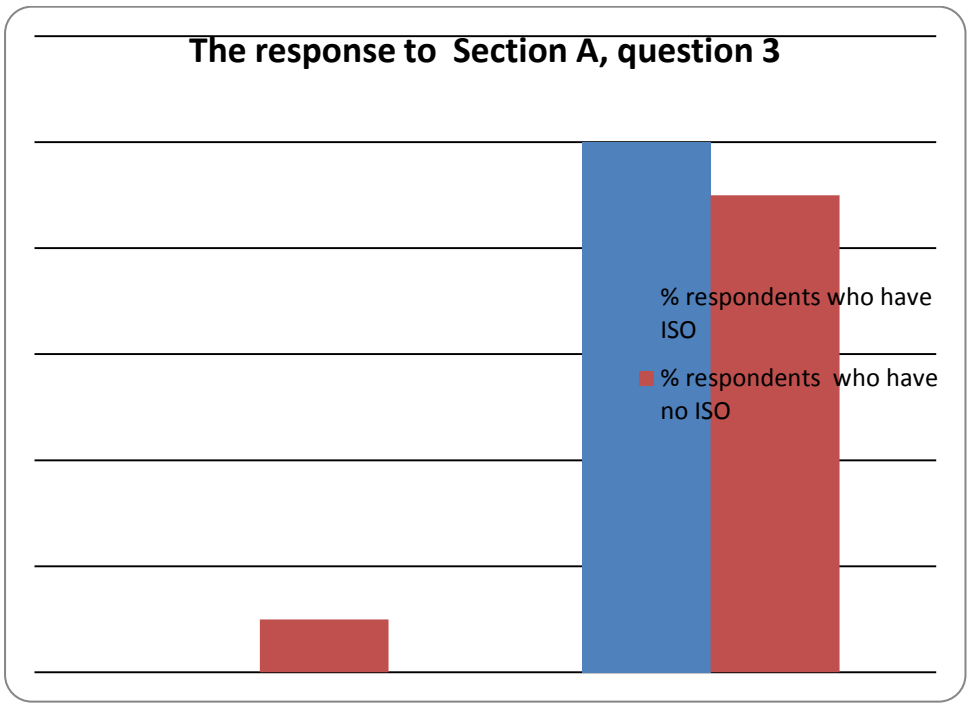


Figure 4.3 Response to question 3

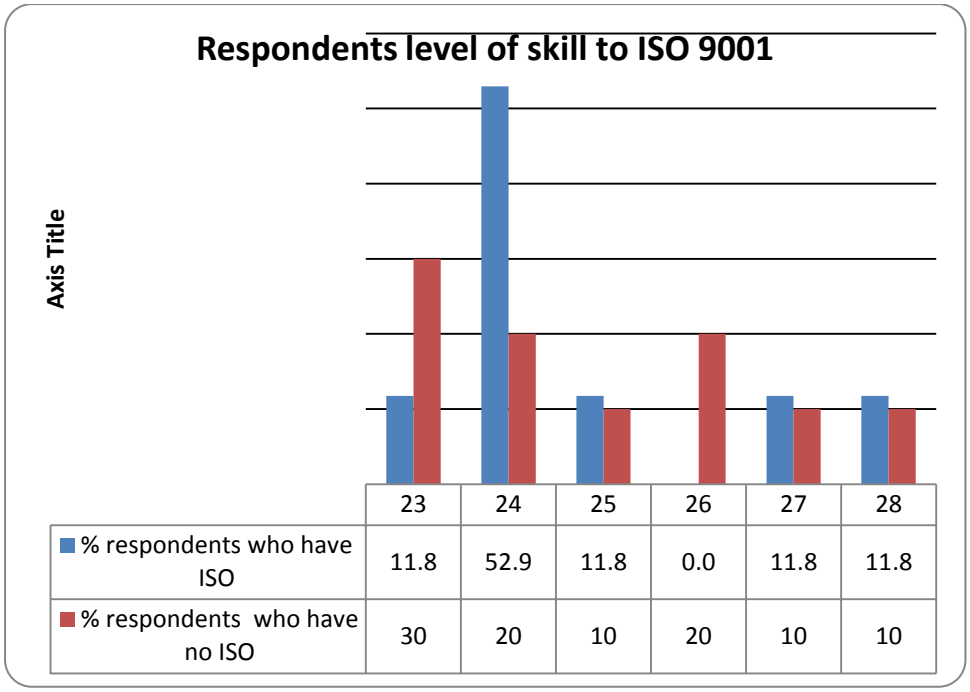
As reflected in Figure 4.3, a very high positive response was obtained to question 3 by both groups of respondents. One respondent was very despondent with management's commitment and support of this QMS and felt that the organisation would, therefore, not benefit from this QMS.

4.5.3 Category (c) establishes the skill level of ISO 9001 that respondents managing this system had and if they felt competent enough to implement this system without external help.

As reflected in Figure 4.4, 11.8% of respondents, who are ISO 9001certified, said they received the necessary skills from their previous employers and felt competent to manage ISO 9001 in their current employment, 52.9% felt they lacked the necessary skills and needed training, 11.8% said they felt they had the necessary skills to manage the QMS as they had worked more than two years with the system, 11.8% were uncertain and 11.8% said they were not skilled in this QMS. This data is compared with respondents who are not ISO 9001 certified and reflect that 30% said they received the necessary skills from their previous employers and felt competent to manage ISO 9001 in their current employment, 20% felt they lacked the necessary skills and needed training, 10% said they felt they had the necessary skills to manage the QMS as they had worked more than two years with the system, 20% said they attended courses in ISO 9001, 10% were uncertain and a further 10% said they were not skilled in this QMS.

Figure 4.4 reveals that the highest count for respondents who have ISO 9001 (which is over 50%) reflects that they felt they needed ISO 9001 training. The highest count for respondents who are not ISO 9001 certified (which is 30%) claim they had the necessary skills and that they received these skills from their previous employment. For the respondents who are ISO certified, Figure 4.4 shows that over 50% needed training. This result is consistent with section 2.12 of the literature review.

Figure 4.4 illustrates the respondent's level of skill to use ISO 9001



	23	24	25	26	27	28
% respondents who have ISO	11.8	52.9	11.8	0.0	11.8	11.8
% respondents who have no ISO	30	20	10	20	10	10

Figure 4.4 Respondents' level of skills for ISO 9001

Key

23 – Yes, from previous employment

24 – No, needed training

25 – Yes, have had ISO for >5 yrs

26 – Yes, did a study course in ISO 9001

27 - Yes and no, but not sufficient

28 – No

Figure 4.5 illustrates that the respondents needed help from external consultants'.

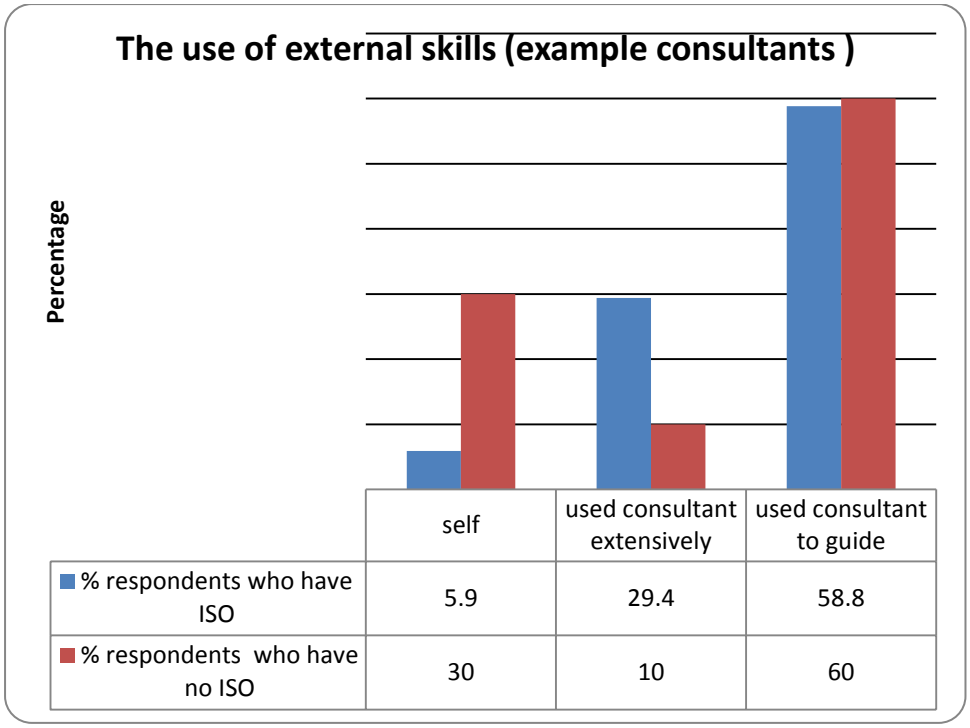


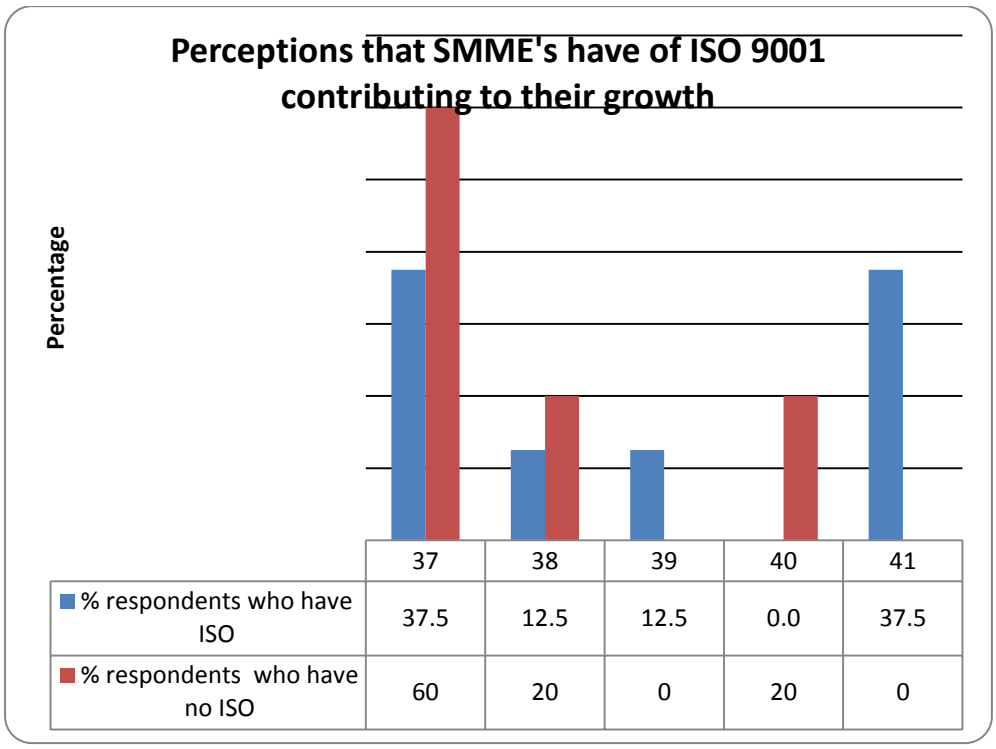
Figure 4.5 The need for the use of external help

As reflected in Figure 4.5, 5.9% of respondents, who are ISO 9001certified, implemented this QMS with no external help, 29.4% needed extensive outside help in the form of consultants and 58.9% only needed to be guided by consultants during their implementation of ISO 9001. This data is compared with respondents who are not ISO 9001 certified and reflect that 30% felt competent to implement this QMS with no external help, 10% felt they would need extensive outside help in the form of consultants and 60% felt they would only need the guidance of consultants when they implemented their ISO 9001 QMS.

