

**UNIVERSITY OF KWAZULU-NATAL**

**EFFECT OF TOTAL QUALITY MANAGEMENT IMPLEMENTATION  
AT**

**PFISTERER (Pty) Ltd**

by

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## Abstract

According to history, organisational success is crucial for the sustainability. The main focus for any business is to retain customers while in the process of gaining more. Both Public and Private Sector have identified Total Quality Management as a tool for survival. TQM is largely used in the private sector; the disadvantage is that there is little empirical knowledge about whether it works positively or not. This study contributes to empirical knowledge of the effects of TQM implementation at PFISTERER a manufacturing firm. This research analyses the relationship between TQM implementation and four intermediate outcomes which are: teamwork, job satisfaction, trust, and customer feedback. The study mainly focuses on the effectiveness of TQM implementation on these outcomes which are deemed crucial.

Quantitative analysis was applied for this study, a random sample of 62 employees was selected. The results show that TQM implementation does impact positively on the outcomes which are trust, teamwork, job satisfaction and customer feedback.

The study conducted at PFISTERER revealed that there are positive results that flow from a well implemented Total Quality Management. Key findings from literature, fieldwork, conclusions and recommendations are illustrated in this study.

Organisations implementing TQM must ensure that there is top management commitment. Employees should be empowered to take unilateral decisions, they must be always be involved in decision-making. This will bring about trust, teamwork, good customer feedback and job satisfaction.

## TABLE OF CONTENTS

Declaration of Own Work	(ii)
Acknowledgements	(iii)
Abstract	(iv)

### CHAPTER ONE:

#### INTRODUCTION TO THE RESEARCH

1.1	Introduction	1
1.2	Brief History of the Organisation	2
1.3	Overview of Total Quality Management at PFISTERER	2
1.4	Overview of Total Quality Management	4
1.5	Evolution of Total Quality Management	4
1.6	Total Quality Management in Private Sector	5
1.7	Problem Statement	5
1.8	Objectives of the Study	7
1.9	Limitations of the Study	8
1.10	Importance of this Study	9
1.11	Structure of the Study	9
1.12	Conclusion	10

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

2.1	Introduction	12
2.2	Description of Total Quality Management	12
2.3	Major Principles of Total Quality Management	15
2.3.1	Teamwork	15
2.3.2	Customer Focus	16
2.3.3	Top Management Commitment and Leadership	18
2.3.4	Training	19
2.3.5	Cultural Change	19
2.3.6	Continuous Improvement	20
2.3.7	Total Involvement	21
2.3.8	Job Satisfaction	21
2.4	Citizenship and Corporate Responsibility	22
2.5	Empirical Research on Total Quality Management	22
2.6	Customer and Employee Satisfaction	26
2.7	Limitations in the Implementation of Total Quality Management	29
2.8	Quality	30
2.9	Conclusion	32

## **CHAPTER THREE:**

### **RESEARCH METHODOLOGY**

3.1	Introduction	33
3.2.	Aim of the Study	33
3.3	Participants and Location of the Study	34
3.4	Research Approach	34
3.4.1	Qualitative Research	34
3.4.2	Quantitative Research	35
3.5	Population and Sample	35
3.6	Development of Instrument	36
3.7	Questionnaire/Research Question	36
3.8	Data Collection	37
3.9	Pretesting and Validation	38
3.9.1	Reliability	38
3.9.2	Validity	38
3.9.3	Pilot Study	39
3.9.4	Ethical Considerations	39
3.10	Descriptive Statistics	39
3.11	Profile of Sample	40
3.12	Inferential Statistics	40
3.13	Analysis of Data	40

3.14	Limitation of the study	41
3.15	Fieldwork	41
3.16	Conclusion	41

## **CHAPTER 4**

### **RESULTS AND STATISTICAL ANALYSIS**

4.1	Introduction	42
4.2	Reliability and Validation	42
4.2.1	Reliability	42
4.2.2	Validity	43
4.3	Descriptive Statistics	46
4.3.1	Profiles of Samples	46
4.3.2	Feel for the Data	57
4.4	Inferential Statistics	57
4.4.1	Intercorrelations between dimensions	58
4.4.2	Influence of the Biographic Variables on the Dimension	59
4.5	Conclusion	63

## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

5.1	Introduction	64
5.2	Findings from Literature Study	64
5.2.1	What TQM Authors Say will Occur	64
5.3	Findings from Primary Study and Recommendations	66
5.3.1	Objective 1	66
5.3.2	Objective 2	67
5.3.3	Objective 3	68
5.3.4	Objective 4	69
5.4	Benefits of this Research	70
5.5	Limitations of the Study	72
5.6	Suggestion for Future Research	72
5.7	Conclusion and Recommendation	72
	Bibliography	74

## List of Tables

Table 4.1	Reliability Statistics for Questionnaire	43
Table 4.2	Reliability statistics for Dimensions	43
Table 4.3	Rotated Component Matrix	44
Table 4.4	Responses related to Teamwork Dimension	50
Table 4.5	Responses related to Job Satisfaction Dimension	51
Table 4.6	Responses related to Trust Dimension	52
Table 4.7	Responses related to Customer Feedback Dimension	54
Table 4.8	Mean and Standard Deviation of the Dimensions	57
Table 4.9	Pearson's Correlation among Dimension	58
Table 4.10	t-test- Dimensions by Gender	59
Table 4.11	f-test- Dimensions by Race	60
Table 4.12	f-test Dimensions by Age	60
Table 4.13	f-test- Dimensions by Highest Qualification	61
Table 4.14	f-test- Dimensions by Position	61
Table 4.15	f-test- Dimensions by Tenure	62
Table 4.16	f-test-Dimension by Current Position	62

## List of Figures

Figure 4.1:	Percentage Gender Group	46
Figure 4.2:	Percentage of Age Group	47
Figure 4.3:	Percentage of Racial Group	47
Figure 4.4:	Percentage Academic Qualification	48
Figure 4.5	Percentage Position in the Organization	48
Figure 4.6	Percentage years employed	49
Figure 4.7	Percentage Years in Position	49

## **APPENDICES**

Appendix 1 Ethical Clearance

Appendix 2 Gatekeeper's Letter

Appendix 3 Informed Consent

Appendix 4 Questionnaire

# CHAPTER ONE

## INTRODUCTION TO THE RESEARCH

### 1.1 Introduction

Over the years, private sector companies have realised due to competition and increased customer demands for good quality products and services, for them to survive and grow they have to embrace a culture of doing things right the first time. The concepts of quality and innovation have become guiding elements for performance, productivity and efficiency. According to Anand (2006), quality has been one of the more important issues for many years in most organisations. Earlier focus on quality evolved from inspection, to quality control and then later to quality assurance. Total Quality Management (TQM) is defined as, "The art of managing the whole to achieve excellence" Besterfield, (2003). Considering this definition, TQM may be extremely subjective in its implementation and monitoring processes. It can be seen that by monitoring both success and failure, TQM may be extremely subjective in its implementation. According to Ehlers (2009), the subjective nature of TQM issues indicates that management and employees' viewpoints and experience can greatly influence an organisation's TQM project.

According Davelin & Hand (1995), by the end of the century, there will be only two types of business: those that practise Total Quality Management, and those that have gone out of business. According to Raja, Bodla, Malik (2011) TQM, having passed through a number of phases since the 1920s, is one of the most popular and durable management concepts. According to Kondo (1997), quality is the source of employees' empowerment and it must be practised all times in order to build trust inside and outside the organisation through organisational management. TQM is a collection of principles, techniques, processes and best practices that, over time, have proven effective Sashkin & Kiser (1993). In business there is growing recognition within the manufacturing sector that isolated improvements in particular aspects of business are no longer adequate, and that a holistic strategy is needed to bring competitive advantage into the market place. This can be achieved by adopting the TQM philosophy. This is not just concerned with

services, process development and customer delivery, but also with relationships with suppliers, customers, and with commercial and managerial processes contributed by all employees, no matter where they work in the organisation. Within the organisation there are immediate outcomes that can lead to better performance in terms of teamwork, customer feedback, trust and job satisfaction. In this study all these outcomes were investigated at PFISTERER, a manufacturer of heavy electrical components and their main customer is Eskom.

## **1.2 Brief History of the Organisation**

PFISTERER is rated as one of the world's top company names in electrical engineering. The company develops and manufactures elements and systems for power supply. With more than 80 years' experience, an intuitive flair for trends and innovation and the dedication of some 1 200 employees, have made PFISTERER what it is today: the market leader in many fields. Their slogan is, "Power needs to flow safely and maintenance free." PFISTERER develops solutions and products for voltages of 500V to 765 in four divisions, viz., Cable Systems, Overhead Lines, Components and Railway Systems. Their website is [www:pfisterer.com](http://www.pfisterer.com).

## **1.3 Overview of Total Quality Management at PFISTERER**

According to some important quality documents from PFISTERER, using a strategy of continuous improvement and teamwork the company is dedicated to establishing the highest industry standards for quality, service, value and technology. The organisation achieves this heightened quality control this through recognition and proper understanding of company stakeholder's requirements including:

- Customers
- Shareholders

- Employees
- Statutory, regulatory and environmental requirements.

They further state the company is committed to maintaining management systems according to ISO 9001: 2000 and are continually striving for improvement and excellence at all levels. In order to drive the improvement process they have established measurable objectives, which are defined in procedure QP: 01.03.

The quality policy together with other objectives is regularly reviewed during management review meetings in order to ensure their continued suitability. The policy applies to all personnel within the organisation. The quality manual is everyone's introduction to the company and actions are taken to ensure compliance with the required standards. Their manual is issued to both internal and external parties, either as a controlled copy or an uncontrolled copy. The responsibility for the contents and approval of the quality manual lies with the executive management of the company and the quality manager, who in this case is appointed as the management representative.

PFISTERER ensures that suitable resources and adequately trained resource requirements are identified and appointed at the appropriate time for the performance of work verification. The quality manager reports to the managing director and his duties include:

- Ensuring that all processes needed for quality systems are established implemented and maintained.
- Reporting to top management on performance of the quality management systems and need for improvement.
- Ensuring the promotion of awareness of customer requirements throughout the entire organisation.
- Liaison with external parties on matters that relate to quality management system.

Management review meetings are held once a year and during these reviews the quality manager is expected to present the following:

1. An overview of audit findings including internal and supplier audits.
2. A summary of any non-conformance issues received from all involved parties
3. A report on actions taken to resolve issues mentioned above.

Their quality system is based on the four tier system. The first tier is the quality manual, the second tier is the quality procedures and process description manual, the third tier is the process control sheets and the fourth tier is the verification reports for compliance.(Pfisterer quality manual 2009).

#### **1.4 Overview of Total Quality Management**

According to Sashkin, Kissler (1993), TQM means that an organization's culture is defined by the constant attainment of customer satisfaction, through an integrated system of tools, techniques and training. This always involves the continuous improvement of the company, resulting in high-quality products and services. It is clear that a return on investment in the implementation of TQM cannot be recognized immediately, but authors like Summers (2009), who have written about TQM say that it can save from 10 to 20 per cent of the operating budget. This is supported by authors like Sultan and Simpson (2000).

#### **1.5 Evolution of Total Quality Management**

According Dale & Lockwood (1994), the quality of any product can be defined by the customer; he also states that consistency when doing business is vital and always exceeding customer expectations is very important in quality management, this was supported recently Yeung (2007).

They further indicated that quality is defined by the customer as a tool for achieving satisfaction to the demands of the business. They argue that during the pre-industrial revolution quality was largely experiential and purely subjective. For the survival of any business, the art of mastering the science of manufacturing goods and mystery of trade became very essential in the production of quality goods and services. The concept and the skills must be passed on to future generations as well as the knowledge obtained through product development phases. The quality should be maintained with more defined and stricter laws, punitive measures (in case of wastage) and trademark restrictions, (Gitlow and Gitlow 1995).

## **1.6 Total Quality Management in the Private Sector**

Private sector companies that wish to promote business efficiency and effectiveness understand that TQM must be truly organization-wide, and must start at the top with the senior management.