Figure 4.5 shows that for the same group, close to 30% used quality consultants extensively to achieve certification. This finding could suggest that this group of respondents found the ISO 9001 QMS difficult to implement. Respondents who are not certified showed that a total of 60% felt they had the necessary skills, yet 60% reveal that they would need a consultant to guide them through the certification process. This finding could suggest that, although 60% felt they had the necessary skills, they also felt not confident enough to ensure successful certification of ISO 9001. The overall suggestion is that respondents find ISO 9001 difficult to implement. Thus, they require external quality consultants.

Figure 4.6 illustrates the perceptions that SMME's have of ISO 9001 contributing to their growth.

4.5.4 Category (d) establishes the perceptions SMME's have of ISO 9001 contributing to their growth.



	37	38	39	40	41
% respondents who have ISO	37.5	12.5	12.5	0.0	37.5
% respondents who have no ISO	60	20	0	20	0

Figure 4.6 Contribution to growth perception

Key

37 – Yes, did contribute to growth

38 - No, depends on economy (markets in a slump, demand is low and growth slow)

39 - Think so, have the capacity to grow but need the demand

40 – No, current economy is survival only, no growth

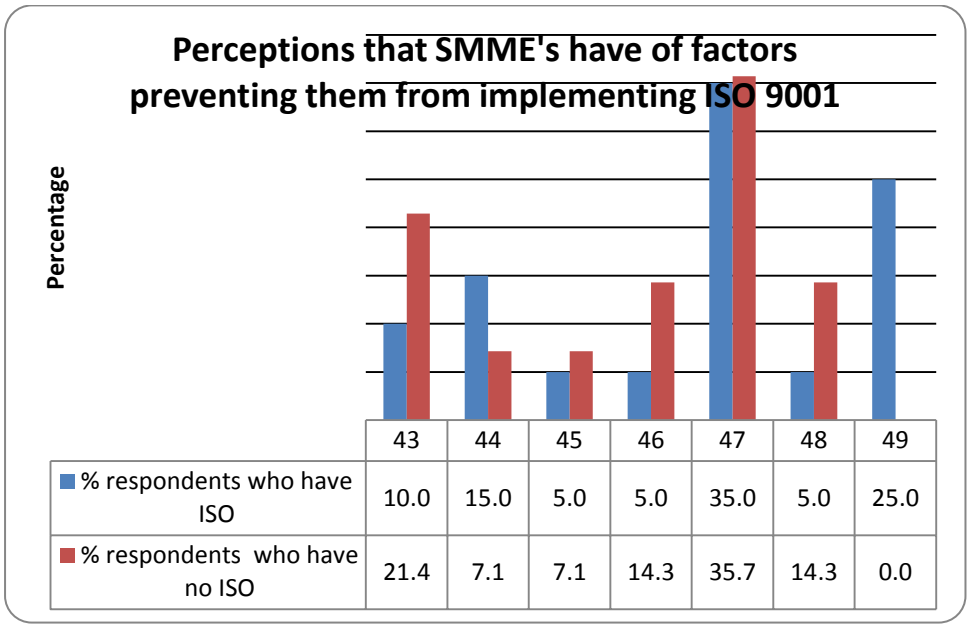
41 - Yes definitely

As reflected in Figure 4.6, 37.5% of respondents, who are ISO 9001certified, are of the opinion that ISO 9001 did contribute to their growth, 12.5% were of the opinion that their growth depended more on the economic markets which were currently in a slump and therefore, they would show no growth, 12.5% were unsure and 37.5% strongly agreed that ISO 9001 did contribute positively to their growth. This data is compared with respondents who are not ISO 9001 certified and reflect that 60% were of the opinion that ISO 9001 will contribute to their growth, 20% were of the

opinion that their growth depended more on the economic markets which are currently in a slump and, therefore, they would show no growth and 20% said they showed no growth at all and were barely surviving because of the current economic slump. A sum total of 75% of respondents, who are certified, agree that ISO 9001 had contributed to their growth and 60% of respondents that have no certification agree that ISO 9001 will contribute to their growth. The positive response to ISO 9001, as reflected in Figures 4.3 and 4.6, is consistent with Taguchi's theory as described in section 2.10 of the literature review.

Figure 4.7 illustrates the perception SMME's have, that prevent them from implementing the ISO 9001 QMS

4.5.5 Category (e) establishes the perceptions that SMME's have that prevent them from implementing the ISO 9001 QMS.



	43	44	45	46	47	48	49
% respondents who have ISO	10.0	15.0	5.0	5.0	35.0	5.0	25.0
% respondents who have no ISO	21.4	7.1	7.1	14.3	35.7	14.3	0.0

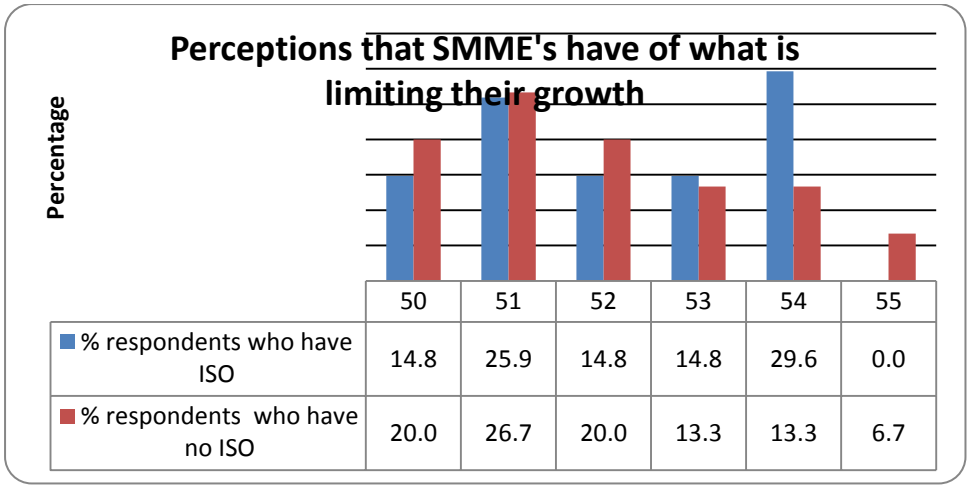
Figure 4.7 Perceptions by SMME's of factors preventing ISO 9001 implementation

Key
43 - Costs,
44 - Time shortage
45 - Limited resources
46 - No management commitment
47 - Employee resistance
48 - Shortage of staff to manage system
49 - No

As reflected in Figure 4.7, 10% of respondents, who are ISO 9001certified, are of the opinion that high costs associated with its implementation is a factor preventing them from implementing this QMS, 15% point to a shortage of time, 5% to limited resources, 5% to the lack of management commitment, 35% to employee resistance, 5% to a shortage of staff to manage this QMS and 25% are of the opinion that there were no factors preventing them from implementing the ISO 9001. This data is compared with respondents who are not ISO 9001 certified and reflect that 21.4% are of the opinion that high costs associated with its implementation are a factor preventing them from implementing this QMS, 7.1% point to a shortage of time, 7.1% to limited resources, 14.3% to the lack of management commitment, 35.7% to employee resistance and 14.3% to a shortage of staff to manage this QMS. It can be observed from Figure 4.7 that both groups perceive employee resistance as a major factor that negatively affects the implementation of the ISO 9001 QMS. Section 2.5 of the literature review describes how to overcome employee resistance.

4.5.6 Category (f) establishes the perceptions SMME's have of what is limiting SMME growth

Figure 4.8 illustrates the perceptions SMME's have of what is limiting their growth.



	50	51	52	53	54	55
% respondents who have ISO	14.8	25.9	14.8	14.8	29.6	0.0
% respondents who have no ISO	20.0	26.7	20.0	13.3	13.3	6.7

Figure 4.8 Perceptions by SMME's of factors that are limiting their growth

Key

50 - Shortage of skilled workers

51 - Lack of finance to support start- up periods

52 - Labour laws, tendering processes and import restriction laws must support SMME's

53 - Lack of management skills

54 - Government needs to create an environment that supports SMME's

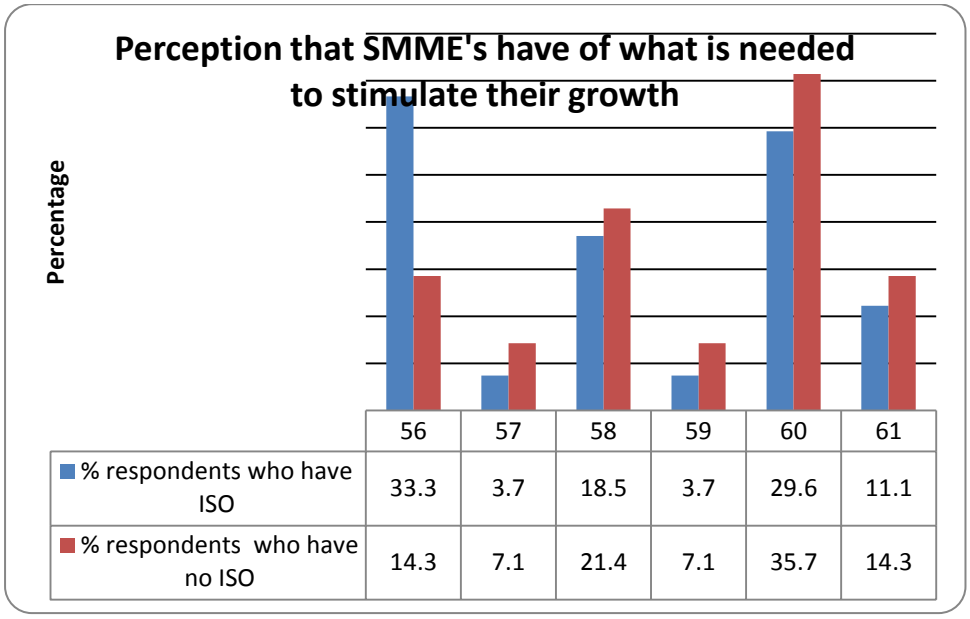
55 - Don't know

As reflected in Figure 4.8, 14.8% of respondents, who are ISO 9001certified, are of the opinion that a shortage of skilled workers is limiting the growth of SMME's, 14.8% point to a lack of management skills, 25.9% to a lack of finance to support start-up periods in SMME's, 14.8% to labour laws, tendering processes and import laws that inhibit growth and 29.6% are of the opinion that government needs to create an environment that supports SMME's. This data is compared with respondents who are not ISO 9001 certified and reflect that 20% of respondents are of the opinion that a shortage of skilled workers is limiting the growth of SMME's, 13.3% point to a lack of management skills, 26.7% to a lack of finance to support start-up periods of SMME's, 20% to labour laws, tendering processes and import laws that inhibit growth, 13.3% to government creating an environment that supports SMME's and 6.7% do not know any factors that are limiting SMME growth. It can be observed from Figure 4.8 that both groups of respondents indicate high scores for lack of finance during the start-up period of SMME's as negatively affecting their growth. Respondents, who have the ISO 9001 certification, also indicate high scores for government needing to create an environment that support SMME's. The factors

limiting SMME growth as described above are largely consistent with those found in section 2.11 of the literature review.

4.5.7 Category (g) establishes the perceptions SMME's have of what should be done to stimulate SMME growth.

Figure 4.9 illustrates the perception that SMME's have of what is needed to stimulate their growth.



	56	57	58	59	60	61
% respondents who have ISO	33.3	3.7	18.5	3.7	29.6	11.1
% respondents who have no ISO	14.3	7.1	21.4	7.1	35.7	14.3

Figure 4.9 SMME's perceptions of what is needed to stimulate their growth

Key

56 - Need more skill training

57 – Government should improve basic education

58 – Government should make access to finance and support easier

59 - Do, not know

60 – Government should create laws that favour SMME's

61 – Government should spend money wisely and root out corruption in tendering process

As reflected in Figure 4.9, 33.3% of respondents, who are ISO 9001certified, are of the opinion that more skills training is required, 3.7% are of the opinion that government should improve basic education, 18.5% are of the opinion that government should make access to finance and support easier, 3.7% do not know, 29.6% are of the opinion that government should make laws that favour SMME's and 11.1% are of the opinion that government should spend money more wisely and root out corruption in its tendering process. This data is compared with respondents who are not ISO 9001 certified and reflect that 14.3%are of the opinion that more skills

training is required, 7.1% are of the opinion that government should improve basic education, 21.4% are of the opinion that government should make access to finance and support easier, 7.1% do not know, 35.76% are of the opinion that government should make more that favour SMME's and 14.3% are of the opinion that government should spend money more wisely and root out corruption in its tendering process. It can be observed from Figure 4.9 that both groups of respondents indicate high scores for government creating laws that favour SMME's. Respondents, who have the ISO 9001 certification, also indicate high scores for the need of more skills training. Section 2.12 of the literature review investigates how government has been addressing the shortage of skilled labour in the country.

4.5.8 Category (h) establishes if the ISO 9001 certification would improve their status, competitiveness and marketability of their business.

Figure 4.10 illustrates the perceptions SMME's have, that ISO 9001 will improve their marketability.

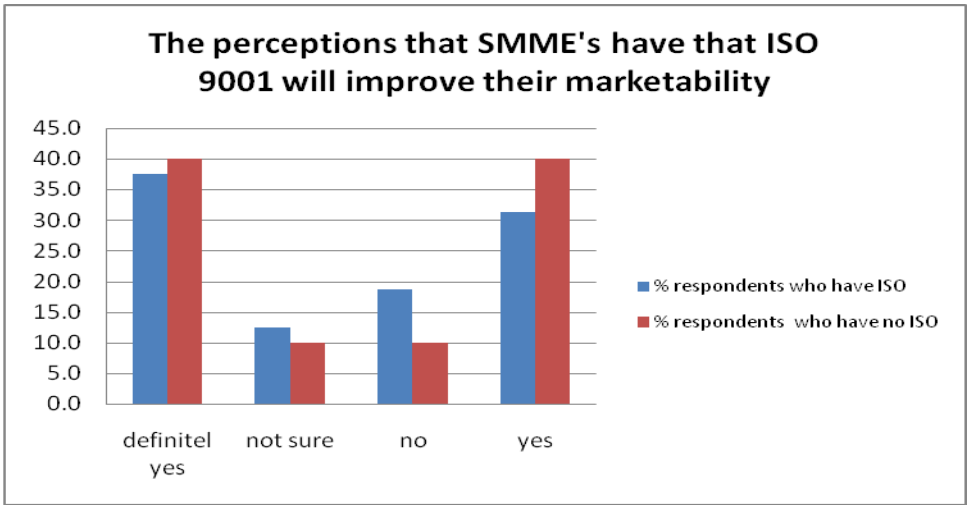


Figure 4.10 Perceptions SMME's have that ISO 9001 will improve their marketability

As reflected in Figure 4.10, both groups have high counts in favour of question 11, which asks if ISO 9001 had improved the marketability of their business.

Figure 4.11 illustrates the perceptions SMME's have, that ISO 9001 will improve their competitiveness.

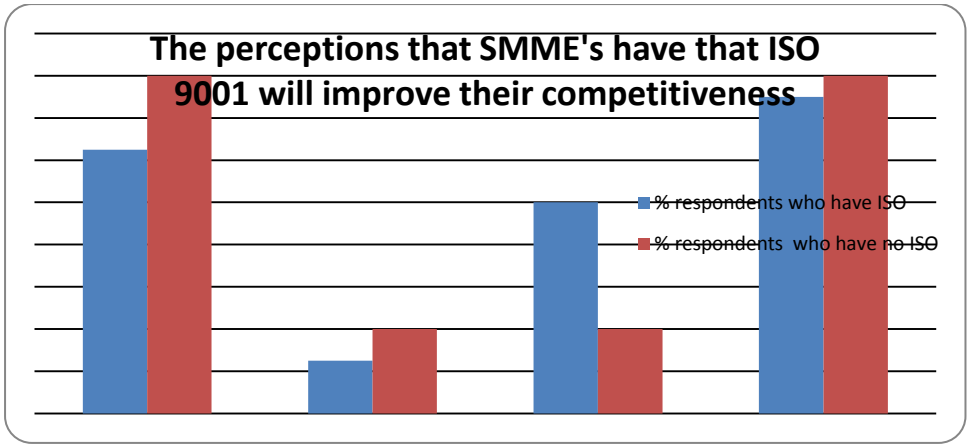


Figure 4.11 Perceptions SMME's have that ISO 9001 will improve their competitiveness

As reflected in Figure 4.11, both groups have high counts in favour of question 11, which asked if ISO 9001 had improved the competitiveness of their business in the market.

Figure 4.12 illustrates the perceptions SMME's have, that ISO 9001 will improve their status.

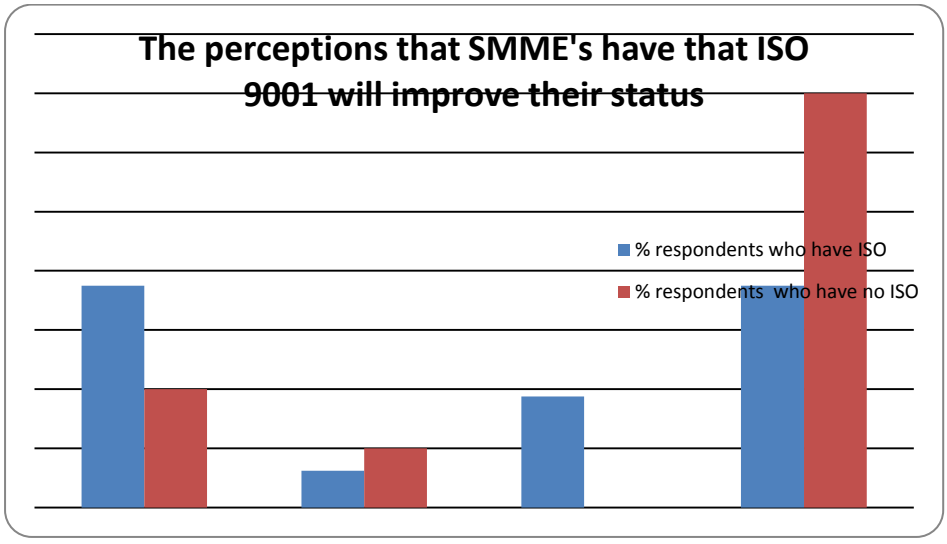


Figure 4.12 Perceptions SMME's have that ISO 9001 will improve their status

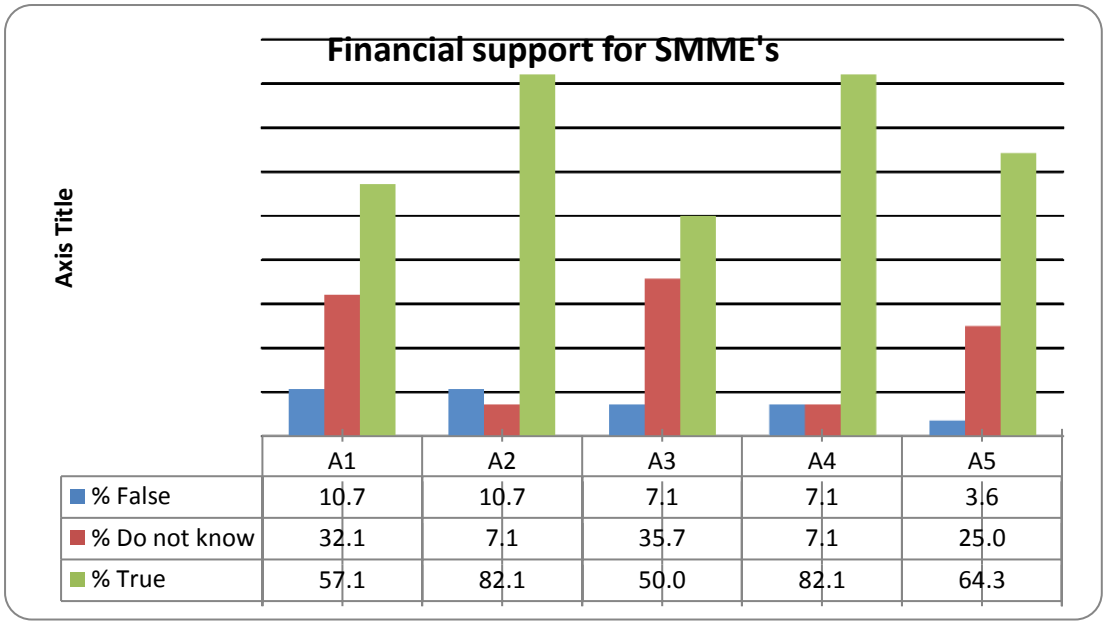
As reflected in Figure 4.12, both groups have high counts in favour of question 12, which asked if ISO 9001 had improved the status of their business in the market.