## **1.7 Problem Statement**

According to Townsend and Joan (2006), TQM is the collection of principles, techniques, processes and best practices that over time have been proven effective in enhancing the quality of service. Most world-class organisations exhibit behaviour that is typically identified with TQM. It is well mentioned by a number of authors that the TQM culture, developed as a management tool and approach, originated as early as the 1950s and became more used as a tool in the 1980s. According to Hardcastle (1994), total quality management mainly describes the attitude, culture and the functioning of the company striving to ensure provision of customers with products and services that will satisfy their needs in all aspects. He further states that TQM in all instances requires quality in all the company's operational aspects. The processes must always be implemented correctly from the beginning to ensure waste eradication from all operations. Waste eradication is

the key concept of TQM. In TQM, it is most significant that the resources provided in implementing TQM bear results that can be proven or identified.

According to Deming (1990), the nature of TQM implementation speed varies by setting and it always varies in implementation practices. Most TQM experts acknowledge that companies should always tailor their implementation to their own companies' maturity level, environment and the actual size of the organisation. According to Atkinson (1990), the problem is the bigger the organisation the longer it takes for identifiable success signs to appear. He further states that TQM initiatives can differ because of quality methods employed, by different management styles and unique cultures. This is also confirmed by authors like Anand, Ward and Takitonda (2010).

The other main problem is that there is not much empirical literature/knowledge on the effects of implementation of TQM in all sectors i.e. private and public sectors. According to Wilson & Durant (1994), there is a serious dearth of empirical literature on various efforts of TQM implementation in both the public sector and private sector organisations. Deming (1986) states that there should be no distinction between public and private sector as all industries should be subject to the same management principles. This is a very significant point as there are chances that the practitioners will ensure that specific steps are taken towards effective implementation of TQM. This can help practitioners to know that if they embark on a certain process, certain results will be realised for the benefit of the organisations. The main problem is that during implementation of TQM, it is uncertain how much of expected outcomes will lead to positive results.

In this study a manufacturing firm was utilised to conduct an experiment to determine the effects of TQM implementation on outcomes that are believed to lead to enhance the quality of service as well as production. The company that was used is PFISTERER (PTY) Ltd. This study focuses on the way TQM interventions or implementation affected positively the outcomes which are believed to enhance the quality of service in the organisation.

The problem that was researched was that it was perceived that the quality management process at PFISTERER was not as efficient as it could have been. This perception was supported by operational staff and supervisors. It was then decided to research the effectiveness of Total Quality Management programmes within the company to determine its effectiveness and also whether it can be improved.

### **1.8 Objectives of this Study**

The purpose of this study was to contribute towards a better knowledge and understanding to practitioners of what the effects of implementation of TQM could be in the manufacturing industry on the deemed outcomes, which are set to enhance the performance of the organisation. The study focuses mainly on the private sector and the manufacturing and hence PFISTERER Pty Ltd a manufacturing firm was selected for research purposes. The firm is known to have implemented the subject of TQM interventions in all their activities. However, little is known to have implemented TQM in all their activities, but little is known on how implementation of TQM positively affects outcomes such as teamwork, job satisfaction, trust and customer feedback which are deemed to be crucial for a successful organisation. Based on the outcome of the study, the company may well invest even further in enhanced operational activities. Therefore, it is critical that these elements are tested in relation to TQM.

The study was designed in such a manner that it analyses the effects of the implementation of TQM on what is deemed as critical outcomes, which are the core elements of any successful organisation. The critical outcomes and objectives that were tested are listed below.

- To determine the effect of TQM implementation/interventions in improving teamwork amongst employees. i.e. Does implementation of TQM bring about good teamwork amongst employees?

- To determine the effect of TQM implementation on job satisfaction for employees within the organisation i.e. Does implementation of TQM bring about job satisfaction on individuals within the organisation?
- To determine the effect of TQM implementation on the level of trust amongst everyone in the organisation i.e. Does implementation of TQM yield trust amongst employees in the organisation?
- To determine the effect of TQM implementation on positive customer feedback i.e. Has the implementation of TQM leveraged the organisation to receive positive customer feedback?

The study conducted was by distributing a questionnaire to 62 employees at PFISTERER. The results provide useful feedback for future interventions of TQM. It will also guide the company on whether they should invest more resources in the future to enhance TQM. The study will provide useful material for future research into the field of TQM implementation in the manufacturing sector.

### **1.9 Limitations of the Study**

The study was conducted, and a sample was obtained, however, owing to the nature of the business, it was difficult for all the employees to leave work and focus on the questionnaire. PFISTERER is focusing on TQM and has set standards and procedures employees must follow in the production processes. This made it impossible to get a larger number of employees to respond, however a figure of 62 employees was agreed upon.

### **1.10 Importance of this study**

- PFISTERER invests a great deal of time, finance and commitment in ensuring that quality is maintained in all aspects of the business. This research is important in illustrating whether the investment in quality at PFISTERER benefited the organisation through the elements that are deemed crucial for any successful business. Before the company invests further in TQM interventions it is important for PFISTERER to know how TQM influences some important outcomes. The outcomes for seem to be best demonstrated and performed if TQM is implemented successfully as follows.
- Job satisfaction - it is very important for an organisation to know how satisfied employees are with their job.
- Trust - it is important for the organisation to know how much of trust exists amongst each employee.
- Teamwork – it important for the organisation to know how employees work together as a team in achieving organisational goals.
- Customer feedback – it is important for the organisation to understand what the outside world is saying about its operations and customer service and also know how positive customer feedback is on services they provide.

### **1.11 Structure of the Study**

This research is made up of five chapters, outlined below.

Chapter One: Introduction

This chapter presents the statement of the problem, the research problem, and the significance of the study. It also includes the background of the company where the research was conducted. There is also a brief review of literature on TQM in its various aspects.

## Chapter Two: Literature Review

This chapter contains a literature review for TQM. A literature review is most critical in demonstrating awareness and knowledge of TQM.

## Chapter Three: Research Methodology

In this chapter the main focus is on the way in which the study was conducted. Sampling, data collection, analysis and processing is also described. Data was obtained from the questionnaire. Validity, reliability and ethical considerations and limitations of the study are also discussed.

## Chapter Four: Results and Statistical Analysis

In this chapter using various methods the results of the research are presented, analysed and discussed. The results are obtained through processing the data using SPSS.

## Chapter Five: Recommendations and Conclusion

In this chapter recommendations and conclusions are presented, as well as the conclusion from research findings on the effect of TQM at PFISTERER following expected success outcomes.

### **1.12 Conclusion**

In recent years it has become more significant that companies try to minimise on wastage caused by inferior quality and lack of proper guidance. The concept of TQM is the main tool that can be used for survival of companies. TQM implementation also ensure that organisations receive a return on investments by producing better quality products. PFISTERER is a manufacturing firm with several customers, amongst them ESKOM. They have the past years implemented TQM initiatives in all aspects of their business. It is understood that, if TQM is well implemented it can give rise or the existence of intermediate

outcomes such as are trust, teamwork, job satisfaction and positive customer feedback.

This report presents a case study of PFISTERER on the effect of implementation of TQM. The study was conducted in their premises in Pietermaritzburg. Firstly the approach was to meet the quality manager to establish if the company could accept such a study and briefly to understand their involvement in TQM issues or concepts. The structured questionnaire was created and distributed to 62 employees ranging from senior management down to junior levels. Each questionnaire consisted of 20 questions with four dimensions, which are teamwork, trust, job satisfaction and customer feedback. All employees were required to sign the informed consent form. The next chapter presents the literature review undertaken on topic under investigation.

# **CHAPTER TWO**

## **LITERATURE REVIEW**

### **2.1 Introduction**

The main purpose of this chapter is to present the theoretical part of Total Quality Management and some of its components. A critique of theory of TQM, in this chapter helps in gaining a deeper understanding of TQM. Further, it demonstrates the benefits of TQM practices for business success. Most organisations are on the alert to gain a competitive edge, this is done by using various methods that have already been tested as the best way of beating competitors. According to Ehlers (2009), the companies that strive to produce better quality products and services compared to their competitors have an edge over their competitors. Empirical research conducted by other authors is presented briefly in terms of their findings in support of effectiveness of TQM practices in organisations.

### **2.2 Description of Total Quality Management**

According to Kanji & Asher (1997), Total Quality Management is the system of all activities directed to achieve empowered employees, delighted customers and higher revenues at lower costs. They believe most quality problems are caused by management rather than employees. One could argue how this is possible, but the reality is poor guidance from management can lead to problems. This definition can be a clear guide that can assist organisations to become TQM oriented. According to many authors like Deming (1990), Crosby (1979), Ishakawa (1985) and Juran (1988), in a common definition they say TQM is a management philosophy known to be generally accepted in America and Europe as a strategy for improving the productivity of all institutions. However, it is important to note several definitions are used to define TQM philosophies, strategies, approaches and processes. The common definition is very important in preventing confusion among employees, and to resolve disagreements that arise from time to time between departments in an institution upon implementing TQM. According to

many authors like Dean & Bowen (1994), Wood (1997) and others the clear common definition of TQM is a:

- culture;
- management of institutions processes,
- management philosophy with guiding principles,
- strategy, and
- system.

According to Shanin (2011), TQM is defined as a process and strategy used to manage an organisation as an integrated system of all methods, principles, and best practices that can provide a framework for the organisations, in order to achieve excellence in almost everything they do or produce guided by the leadership and top management commitment and supported by training and education. Authors like Yong and Wilkinson (2002), say change management, support structures and system resources can be a pillar of support for the successful implementation of TQM.

The organisation must ensure employees are empowered through allocating adequate funds to spend on various investment interventions and the ultimate goal of this is improved performance (Khan, 2003). This can be supported as clearly there should be return on an investment. This must be the culture for organisations who want to beat competitors. This is important as the organisations are guaranteed they can survive the future through guaranteed improved quality of services and products.

Deming (1986: 23), gives the following 14 points as key to the definition of Total Quality Management.

- 'create constancy of purpose towards improvement' (long term planning needs to be established so that it replaces short term planning).
- 'adopt a new philosophy' (the outcome is leadership must adopt a new philosophy and move away from thinking employees are the only ones to do so).

- 'cease dependence on mass inspection' (if wastage and quality deviations are reduced, then there is no need to worry about inspection on manufactured items for defects).
- 'adopt a single supplier for one item' (many suppliers always mean variations between feedstock).
- 'at all times continuously improve ' (allow the systems to reduce variation)
- 'institute training of all employees from time to time' (adequate training and continuous training warrants all employees will improve working standards thus ensuring better quality and opportunities for new product development, skills acquired through training and retraining improve performance and better delivery of quality services).
- 'institute leadership' (there is always a difference between leadership and supervision, a leader always produces better guidance to employees than a supervisor)
- 'drive out fear' (ensure that the environment created is not of fear as if employees live in fear, that will count negatively towards production, employees must be supported and have a sense of belonging in an organisation).
- 'staff areas must work together' (ideally it is important there are no barriers between departments. Units within an organisation must not only serve management, but also other units that use their outputs and ensure there are no demoralising factors created as that is a recipe for division, which causes harm and slow progress in the production of goods and services).
- 'eliminate quotas' (if there are quotas within the organisation this can only affect the staff members negatively as they will find themselves demoralised, thus production is then affected).
- 'Removal of barriers to pride workmanship' (the employees should be given a chance to take pride in the work they produce, employees should be given incentives which will encourage them to take pride and even produce better quality goods for the organisation)
- 'start a programme of education and training' (education should be allowed to be broad, it should not only be specific to the job. An organisation should

encourage employees to learn as organisations need employees who are improving on a daily basis. Training and education allows employees to adapt easily when there is a change in procedures or new product development).

- ‘always take action to accomplish transformation’ (management should lead by example; management should also allow transformation at all costs. Learning must be encouraged through various forms of training from time to time on the job).
- ‘eliminate management by objectives’ (strive to ensure there are set production targets set.)

The above 14 points of Deming should be adapted by all businesses that want to achieve best results in implementation of TQM. The organisations can take these points and put them in the form of a checklist and start to gauge themselves through their compliance officers if they are on the right track.