4.6 Section B of the questionnaire

The respondents completed a questionnaire which required a 'yes', 'no' or 'don't know' response to each question. The data was coded to level three as described in section 3.7 of the methodology chapter.

4.6.1 Theme one: Do SMME's perceive that there is not enough funding available for new and growing businesses?

Figure 4.13 illustrates' the perceptions SMME's have of the level of financial support available to them.



	A1	A2	A3	A4	A5
% False	10.7	10.7	7.1	7.1	3.6
% Do not know	32.1	7.1	35.7	7.1	25.0
% True	57.1	82.1	50.0	82.1	64.3

Figure 4.13 SMME's perceptions of the level of financial support available to them

Key

A1 There is not enough equity funding available for new and growing businesses.

A2 Private individuals, (other than founders) are an important source of financial support for new and growing businesses.

A3 There is not enough equity funding available for new and growing businesses.

A4 Government subsidies have a major impact on promoting business creation and growth.

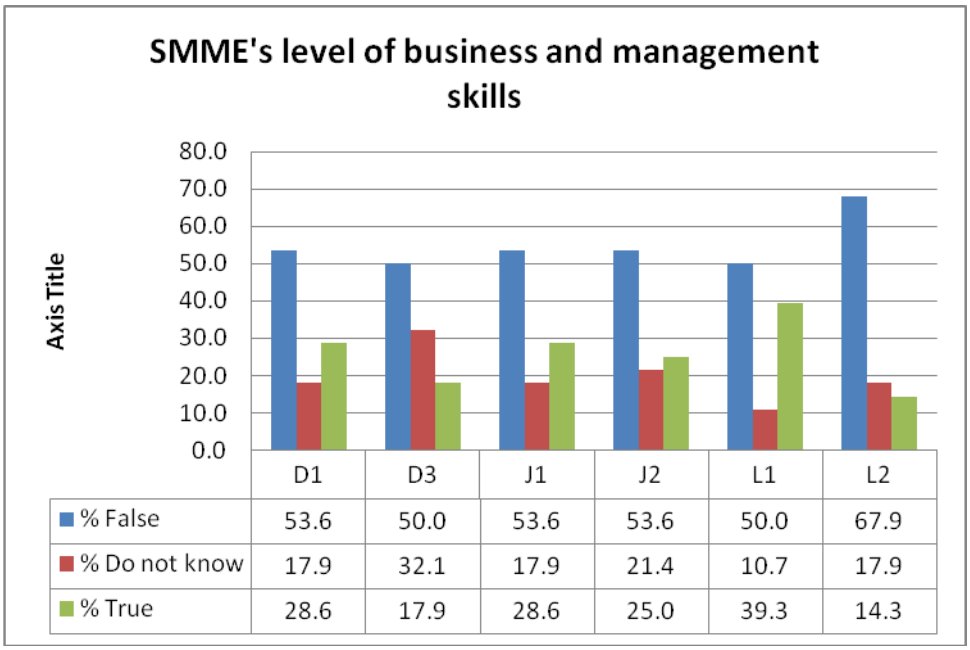
A5 Venture capitalists are an important source of private support for new and growing businesses.

Figure 4.13 reflects that close to 60% of respondents agree that there is not enough funding available for new and growing firms. SMME's are looking to other sources for funding. The above figure shows that 82% seek funding from private individuals

and 64% from venture capitalists. It further shows that 82% are of the opinion that government subsidies have a major impact on promoting and growing SMME's. This result indicates that SMME's rely greatly on government assistance, as was discussed in section 2.21 of the literature review.

4.6.2 Theme two: SMME's have good management skills

Figure 4.14 illustrates the perceptions that SMME's have of their level of business and management skills.



	D1	D3	J1	J2	L1	L2
% False	53.6	50.0	53.6	53.6	50.0	67.9
% Do not know	17.9	32.1	17.9	21.4	10.7	17.9
% True	28.6	17.9	28.6	25.0	39.3	14.3

Figure 4.14 Skills level of SMME's in business management

Key

D1 Primary and secondary education provides adequate attention to entrepreneurship and new firm creation.

D3 The level of business and management education is truly world-class.

J1 It is easy to get the information required to assess business opportunities.

J2 People know how to manage a small business.

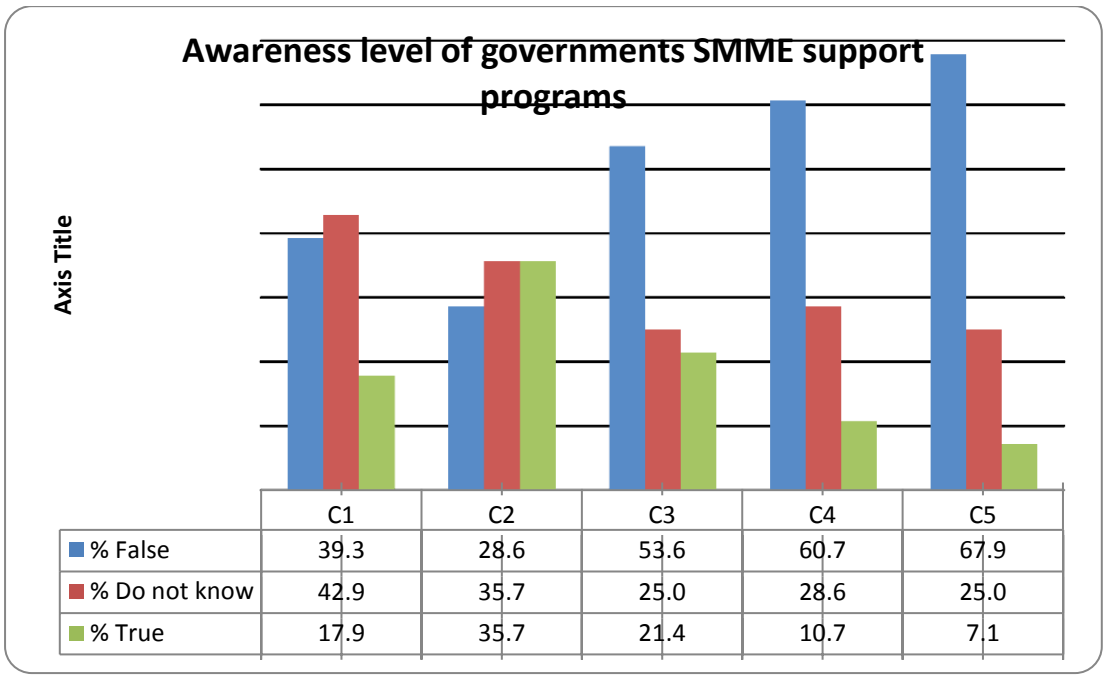
L1 Many people can react quickly to good opportunities for a new business.

L2 Many people have the ability to organize the resources required for a new business.

The trend in Figure 4.14 suggests that SMME's lack the skills needed to grow and sustain their businesses.

4.6.3 Theme three: SMME's are aware of governments' programmes to support SMME's

Figure 4.15 illustrates the awareness level that SMME's have of government support programmes.



	C1	C2	C3	C4	C5
% False	39.3	28.6	53.6	60.7	67.9
% Do not know	42.9	35.7	25.0	28.6	25.0
% True	17.9	35.7	21.4	10.7	7.1

Figure 4.15 SMME's awareness levels of government support programmes

Key

C1 A wide range of government assistance for new and growing firms can be obtained through contact with a single agency.

C2 Business incubators provide effective support for new and growing firms.

C3 There are an adequate number of government programmes for new and growing businesses.

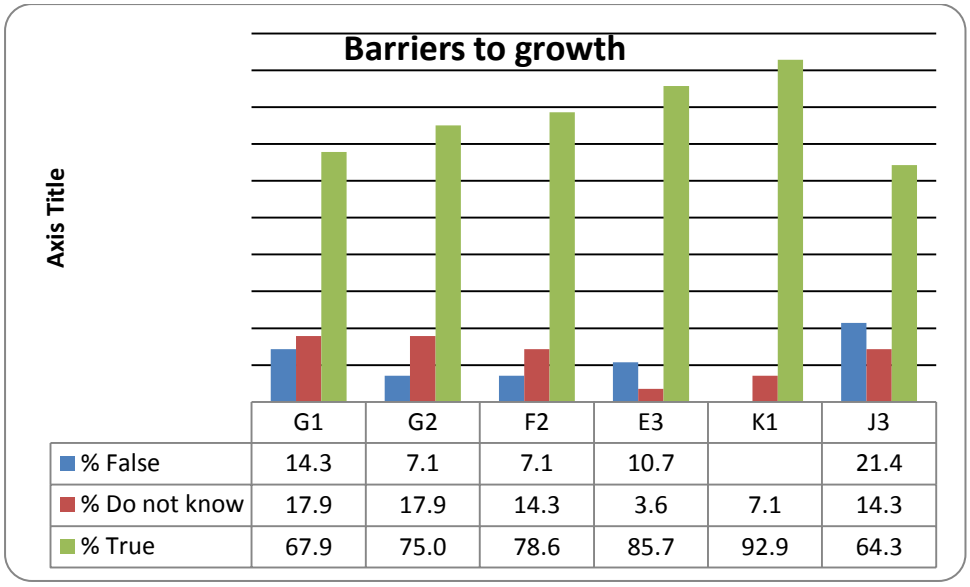
C4 The people working for government agencies are competent and effective in supporting new and growing businesses.

C5 Almost anyone who needs help from a government programme for a new or growing business can find what they need.

The trend in Figure 4.15 reflects that SMME's have an overall negative opinion of the competence of staff employed in SMME support programmes and that there is a shortage of government programmes to assist new and growing businesses.

4.6.4 Theme four: Barriers to growth

Figure 4.16 illustrates the perceptions SMME's have of the barriers to their growth.