## **2.3 Major Principles of Total Quality Management**

### **2.3.1 Teamwork**

According to Oschman, Stroh and Auriacombe (2006), teamwork helps the commitment of employees to achieve objectives and organisational goals, they identified teamwork as the key feature of involvement. According to Nkechi (2010), team work actually contributes to the series of improvements that are proposed amongst teams, he further states teamwork is the tool for stimulating positive attitudes towards work. It can be argued that if improvements are proposed amongst teams they will find a way of changing attitudes of those employees resistant to change. According to Slack, (2004), teamwork is necessary for the success of the organisation in order to engage in non-competitive activities internally among all employees and externally with respect to suppliers. He further highlighted four benefits of team work that can be summarised as follows:

- The team work boosts employee's morale and ownership, (this can be confirmed by ensuring full participation in decision making and problem solving by employees).
- Grouping together and attacking problems as teams give quicker solutions as there is a greater variety of ideas (pulling minds together always gives a bigger platform for tackling problems as well as cohesiveness).
- Recommendations made collectively by a team are easily accepted and the implementation part is also more flexible (it is always difficult for employees to only be given directions without their input, but once the chance is given for collective decision making, processes and implementation become more easier).
- Pooling of resources together in problem solving (this can be done when solving complex problems where teams can be pulled together, thereby shortening the period of problem solving.)

It cannot be denied teams are used to build and transform the workplace from low commitment to high commitment. The four key points as illustrated above, if taken into consideration and put into practise can help the organisation to successfully implement TQM.

### **2.3.2 Customer Focus**

According to Sweney and Mcfarlin (2005), TQM is a tool that focuses on the customer's needs and satisfaction, and that most companies try harder to exceed customer expectations in their daily operations and in their long term planning. According to Yeung (2007), keeping customers in mind while designing and producing new products gives the assurance for an organisation that the product will sell. As global markets are expanding the number of reliable potential customers decreases. This situation arises mainly because customers tend to have a variety of choices in the market. He further states the only way of retaining customers is to ensure the needs of customers and their expectations are met,

while in the process guaranteeing the desired quality product expected by customers.

It can be confirmed in the trend of business that improving global competition and increasing demand for more quality products by customers is the main reason for organisations to learn that the only way of keeping business is to deliver excellent quality products to meet customers desired needs. It can be observed that current growing organisations spend large amounts of funds on activities related to improving products and services in order to retain their customers. It is clear from the views expressed by the various authors like Wood and Logson (2001), who had written on the subject of TQM that customer focus is recognised and accepted as one of the most popular continuous improvement tools or systems.

According to Liker (2004), organisations that focus mainly on customer needs will operate for decades, this will mainly be driven by compatibility of customer's needs. According to Kotler (2000), the field of customer satisfaction is increased by the participation of personnel in all processes. It is envisaged the desired goal of TQM is the implementation of management systems and organisational culture that can ensure customers are satisfied.

According to Joiner (2007), both public and private sector, organizations are focusing on improving customer service and reducing production costs. According to Mullins (2005), the organisations that will succeed in business and their operations are those that strive to meet their customer needs without compromising on quality. It is crucial to understand companies do not have infinite resources to pour into customer service. They must focus on the important elements, and they must perform customer service efficiently (Spector 2000).

According to Eriksson (2002), the first theme is that management should focus on creating and delivering the best net value to the customers in the process not maximizing stock price but receiving adequate return on investment or shareholder equity. This is essential in organisations as in most instances if this is not done an organisation will only focus on money coming in and not notice a loss of customers.

### **2.3.3 Top Management Commitment and Leadership**

According to Pratogo, Anussornntisarn, Helo and Dwight (2009), management must be dedicated to regular improvement of quality, not simply one-step improvement to an acceptable plateau. According to his literature the following ideas can be set out in a companies' quality policy:

- identify customer's needs
- assess the ability of the organisation to meet these needs economically,
- ensure bought-in materials and services reliably meet required standards of performance and efficiency,
- concentrate on prevention rather than detection philosophy,
- educate and train for quality improvement,
- measure customer satisfaction, and
- review the quality management systems needed to maintain progress.

Organizational leadership is the key responsibility for an organisation in all aspects of management, operation and performance. Thus, the full responsibility for any TQM implementation is always the key performance area for top leadership. It can be argued that without proper top management understanding of TQM interventions, it may fail before it starts. According to Deming (1982), principles and practices of TQM always vary depending on an organisation and its specific functions and tasks related to the kind of service they produce. Deming further says there is no disagreement as to how important the leadership of top management is in implementing TQM. According to Savolainen (2000), leadership is the core of all interventions and strategies for implementation of TQM. It can be confirmed organisations that have succeeded in ensuring total quality management works, have exercised strong leadership and at all times leaders have been leading by example. According to Kiser & Sashkin (2005), leadership is always defined in TQM implementation as the means of providing and driving the vision of an organisation. It is common knowledge all organisations that have been seen to have poor leadership that they don't last long and most of them are forced to shut down. Thus it can be concluded TQM will always require long term commitment from top management and leadership. This requires that leadership

or top management must familiarise themselves with TQM elements and principles before any direction is given to employees.

#### **2.3.4 Training**

According to Maria (2007), employees should be prepared and trained towards being able to manage TQM ideology in production processes. He further states that training is able to equip employees with necessary techniques and skills for quality improvement. This is critical as organisation should not expect results quality production can be yielded automatically. Maria argues when employees are trained that they are able to identify all opportunities associated with improvement as through training they are equipped with the skills and knowledge for the tasks they perform. Well trained employees will contribute towards improvement of processes in production. Maria further mentions development programs and training should not be once off events, but lifelong processes of the organisations. This is critical to help the organisations to get things right the first time and minimise wastage. Maria further argues that organisations must invest in future training in order to sustain quality production processes that change all the time.

#### **2.3.5 Cultural Change**

According to Mahmood, Mohammed and Misnan (2006), quality culture is mainly the design and arrangement of items of behaviour that has been adopted by the community as the acceptable way of solving problems. A firm with quality culture can be easily defined as one which has clear values and benefits that can foster total quality behaviour (Beckford, 2002).