	G1	G2	F2	E3	K1	J3
% False	14.3	7.1	7.1	10.7		21.4
% Do not know	17.9	17.9	14.3	3.6	7.1	14.3
% True	67.9	75.0	78.6	85.7	92.9	64.3

Figure 4.16 SMME's perceptions of barriers to their growth

G1 The barriers to market entry are too high for new and growing businesses.

G2 It is often too costly for new and growing businesses to enter new markets.

F2 The costs of subcontractors, suppliers and consultants are much too high for new and growing firms.

E3 Acquiring the latest technology is too costly for most new and growing firms.

K1 Most people believe that the creation of new or high growth businesses is very difficult.

J3 Opportunities to create truly high growth businesses are rare.

The trend in Figure 4.16 reveals that respondents are of the opinion that SMME's experience significant difficulties in growing their businesses. Section 2.19 of the literature review discusses the initiatives that the South African government has taken to support SMME's.

The study also investigated how respondents perceived the provinces physical infrastructure like roads, utilities and communication networks as well as government laws and policies which affect SMME's. These perceptions are reflected in Figure 4.17.

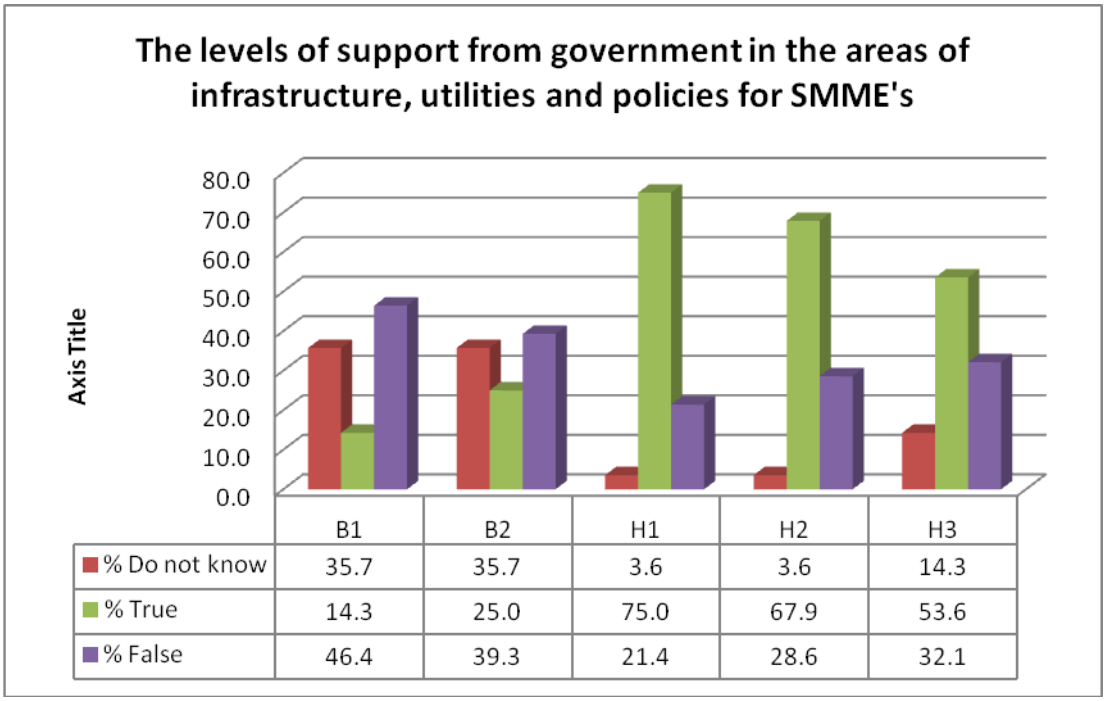


Figure 4.17 SMME's perceptions of the level of support in the areas of infrastructure, utilities and policies

Key

B1 Government policies (e.g., public procurement) consistently favour new firms.

B2 The support for new and growing firms is a high priority for policy at the national government level.

H1 The physical infrastructure (roads, utilities, waste disposal) provides good support for new and growing businesses.

H2 It is not too expensive for a new or growing business to get good access to communications (phone, Internet, etc.).

H3 New and growing businesses can afford the cost of basic utilities (gas, water, electricity, sewage).

Figure 4.17 shows that respondents agree that there is good physical infrastructure like roads, utilities and reliable communication networks which are affordable but reflect that government policies to not support SMME's. Section 2.20 of the literature review supports the respondents' perceptions that the city of Durban has good physical infrastructure.

4.7 Section C of the questionnaire

This section of the questionnaire established the demographics of the study. Information like gender, age and education levels for each respondent was obtained and analysed**.**

Figure 4.18 reflects the study's gender dispersion of respondents who are ISO 9001 certified.

4.7.1 Gender of the responses

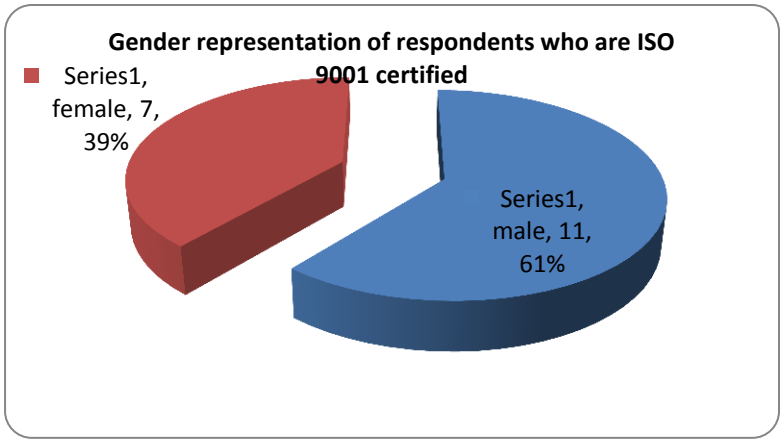


Figure 4.18 Gender representation of respondents who are ISO 9001 certified

Figure 4.18 reveals the study's gender dispersion of respondents who have been ISO 9001 certified. From the selected sample of respondents, who are ISO 9001 certified, the percentage of male respondents was 61%, while the percentage of female respondents was 39%.

Figure 4.19 reflects the study's gender dispersion of respondents who are not ISO 9001 certified.

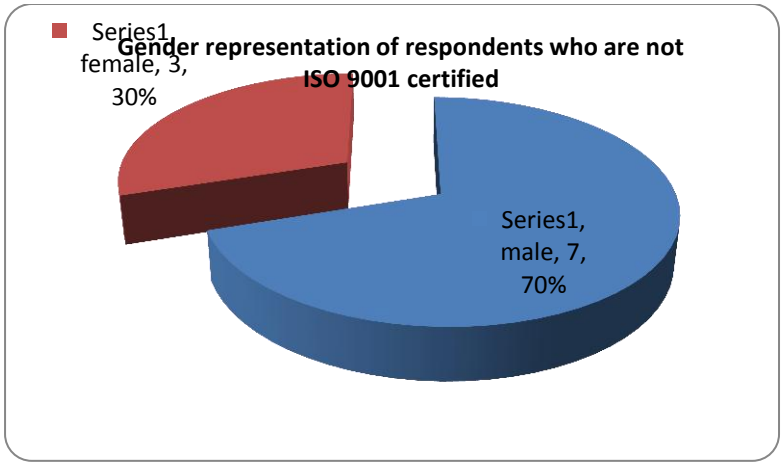


Figure 4.19 Gender representation of respondents who are not ISO 9001 certified

Figure 4.19 reveals the study's gender dispersion of respondents have not been ISO 9001 certified. From the selected sample, the percentage of male respondents was 70%, while the percentage of female respondents was 30%. Both sample groups indicate a ratio of approximately 2:1 of men to women respondents. This finding is interesting, but this study has not collected data that could explain this finding as it is not the focus of this study.

4.7.2 Age of respondents

Figure 4.20 reflects the study's age dispersion.

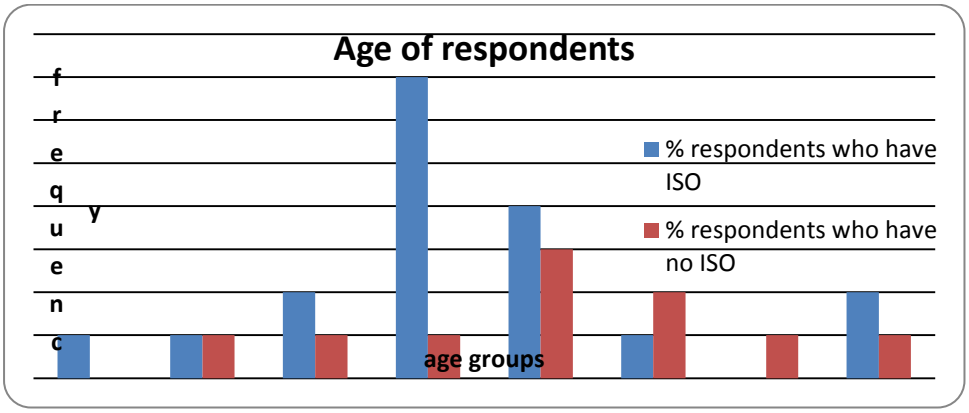


Figure 4.20 Age of respondents

Figure 4.20 reveals the age dispersion of the respondents from the two sample groups. As observed, there is a sharp spike in the age group 35-39 year olds for the sample group of respondents who have ISO 9001 certification, as compared to the group who do not have this certification. This phenomenon is recommended for further investigation to adequately explain it.

4.7.3 Education level of respondents

Figure 4.21 reflects the education level of the respondents.

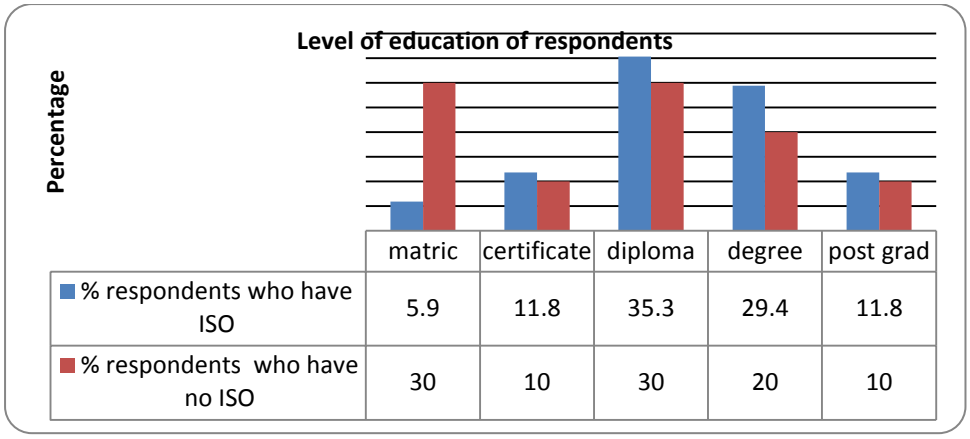


Figure 4.21 Level of education of the two groups of respondents expressed as percentages

Figure 4.21 compares the two sample groups in respect of levels of education. This figure shows that 5.9% of the respondents, who have ISO 9001, only have a matriculation certificate as compared to 30% of respondents who do not have ISO 9001 certification; 35.3% have a diploma compared to 30%, 29.4% hold a degree compared to 20%, 11.8% have a post graduate certificate compared to 10%, while 11.8% have other forms of qualifications compared to 10%. More than 90% of the respondents, who are ISO 9001 certified, have some kind of post-matric qualification, as compared to 70% of the other group. For the group of respondents who are ISO 9001 certified, the age groups are cross tabulated with the level of education to explain the spike in Figure 4.20. This cross tabulation reveals the same spike in that age group relating to their level of education.

Figure 4.22 is a cross tabulation of the level of education with age of the respondents, who are ISO 9001 certified.

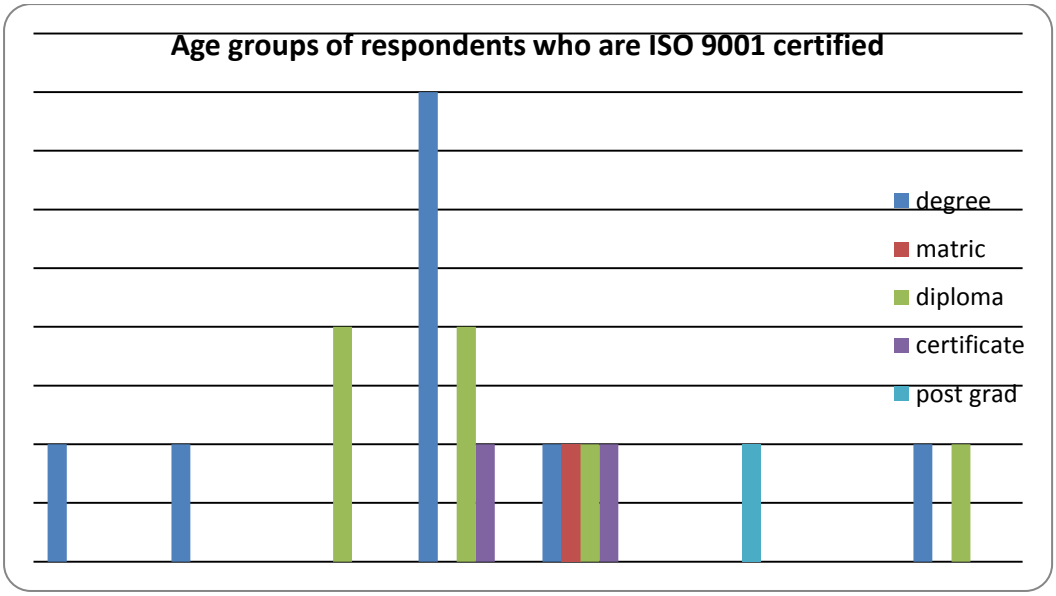


Figure 4.22 A cross tabulation of the level of education with age categories of only the ISO 9001 certified group

The finding in Figure 4.22 could mean that the organisations that are ISO 9001 certified are more likely to appoint personnel with degrees to the task of managing their ISO 9001 QMS in order to maintain a high level of reliability and confidence with this QMS.

4.8 Conclusion

The results of the empirical study were presented and analysed in this chapter in the form of charts and tables which helped to provide a detailed analysis.

Most of the graphs in section A showed that both groups of respondents have an overall positive perception that ISO 9001 QMS has the capacity to grow and make them sustainable in the increasingly demanding markets in which they trade.

Major obstacles preventing SMME's from implementing this QMS have also been identified. These include costs and employee resistance. The lack of government support, in the areas of competent government employees, government funding and policies has been highlighted. This was validated by both descriptive and inferential statistical analysis. The analysis further indicated that the results were statistically significant and did not happen by chance. In addition, there was a high level of reliability and stability for the responses.

This study was based on SMME perception of the ISO 9001 QMS. Actual figures of success were not forthcoming as confidentiality was a factor to be considered.

The conclusions and recommendations arising out of this study are presented in chapter 5. This chapter will also outline a summary of the achievements of the research objectives and determine the possibility for further research.

Chapter Five: Recommendations and Conclusions

5.1 Introduction

The previous chapter has analysed, interpreted and presented results from the face-to-face interviews. The data was grouped into categories (a) to (h) and analysed with the aid of descriptive and inferential statistics.

This chapter will elaborate on some of the findings in the previous section; outline the summary of the study; ascertain if study objectives were achieved; highlight study restrictions that were encountered during the study process and present recommendations for future research.

5.2 Summary of the study

Chapter one of the study showed that a quality management system like ISO 9001 can be a powerful business tool for survival and to achieve growth as global competition grows. It was developed by the International Organization for Standardization (ISO) in Geneva Switzerland to be the QMS that could bridge the gap between Corporations and SMME's in both domestic and international markets. Globally, SMME's are regarded as important sources of revenue and job creation for economies. The trend in most governments is to support SMME growth. It is evident that most SMME's rely on government intervention to assist them during their survival stage. The study shows that the South African government still has much work to do to foster a more supportive role in SMME growth and survival. It can be concluded that government needs to create an environment that is more conducive to nurturing SMME's.

A culture of quality has not yet been developed and marketed in SMME's in South Africa. There is still too much importance placed on product price at the expense of product quality. A strong, holistic, supportive programme between government and SMME's is, therefore, needed. This will encourage SMME's to think long-term and strategically develop their organisations. The quality of their products will subsequently improve and enable them to trade across borders. The literature review highlights that, by choosing quality as a business strategy, organisations have a greater understand of their customer's needs. The IT era has produced customers

who are better informed, while the global market has given customers a wider purchasing choice. In order for SMME's to grow, they need to improve their competitiveness and marketability. The study shows that those SMME's that have implemented ISO 9001 have improved their status, marketability and competitiveness in the markets in which they trade. It can be concluded that SMME's that have chosen quality as a business strategy are happy with that decision.

According to the literature review, the most notable challenges faced by SMME's were related to the lack of skills and financial support. The findings of the study confirm these challenges.

Small businesses did not have the necessary confidence to effectively implement integrated quality initiatives and needed external quality consultants to guide them through the process. This need escalated the costs for SMME's to achieve ISO 9001 certification. It is evident that, despite the initial high costs associated with becoming ISO 9001 certified, SMME management believe in the ISO 9001 QMS and are committed to it.

5.3 Findings of this study

The findings reflect that there is an awareness of the ISO 9001 QMS amongst SMME's and that the internet has contributed largely to marketing ISO 9001. Government, through the tendering process, contributed little to bringing about an awareness of the need to include quality in a business plan.

The need by SMME's to build quality into both the organisation and product emerged very clearly as motivation to acquire ISO 9001. This was one of the benefits that was discussed and illustrated in Figure 2.4 of the literature review that the ISO 9001 builds a systematic and controlled environment in which organisations can function.

The study revealed that both groups of respondents used external help in the form of quality consultants to assist them to achieve certification. It can be concluded that management of both groups show commitment to ISO 9001 by making limited

financial resources available for training staff and employing consultants to ensure they achieve certification in the shortest possible time. This commitment affirms that SMME's are strategically aligning their organisations and building ISO into their business strategies to better ensure their survival and growth.

The study highlighted some factors that were preventing SMME's from implementing the ISO 9001 QMS. A major factor was employee resistance. The study also highlighted areas where SMME's needed more support. These areas include finance, improving management skills of SMME's and relaxing labour laws. This will allow SMME's to grow, become profitable and sustainable, especially in their start-up phase.

The main core of this study was to ascertain the effect the ISO 9001 QMS has on the growth and survival of SMME's. A favourable conclusion can be drawn with regards to the effectiveness of ISO 9001 in the growth of SMME's.

5.4 Achieving study objectives

Study objectives form the core of the entire study. The achievements of the research objectives are briefly discussed below.

- **To determine if the ISO 9001 QMS has contributed to growth and survival of SMME's in the Greater Durban Area**

  The study was able to evaluate and determine SMME's perceptions with regard to whether the ISO 9001 QMS would be an effective tool in contributing to their growth and survival. These perceptions were tested and analysed in chapter four. They indicate that the majority of respondents from both groups had a positive perception towards the ISO 9001 QMS contributing to their growth and survival, as it improved their marketability, status and competitiveness in the markets in which they traded. Theoretical information in the literature review shows that organizations are increasingly beginning to understand that a sound QMS, such as ISO 9001, is a viable approach to becoming and remaining competitive in the market place. The review also suggests that a recognised QMS is rapidly becoming the "admission ticket" to doing business.

- **To identify major obstacles that prevent SMME's from implementing the ISO 9001 QMS**

  The findings indicate that both groups perceive employee resistance as a major factor that negatively affects the implementation of the ISO 9001 QMS. There were, however, some respondents from the group that had been ISO 9001 certified who indicated they found no obstacles that prevented them from implementing this QMS. This was because respondents from that group went for training and used external quality consultants extensively to achieve their certification.

5.5 Study restrictions

The study focuses only on SMME's in the Greater Durban Area but the findings are much broader in their application. The study was conducted with a group of SMME's that had implemented the ISO 9001 QMS and another that had not.

5.6 Recommendations

Based on the research findings, the following recommendations are proposed:

- A proactive awareness programme that educates and encourages SMME's to develop a culture of quality within their organisations should be developed and implemented at government level. It is recommended that it become a basic requirement to have documented evidence of an implemented quality management system within an SMME when making applications for government tenders.

- SMME management should improve their management skills. This will better equip them to think strategically and improve their problem-solving skills. It will also improve both the credibility of the SMME and management confidence, especially during decision-making processes.

- It is recommended that mentorship programmes between government, the private sector and tertiary educational institutions should include educating SMME's on the benefits of fostering a "culture of quality" within their organisations.

- The study revealed that most respondents were dissatisfied with the level of competence by government employees to adequately provide support to SMME's. It is recommended that government employees attend on-going training to enable them to be aware of the changes that occur within their departments and filter those changes through to all the relevant parties affected.

- A major obstacle that SMME's experience when implementing ISO 9001 is employee resistance to the perceived increase in administrative workload. It is recommended that regular training and consultation sessions between management and employees be facilitated to overcome this obstacle.