Vorley and Tickle (2001), identified the main factors of TQM culture as teamwork, leadership, proper human resource management and customer satisfaction. It is evident from views on all authors on TQM that, quality culture is the main driver of successful TQM. Management, when referring to authors of TQM has important role in changing the culture of quality in the organisation. According to Saunders and Thornhill (2003), organisations without a quality culture cannot be successful in ensuring levels of performance are enhanced and improved. It is argued that a culture of quality is related to a number of factors which are organisational

behaviour, information technology, design of service, process management, strategy of business and the way decisions are made in an organisation.

According to Evans and Dean (2003), culture is effective on performance improvement of an organisation. According to Slack et al (2004), TQM is the manner of managing the entire business processes to ensure full customer satisfaction at every level, both externally and internally. Dale, (1999), says the approach to changing corporate culture of a firm is to be customer centric. This is important as in all organisations the key aspect is a happy customer. He defines quality as the culture that nurtures social responsibility, sense of membership of the organisation and a strong belief of continuous improvement for common good. He further states TQM emphasises the need for change from the traditional approach of quality management, which was well known as bureaucratic and gave no room for new ideas. The nature of change in most organisations remains difficult as the key element that needs to change first is people's attitudes. From time to time, it is critical that in order to implement total TQM practises, organisations need to focus on the need for flexibility to manage change.

### **2.3.6 Continuous Improvement**

According to Joiner (2007), achievement of the highest levels of competitiveness and quality will always require there is a well-defined approach which can be easily executed to ensure success and continuous improvement in an organisation. It is important to note the term continuous improvement mentioned by Flood refers to both incremental and breakthrough improvements. According to Johnson & Wood (1996), for the organisation to prosper the improvement must focus on work related activities of an organisation on a daily basis. According to them continuous improvement is a commitment to a constant examination of technical administrative processes in search of better methods. According to Ugboro and Anderson (2000), customer satisfaction can be easily attained by the relentless process that creates a service or product. It is clear continuous improvement aims at identifying and eliminating the causes of mistakes in order to

prevent them happening again. Sila (2007), says organisations that operate in a dynamic environment are liable to carry out continuous improvement in all its operations. The bottom line is that for sustainability of organisations they must be able to adapt to change. This is crucial for organisation to remain in bussiness.

### **2.3.7. Total Involvement**

According to Kaynak (2003), employee involvement was conceived to mean psychological ownership amongst members of the organisation. According to Evans and Dean (2003), TQM approaches involve broad employee participation, contribution in quality management processes, participation and interest. According to Dimitrades (2000), in terms of total involvement staff members are encouraged to perform a number of functions such as problem solving, decision making and information processing. Liker (2004) supports this statement and further say motivation is at the heart of TQM, in which involvement and empowerment in making decisions can be viewed as important for sustained results. The main requirement of total involvement of employees is to lift external and internal customers' satisfaction by the development of a flexible environment which allows innovation. The authors all concur that there should be total involvement of employees and it brings about better production.

### **2.3.8 Job Satisfaction**

According to Spector (1997), some definitions of job satisfaction are contradictory in nature; he defines job satisfaction in terms of how employees feel about their allocated jobs as well as different aspects of their job or tasks. According to Ebrahim and Adrian (2010), job satisfaction is the extent or manner in which employees like their jobs. It can be argued that all employees in any establishment want to be satisfied with their jobs. According to Smith (2004), job satisfaction is an effective response towards certain aspects of an employee's work. He further mentions the likely causes of job satisfaction as supervision, status, and job content, remuneration working conditions, promotion and the structure of the organisation. Kerry (2007), defines job satisfaction as individuals who are

effective, cognitive and evaluation of reactions towards their jobs. The definitions given by the authors imply that all organisations need to keep their employees satisfied and this brings about the best result in TQM implementation.

## **2.4 Citizenship and Corporate Responsibility**

According to A-Khalifa and Aspinwall (2008), corporate responsibility is the level of responsibility manifested in an organisation's operating practises and strategies which impact on stakeholders and the environment on a daily basis. They further say some level of responsibility is an important factor to any corporate action or decisions that have impact. It can be argued that corporate responsibility must be done because it is an integral part of operations and it forms the foundation of corporate citizenship. Corporate responsibility mainly refers to basic expectations of an organisation's business ethics, protection of environment, public health and safety. It is evident in many instances that organisations which strive to ensure corporate responsibility and citizenship produce better quality products as they operate peacefully without any comebacks from the surroundings.

It can be confirmed that if organisations don't follow pieces of, legislation leadership will find themselves battling in the courts rather than focusing on business, this can lead to inferior quality products produced and a tarnished image. According to this theory it must be clear for all organisations around the world that environmental issues should be taken seriously, thus pushing the organisation to comply in all aspects as required by legislation. As this study is mainly on the manufacturing industry there is a lot of waste material and how that is disposed must be in line with legislation. Good citizenship and corporate responsibility are some of the tools TQM organisations must follow to ensure successful implementation.

## **2.5 Empirical Research on Total Quality Management**

Christos, Fotopoulos & Evangelos Psomas (2009), discussed the impact of TQM practices on quality management results. They explained the relationship between a number of TQM practices such as leadership, strategic-quality planning,

employee management and involvement. In most cases customer satisfaction is measured by a decline in customer complaints and a constant increase in loyalty and a customer retention rate. It can be well confirmed all organisations will strive to retain and gain customers on a daily basis.

Empirical studies have been undertaken by various authors on elements of TQM and they are summarised below.

**Top Management commitment:** According to Lythgoe (2007), top management commitment to TQM occurs over a longer period. The study revealed processes implemented over a period actually bring about better results in TQM. In the beginning of the literature review, top management commitment is listed and explained as one of the key elements of TQM. It can be supported that top management commitment is the key to successful TQM implementation.

**Job levels:** According to Ally and Scholoss (2003), there is a bigger proportion of senior management that believed TQM had positive results in the culture of an organisation than its happening amongst the middle layer of managers and other employees. They found supervisors and managers were the ones who were more positive about levels of commitment to improvement and equity than were other employees which were not managers. This is the norm, but senior management must understand this is a process and as a result it needs patience as it takes time to get it right.

**Job satisfaction:** According to George and Jones (2008) job satisfaction is the set of feelings or responses to the job. His definition includes the definition by researchers investigating the same subject and job satisfaction. His study reveals the more employees were happy with their jobs the more positive is the outcome of TQM. This implies that any organisation which wants to be successful in TQM must ensure employees are satisfied with their jobs.