- Since SMME's, in most cases, operate on simple business practices, it is recommended that certification bodies reduce certification costs. This could possibly encourage more SMME's to become ISO 9001 certified. The benefits of this reduction are far reaching.

5.7 Future research

It is recommended that another study be done of a quantitative nature that will investigate the numerical impact the ISO 9001 QMS has on the growth of an SMME. It was noted that all the respondents were optimistic about the benefits of this QMS. This study was not designed to gather numerical evidence relating to their optimism. Therefore, further research is recommended.

References

Aaker. 2000. *Brand Leadership: The next level of the brand revolution*. Washington DC: Free Press Publication.

Andrews, M. 2008. *Doing narative research*. London: Sage.

Barahona, C & Levy, S. 2002. How to Generate Statistics and Influence Policy Using Participatory Methods in Research. New York: SAGE.

Basu, R. 2004. *Implementing Quality,* Great Britain, Thompsons Learning.

Baxter, L, Hughs, C & Tight, M. 2007. *How to research*. third ed. Berkshire England: Open university Press.

Blumenthal, I. 2006. Setas: Driving skills development in the SME sector. *Succeed*, (July): 61.

Bothma, P. 2006. TETA: Keeping the wheel of industry turning towars better SME skills. *Succeed*, (July): 62-63.

Brown, T. 2008. Over to the expert. *Quality Works***,** 42

Dalling, I. 2008. Ian Dalling. *Quality Works***,** 14.

Debenham, M. 2008. Future Perfect. *Quality Works***,** 18-19.

Deming. 1982. *Out of the crisis*. Massachusetts: Cambridge Publishers.

Denzin, N & Linclon. 2008. *The Landscape of Qualitative Research*. London: Sage.

Denzin, N. 2008. *The Sage handbook of qualitative research*. London: SAGE.

DIvanna, J. A. 2004. *Strategic thinking in tactical times,* New York, Palgrave Macmillan.

Donaldson & Stewart, I. 2009. *What counts as credible evidence in applied research and evaluation practice*. California: SAGE.

Draper, P. & Alves, P. 2009. *Trade reform in Southern Africa Vision 2014,* South Africa, Fanele.

Ebersohn, W. 2006. What the future holds for all of us. *Succeed***,** 15.

Evans, J. 2005. *Quality & Performance Excellence: Management, Organization and Strategy,* USA, Thomson Corporation.

Evans, J. 2008. *Quality and Performance Excellence: Management Organization, and Strategy,* Unites States of America, Thomson South Western.

Evans, J. 2008. *The management and control of quality*. Cincinnati: Thomson South Western.

Fleisher, C. S. & Babette, B. E. 2007. *Business and competitive analysis: Effective application of new and classic methods,* New Jersey, Financial Times Press.

Foster, S. 2007. *Managing quality : Integrating the supply chain,* Upper Saddle River New Jersey, Pearson Prentice Hall.

Gillman, B. 2005. *Case Study Research methods*. 2 ed. London: Continuum Publication.

Goetsch, D. L. & Davis, S. B. 2002. *Understanding and Implementing ISO 9000:2000,* USA, Pearson Education, Inc

Goldstuck, A. 2006. Skills and finance in short supply. *Succeed***,** 37.

Grulke, W. 2006. Getting relevant. *Succeed***,** 13.

Gryna, F., Chua, R. & Defeo, J. 2007. *Jurans Quality Planning and Analysis,* New York, McGraw Hill.

Guba, E & Lincoln. 1990. *The paradigm dialogue*. Los Angeles: Sage.

Hahn, C. 2008. *Doing Qualitative Research using your computer: A practical guide,* London, Sage Publication.

Higgins, A. 2006. Why SA is failing in entrepreneurship. *Succeed***,** 38-39.

Holland, J. & Campbell, D. J. 2005. *Methods in Development Research Combining Qualitative and quantitative approaches,* United Kingdom, ITDG Publishing.

Hughes, B. 2009. Bob Hughes. *Quality World,* 35**,** 60.

Hutchins, D. 1990. *In pursuit of quality*. London: Pitman

Hutchins, D. 2008. Joseph Moses Juran. *Quality World*, (April): 10-11

Juran, J. 1994. Quality. *Quality progress, 57-63.*.

Juran, J. 1994. What is quality. *Quality progress*, (August).

Kent, R. 2001. *Data Construction And Analysis For Survey Research*. New York: Palgrave Publication.

Kent, R. 2007. *Marketing Research:Approaches, methods and applications*. New York: Thomsons Learning

Lal, H. 2008. *Total Quality Management: A Practical Approach,* New Delhi India, New Age International.

Lamprecht, J. 2000. Quality and Power in the Supply Chain. 1 ed. Oxford: Butterworth Heinemann.

Latergan, L. 2009. *Managing applied research: theories, cases and perspectives*. London: Shaker Publications.

Leedy, P. 2010. *Practical research: Planning and design*. 9 ed. Cape town: Pearson Education.

Levitte. 1991. *Levitte on marketing*. Boston: Harvard Business Review Publishing

Linder, J. C. 2004. *Outsourcing for radical change: A bold approach to enterprise transformation,* Accenture LLP, United States of America.

Lussier, R & Achua. 2001. *Leasdership: Theory, application, skill development*. Cincinnati: South Western College.

Maguad, B. & Krone, R. 2009. Ethics and moral leadership: Quality Linkages. *Total Quality Management***,** 210-215.

Marimom, Heras & Casedesus. 2009. What drives ISO certification? *Total Quality Management*,: 5-7.

Mason, M. 2008. *Critical thinking and learning*. London: Blackwell Publishers.

Mcdonald, M. 2008. Budding up. *Quality Works***,** 32-33.

Milakovich, M. 2006. *Improving Service Quality in the global economy,* USA, Auerbach Publications.

Moosa, K. 2008. Nine hurdles to TQM. *Quality Works***,** 35.

Nightingale, J. 2008. *Think Smart Act Smart,* New Jersey, John Wiley & sons Inc.

Parr, M. 2006. A rainbow on the horizon. *Succeed***,** 18.

Politt, D & Hungler. 2001. *Essentials of nursing: Methods appraisal and utilization*. 5th ed. London: Lippincott.

Pratt, B. & Loizos, P. 1992. *Choosing research methods: Data collection for development workers,* Oxford, Oxfam.

Richards, L & Morse, J. 2007. *Users guide to qualitative methods*. 2 ed. California: SAGE Publication.

Robson, C. 2000. *Small-Scale Evaluation,* New Delhi India, Sage Publications.

Robson, C. 2002. *Real world research : A resource for social scientists and Practitioners Researchers,* Oxford, Blackwell Publishing.

Saunders, M., Mann, R. & Smith, R. 2009. Constructs and systems: Connecting strategy deployment and performance excellence. *Total Quality Management***,** 119.

Schindehutte. 2009. *Rethinking marketing: The entrepeneurial imperative*. New York: Sage.

Schonberger, R. & Knod, J. 1988. *Operations management- serving the customer*.London:Sage.

Shibutani, T. 1966. *Impoverished News: A sociological Study of Rumor,* New York, The Bobbs-Merrill Company

Sibiya, B. 2006. A rainbow on the horizon. *Succeed*, (July): 18-19.

Slater, S. & Narver, J. 2000. Market oriented is more than being customer led. *Strategic management Journal,* 20**,** 1165-1168.

Slater, S., Narver, J. & Maclachlan, D. 2004. Responsive and reactive market orientation and new product success. *Product innovation Management journal,* 21**,** 334.

South Africa.Department of trade and Industry, 2004. *South African Guide book.* Government Gazette no. 42Pretoria: Government Printer.

South Africa.Trade and Investment KZN,2007.*Driving the business of trade and investment.*Durban:Trade and Investment House

Stokes, H. 2009. News: Can't get no satisfaction. *Quality World***,** 6.

Tricker, R. 2001. *ISO 9001:2000 for small businesses,* Oxford, Butterwoth-Heinemann.

Tricker, R. 2005. *ISO 9001:2000 for small businesses,* Great Britain, Elsevier Butterworth-Heinemann.

UNKNOWN 1986. The quality manifesto. *Quality Progress***,** 14-15.

Walton, T. 2009. Birds of a feather. *Quality World,* 35**,** 19.

Weinstein, L., Vkurka, R. & Gramam, G. 2009. Cost of Quality and maintenance: Improvement Approaches. *Total Quality Management,* 20**,** 498-499.

Welman, Kruger & Mitchell. 2005. *Research methodology*. 3 ed. Cape Town: Oxford Southern Africa.

White 2010. Environmental friendly horizons. *Journal of science and earth***,** 123-154.

Wild, R. 2002. *Essentials of operations management*. 5th ed. London: Continuum.

Yukasovic, G. 2009. Breaching the Gap. *Quality World,* 35**,** 44-49.

(http://www.history.com/topics/interchangeable[accessed 23 August 2010]).

(http://www.referenceforbusiness.com/management/Pr-Sa/Quality-Gurus.html [accesed 23 August 2010]).

(http://www.nysscpa.org/cpajournal/old/14903851.htm[accessed 23 August 2010]).

from http://www.journals.co.za/ej/ejour-acom.html[accessed 14 September 2010]).

Annexure A

Table A1: World ranking in ease of doing business, 2006

	Ease of doing business	Starting a business	Dealing with licences	Employing workers	Registering property	Getting credit	Trading across borders	Closing a business
Singapore	1	11	8	3	12	7	4	2
New Zealand	2	3	18	10	1	3	12	21
Hong Kong	5	5	64	16	60	2	1	14
Australia	8	2	29	9	27	3	23	12
Japan	11	18	2	36	39	13	19	1
Thailand	18	28	3	46	18	33	103	38
Korea	23	116	28	110	67	21	28	11
Malaysia	25	71	137	38	66	3	46	51
South Africa	29	57	45	87	69	33	67	65
Taiwan	47	94	148	154	24	48	42	4
Pakistan	74	54	89	126	68	65	98	46
Bangladesh	88	68	67	75	167	48	134	93
Sri Lanka	89	44	71	98	125	101	99	59
China	93	128	153	78	21	101	38	75
Vietnam	104	97	25	104	34	83	75	116

Brazil	121	115	139	99	124	83	53	135
Philippines	126	108	113	118	98	101	63	147
India	134	88	155	112	110	65	139	133
Indonesia	135	161	131	140	120	83	60	136

	Ease of trading across borders (world ranking	Documents for export (number)	Time for export (days)	Cost to export ($ per container	Documents for import (number)	Time for imports (days)	Cost to import ($ per container)
Hong Kong	1	2	5	425	2	5	425
Singapore	4	5	6	382	6	3	333
New Zealand	12	5	8	355	9	13	555
Japan	19	5	11	789	7	11	847
Australia	23	6	9	795	5	12	945
Korea	28	5	12	780	8	12	1040
China	38	6	18	335	12	22	375
Taiwan	42	8	14	747	8	14	747
Malaysia	46	6	20	481	12	22	428
Brazil	53	7	18	895	6	24	1145

Indonesia	60	7	25	546	10	30	675
Philippines	63	6	18	1336	7	20	1336
South Africa	67	5	31	850	9	34	850
Vietnam	75	6	35	701	9	36	887
Pakistan	98	8	24	996	12	19	1005
Sri Lanka	99	8	25	797	13	27	789
Thailand	103	9	24	848	12	22	1042
Bangladesh	134	7	35	902	16	57	1287
India	139	10	27	864	15	41	1244

Table A2 : Trade Facilitation indicators, 2006

Annexure B

List of Acronyms

United States of America (USA)

South Africa (SA)

Small, Medium and Micro Enterprises (SMME's)

Department of Trade and Investment (DTI)

Quality Managements Systems (QMS)

International Organization for Standardization (ISO)

Kwazulu-Natal (KZN).

Durban University of Technology (DUT)

American Society of Quality (ASQ).

Statistical Package for the Social Sciences (SPSS)

strengths, weaknesses, opportunities and threats (SWOT)

political, economic, social, technical, legal and environmental (PESTLE)

Sector Education Training Authorities (SETA)

Annexure C-Interview Schedule

Section A

Question 1

a) Do you have any knowledge of what a QMS is? If the response is no, move to Q 1(b). If the response is yes, please explain.
b) Have you heard of the ISO 9001 QMS? If the response is no, move to question 5,9,10 followed by Section B. If the response is yes, please explain.

Question 2

a) Do you personally know a SMME that has implemented a quality management system (QMS)? If response is no move to Q 2(b). If the response is yes, please explain how you came to know.
b) Explain why that could be the case, then move to Section B

Question 3

Do you expect to implement a QMS in your business in the next 3 years? Please explain the reason for your response.

Question 4

Do you have the necessary skills to implement a QMS? Please give reasons for your response

Question 5

a) Have you completed Secondary school? If No move to Q5(c). If Yes move to Q5(b)
b) Have you got a higher education? If yes move to Q5(c)
c) What level of education have you received?

Question 6

In the next six months will there be good opportunities for you to grow your business? Please explain your response.

Question 7

Are there good opportunities for you to implement a QMS in your business? Please explain your response.

Question 8

Are there any barriers that prevent you from implementing a QMS in your business? Please explain your response.

Question 9

What, in your opinion, are the three most important factors limiting SMME growth?

Question 10

What, in your opinion, are the three most important things that should be done to stimulate SMME growth?

Question 11

Is implementing a QMS like ISO 9001 a good business decision?

Please explain your response

Question 12

Does having an ISO 9001 certification give SMME's better marketability edge over competitors? Please explain your response

Question 13

Will being ISO 9001certified improve the status of your business in your market? Please explain your response

Section B

The following statements assess provincial conditions influencing entrepreneurial activity in KwaZulu-Natal. Please circle the most appropriate option.
Do Not Know (DK)
True (T)
False (F)

Topic A In my province:

		DK	T	F
1	There is not enough equity funding available for new and growing businesses.			
2	Private individuals (other than founders) are an important source of financial support for new and growing businesses.			
3	Initial public offerings (IPOs) are an important source of equity for new and growing businesses.			
4	Government subsidies have a major impact on promoting business creation and growth.			
5	Venture capitalists are an important source of private support for new and growing businesses.			

Topic B In my province:

1	Government policies (e.g., public procurement) consistently favour new firms.	DK	T	F
2	The support for new and growing firms is a high priority for policy at the national government level.			

Topic C In my province:

		DK	T	F
1	A wide range of government assistance for new and growing firms can be obtained through contact with a single agency.			
2	Business incubators provide effective support for new and growing firms.			
3	There are an adequate number of government programs for new and growing businesses.			
4	The people working for government agencies are competent and effective in supporting new and growing businesses.			
5	Almost anyone who needs help from a government program for a new or growing business can find what they need.			

Topic D In my province:

		DK	T	F
1	Primary and secondary education provides adequate attention to entrepreneurship and new firm creation.			
2	Colleges and universities have enough courses and programs on entrepreneurship.			
3	The level of business and management education is truly world-class.			

Topic E In my province:

		DK	T	F
1	Technology, science, and other knowledge is efficiently transferred from universities and public research centers to new and growing businesses.			
2	New and growing firms have just as much access to new research and technology as large, established businesses.			
3	Acquiring the latest technology is too costly for most new and growing firms.			
4	There are adequate government subsidies for new and growing firms to acquire new technology.			

Topic F In my province:

		DK	**T**	**F**
1	There are enough subcontractors, suppliers, and consultants to support new and growing firms.			
2	The costs of subcontractors, suppliers, and consultants are much too high for new and growing firms.			
3	It is difficult for new and growing firms to get high quality subcontractors, suppliers, and consultants.			
4	It is easy for new and growing firms to get good, professional legal and accounting services.			
5	It is easy for new and growing firms to get good banking services (cheque accounts, foreign exchange transactions, letters of credit, and the like).			

Topic G In my province:

		DK	T	F
1	The barriers to market entry are too high for new and growing businesses.			
2	It is often too costly for new and growing businesses to enter new markets.			

Topic H In my province:

		DK	T	F
1	The physical infrastructure (roads, utilities, communications, waste disposal) provides good support for new and growing businesses.			
2	It is not too expensive for a new or growing business to get good access to communications (phone, Internet, etc.).			
3	New and growing businesses can afford the cost of basic utilities (gas, water, electricity, sewage).			

Topic I In my province:

		DK	T	F
1	People prefer to work for well established organizations rather than new firms.			

Topic J In my province:

		DK	T	F
1	It is easy to get the information required to assess business opportunities.			
2	People know how to manage a small business.			
3	Opportunities to create truly high growth businesses are rare.			

Topic K In my province:

		DK	T	F
1	Most people believe that the creation of new or high growth businesses is very difficult.			

Topic L In my province:

		DK	T	F
1	Many people can react quickly to good opportunities for a new business.			
2	Many people have the ability to organize the resources required for a new business.			

Topic M In my province:

		DK	T	F
1	Most people consider becoming an entrepreneur as a desirable career choice.			
2	Successful entrepreneurs have a high level of status and respect.			
3	You will often see stories in the public media about successful entrepreneurs.			
4	Most think that people start new firms only if they cannot find a good job.			

Section C

BACKGROUND INFORMATION

To help us form a picture of the background and experience of our key informants, please answer the following questions.

1 Gender (tick one): Male ☐ Female ☐

2 When were you born? (year) _____

3 Please indicate your educational attainment (tick all that apply)

University or College Degree ☐
Professional training (MS, MBA, LLB, MD) ☐
Graduate scholarly work (MA, PhD) ☐

4 When did you complete your most recent educational degree program?
(year) _____

5 Nature of professional training:
(e.g., engineering, general business, law, accounting, public administration, finance, economics, etc)

6 Current work responsibilities or job description:
_____
_____
_____

7 How long have you worked in your current position? (years) _____

8 How long have you worked for your current organization? (years) _____

9 How long have you worked in areas connected to entrepreneurship? (years) _____

TO BE COMPLETED BY RESEARCH STAFF:
Date completed: |__|__|__| Respondent ID: |__|__|__|__|__|__|__|__|__|

Annexure D

CONSENT E-MAIL TO PARTICIPATE IN RESEARCH

To investigate the impact that a quality management system has on small, medium and micro enterprises in the Durban Metropolitan area

You are asked to participate in a Master's research study conducted by Cheryl-Anne Kain.

The Masters programme is conducted by the Department of Operations & Quality Management at Durban University of Technology. This project is conducted as a Master's thesis. Your participation in this study is entirely voluntary. Please read the information below and ask questions about anything you do not understand, before deciding whether or not to participate.

You have been asked to participate in this study for the following reasons:

- you have been certified with the ISO 9001 quality management system;
- you appear on the data base of SABS and
- you are based in the Durban Metropolitan area.

The target population will consist of 20 SMME's in the Greater Durban Area that have implemented the ISO 9001 quality management system.

PURPOSE OF THE STUDY

This research study intends to provide evidence that the ISO 9001 QMS does contribute to the success of SMME's in the Greater Durban Area. This study is therefore important for the following reasons:

- It will attempt to establish the level of awareness that SMME's have of ISO 9001
- It will identify how SMME's in the Greater Durban Area have benefited from being ISO 9001 certified over a period of two to five years.
- It will determine the obstacles that prevent SMME's from implementing the ISO 9001 QMS in their organizations.

The outcome of this research is to make recommendations on how to improve quality in SMME's.

If you volunteer to participate in this study, you will be asked to answer questions posed by the researcher which will focus on the impact, if any, that the ISO 9001 QMS has had on

your organization. These questions will be informal allowing you to speak freely on the subject. A cell phone backed up with a laptop will be used to record the interview. The interview should last for 30-45 min max.

The interview will be treated in the strictest confidence. We assure you that none of this information will be released into the public domain. We will also remove, if possible, names, logos and company titles from the information gathered to avoid such problems.

No financial or other benefits will accrue as a result of participating in this research project. The benefits of this study are to better understand the perceptions SMME's have of quality management systems and how beneficial these systems have been for those who invested in them. The potential benefits of this information will enable SMME support organizations to invest more resources to SMME's who want to implement a QMS

PARTICIPATION AND WITHDRAWAL

You can choose whether or not to be in this study. If you volunteer to be in this study, you may withdraw at any time. You may also refuse to answer any questions you do not want to answer.

IDENTIFICATION OF RESEARCHER

The researcher will identify herself by her student card and I.D.book. If you have any questions or concerns about this research, please contact:

Trevor Naidoo

Head of Department – Operations & Quality Management

Ph: (031) 3735158

Email: rnaidoo@dut.ac.za

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____

Printed Name of Subject

Signature of Subject	Date
Signature of Witness	Date

DURBAN UNIVERSITY of TECHNOLOGY

To Whom It May Concern:

This letter confirms that any data/ information submitted or presented by Ms. Cheryl Kain in the MTech: Quality programme, will be treated with the strictest confidence. We assure you that none of this information will be released into the public domain.

We also urge students to remove, if possible, names, logos and company titles from their research to avoid such problems.

I trust that this declaration satisfies your requirements.

Regards

Trevor Naidoo

Head of Department – Operations & Quality Management

Ph: (031) 3735158

Email: rnaidoo@dut.ac.za

Monday, September 05, 2011