**Implementation strategies:** Authors like Cho (1994) and Shoop (1991), have found the critical TQM success factors are driven by people oriented factors such as communication, employee empowerment, leadership, employee commitment and involvement of employees in decision making. To achieve this,

implementation strategies must be put in place in a manner that all these critical factors of TQM are included in the process plan. In relation to this it's clear that strategic intervention is required which can bring about the process plan and implementation strategy that should be embraced by the organisation.

**Empowerment :** According to Smith (2004), employees must be empowered in all aspects of the organisation and in all processes involved. His study further reveals any organisation which keeps unnecessary secrets from employees will never have a successful TQM implementation. From different groups that participated in the survey it was shown the group that was not empowered, actually produced poor results leading to the failure of TQM.

**Organisational Climate:** According Joiner (2007), in his study he revealed the relationship between aspects of organisational climate and job satisfaction resulted in a finding that there is a significant correlation. Organisational climate according to his study is key to successful TQM implementation. It also reveals there is a relationship between organisational climate and job satisfaction.

**Organisational structure:** According to Esin and Cemal (2010) from the study they had undertaken they came to the conclusion that bureaucratic structures are poor as their hierarchy actually hinders participation in decision making. The disadvantage of such is that employees tend to be told what to do and are expected to conform to their job descriptions only and failure to do so leads to disciplinary processes. In their study it is revealed that where there was a poorly constructed structure bottom level employees got no access to communicate with management, this lead to them being excluded in decision making processes. What can be concluded here is organisations interested in being successful implementation of TQM must ensure employees at all levels are able to communicate with each other and actively participate in collective decision making.

**Participatory management:** According to Gerson and Horowitz (2002), authoritarian and democratic managers display different managerial styles. Their study demonstrated that democratic managers find that collective management

styles are associated with job satisfaction and yields positive results towards TQM style. Their study revealed that participatory management establishes good support and good relationships with employees, and this leads to pulling together to achieve organisational goals. They further revealed that having employees as part of decision making gives employees a sense of accomplishment. Conversely an autocratic manager makes decisions without consulting employees and the welfare of employees is not looked after. This poses a serious threat as employees always feel threatened and end up making mistakes for which the costs must be to the account of the employer. This has to do with job satisfaction, which is one of the TQM key elements emphasises the need for a happy and workforce that produces positive results in production.

**Effect of Age:** Raja, Bodla and Malik's (2011) study reveals that job satisfaction increased as employees get older because individuals in the organisation tend to adjust to work conditions. Their study revealed younger employees tend to be aggressive as they enter the organisation, as they feel they have new ideas that need to be explored, but as time goes on they adapt to a culture of the organisation. For the organisation it's important to have plans in place for allowing new employees to feel they are part of decisions that have already been taken; so the first step is to create an environment that allows for them to understand the organisation.

**Effect on Tenure:** A study conducted by Dali (2009), revealed that employees show long term changes in satisfaction levels, because the longer employees stay in the organisation they find themselves satisfied with their jobs. In his study, the findings revealed that employees for the first two years in an organisation are not satisfied, but as time goes by they become happier with their jobs. Management should be cautious of this and set up programs to deal with new employees to adapt more easily to the organisational processes, as failure to do so will lead to them resigning at an early stage. It is not healthy for an organisation to keep hiring new employees.

## **2.6 Customer and Employee Satisfaction**

Authors like George and Jones (2008), agree that customer service and satisfaction are the core of any institution and are the focus of TQM. This is true as if organisations want to keep their customers satisfied, then the solution is to focus on producing good products and TQM is one of the major tools that can be used to achieve this. Customer-driven quality should be the main focus of any institution, because this will ensure products and services are delivered with the objective of satisfying customer needs. According to Juran (1989), customers are the final arbiters of product and service quality, it is therefore important that their needs and requirements and the way in which services are delivered is generally understood. By understanding their needs the product should be of a quality they are happy with when delivered without comebacks, this will minimise costs when things are done correctly the first time.

According to Dubas and Nijhawan (2005), it must be acceptable when customers want to know not only what an organisation does, but also to know how it's done. This can also assist in ensuring the quality of goods produced is of a high standard. To achieve this, organisations should welcome customers when they want to know or understand the processes involved in manufacturing products. It is advisable the customers' needs be identified and appropriate product designs or service delivery be instituted to satisfy these needs. He further states the focus should be on the degree to which an institution's customers continually feel their needs are being met by products and services.

Kanji and Asher (1996), produced a customer contingency table which illustrates the level of customers' needs, according to them customer satisfaction must be continuously measured and analysed. They further state requirements of the final product for both internal and external customers can only be met when the requirements are assessed prior to any production of any product. According to them, the total quality programme must always begin by gauging customers' perceptions and expectations of the service to be provided by the institution. The information may also be gained from an internal feedback relationship between the internal customer and the supplier, known as quality chains. No matter how

efficient the administrative system of an institution, it can produce zero defects only if customers provide sufficient and accurate details to enable the quality process to meet their needs and expectations.

According to Mellahi, Frynas and Finlay (2005), some companies now have the luxury of focusing on customer satisfaction to such a point that making money has almost become an afterthought. Although money making can be an afterthought the result is growth in business due to greater value of income. It can be concluded that the ultimate competitive advantage is established when an institution develops a culture that supports both its internal and external customers.

It is argued by Mohammad (2005), that for a number of years managers have acknowledged job satisfaction will in future have important implications for an organisation to succeed. Indeed worldwide there has been enough evidence to believe job satisfaction of staff will always affect organisations' outcomes. He further argues that its almost common sense to say happy, satisfied workers are always more productive and efficient and also problems can be easily solved when employee satisfaction is increased and this will lead to production of quality products. According to Anand (2006), employee satisfaction should be equal to customer satisfaction in the institution's strategic and planning processes, so as to ensure best results. Employees are defined as all individuals employed by an institution, including full-time and part-time, temporary and contract workers. Employee satisfaction is the gratification and prosperity that employees gain from their employment. Every aspect that has to do with the influence of the job on the employee, as well as the perceptions of an employee of the job/institution, should be included in employee satisfaction.

The full potential of employees should be realised through shared values and a culture of trust and empowerment. According to Ali (2007), employees are critical stakeholders as they ultimately deliver the institutional outcomes required to meet the needs of stakeholders. There should be widespread involvement and communication to achieve employee satisfaction, and this should be supported by opportunities to learn and to develop skills. The level of satisfaction of employees

should be monitored and continuously improved. One way of achieving this is to develop the full potential of the workforce, which includes employee involvement, training recognition, safety and satisfaction. Many authors like Mullins (2005), Sweney & McFarlin (2005), say as employee satisfaction increases, an institution can expect its key performance and customer satisfaction indicators concomitantly to improve. Job satisfaction, job commitment and empowerment exemplify this. According to George & Jones (2008), to achieve employee satisfaction, the following should be in place:

- first, top management must be involved in modelling employee involvement. Employee involvement programmes take time and require extensive commitment from all institutional levels; this must be driven at top level to ensure success.
- for employees to participate effectively they need authority, information, knowledge and rewards relevant to the institutional performance and financial results, so employees experience the impact of their actions and work; without giving employees information they won't know how to tackle problems leading to poor performance of the organisation.
- reward systems that support participation by rewarding the initiation of change, and the fostering of team-building should be in place; reward systems always bring about better performance and healthy competition within an organisation.
- training in quantitative and qualitative aspects of decision-making and communication of institutional information are also critical parameters to ensure employee involvement; for sustainability as the world is evolving and quality products become the demand, training must be on top of the agenda.
- teams must be established to create involvement and to share power, or to utilise problem-solving tools; building teams can bring about trust amongst employees and result in quality products being manufactured.
- problem-solving tools are necessary for involving employees; the tools enable them to improve their job performance, and gives them more control over their environment; this is a recipe for quality products as an end result.

## **2.7. Limitations in the Implementation of Total Quality Management (TQM)**

According to Oakland (1995), there are factors that have been identified which are hindrances to successful implementation of TQM. In the main they include ideas like implementation can be bureaucratic, rigid, time wasting and sometimes impersonal. This can lead to failure due to ignoring interventions that can lead to the success of TQM. Some authors like Ugboro and Obeng (2000), in their research identified half-hearted or no commitment in implementation of TQM are some of the major reasons for its failure in almost all organisations. According to these authors most organisations are only willing to implement those aspects of TQM which are supported by the existing culture of the organisation. In their findings they reveal in most instances employees didn't feel part of all decision making processes and also their ability to contribute to improvement of quality was restricted due to limited authority granted to them to carry out their duties. According to Smith (2004), most quality management programs have been unsuccessful because they are short term. According to him implementation of quality throughout an organisation is not only the result of formalised programs, but requires a cultural change and new mind-set in the way processes and activities are conducted. According to Andrie (1994), who made an assessment, he claims adoption of incompatible quality approaches by organisations can result in failure of implementation of TQM, he stress delegation of quality management by senior leadership can result in the development of TQM bureaucracies that can be ineffective.

According to Sultan and Simpson (2000), lack of commitment from any particular unit in an organisation is also one of the major barriers to successful management of quality, in his assessment he confirms non commitment of management to quality management can be a major hindrance to successful implementation of TQM. According to Asher (1996), the clear observation is the need for management to actually drive the ideology of TQM processes in order for the

employees to be encouraged to follow easily and to give proof of management's commitment to quality. This is actually critical as senior leadership should lead by example.

According to Porter (1996), TQM is important for an organisation's productivity and efficiency, but this will not necessarily give an organisation competitive advantage over other organisations. He states TQM is not the tool to address strategic business issues like positioning strategies and differentiation.

According to McCabe and Wilkinson (1989), the failure of TQM is most of the time attributed to poor implementation methods adopted by organisations and it is not because of the principles of TQM itself. These authors believe TQM could only be successful if it is planned adequately and the plan is followed on implementation.

Another reason for failure of TQM is the emphasis given to individual rewards for TQM efforts. Deming (1990), argues any rewards will need to be tied to teamwork or departmental units rather than individuals. If organisations fail to award rewards to groups it might lead to unnecessary internal competition amongst employees and this can only have a negative impact on team performance which TQM promotes. Also high costs of providing and maintaining quality service are major hindrances to TQM implementation, in all organisations.

## **2.8 Quality**

According to Stahl (1995), in the manufacturing sector, quality is defined as a measure of excellence in production or as a state of being free from deficiencies, defects and significant variations. He further mentions quality is brought about by stricter and consistent commitment to certain standards that can achieve uniformity of the product so as to satisfy a specific customer or the user requirements. Vorley and Tickle (2001), define quality as the totality of features and characteristics of any product or service that bears the ability to satisfy the stated or implied needs. They further state that organisations should take quality as the key component in the strategy formulation. He further states quality must be taken as a macro function for an organisation, it must be present in day to day

running of an organisation, in all aspects such as policy establishment, decision processes, personnel selection, resource allocation, priority definition and service delivery to satisfy all customer requirements.

They also mention quality approach as a strategic element, has brought into organisations a new way of conceiving quality, this is because it engages top decision makers of the organisation in the effort for better performance in service delivery. According to Zadry (2005), quality can no longer be treated as an optional extra, but as an essential survival strategy in business. Therefore TQM is a solution which ensures quality of products and services. It is crucial before any discussion about the TQM concept to first discuss, analyse and understand the concept of quality itself. According to Davelin and Hand (1995), quality is a system of behaviour which embraces everyone within an organisation, and which specifically determines their relationship with the outside world in this case customers, big and small suppliers and competitors, to make their products or service distinctive.

According to Gitlow and Gitlow (1985), quality is the predictable uniformity of dependability at low cost and is suited to the needs of the market. They further mentioned that issues of quality have existed since tribal chiefs, kings or pharaohs ruled. The modern history of quality is marked by great advances between 1920 and the 1950's as set out by George Edwards Deming, Armand Feigenbaum, and Joseph Duran. The 1970's, 1980's and 1990's have been characterized by foreign competition threatening American companies. A renewed emphasis on quality control has been the response. Deming, Juran and Feigenbaum are among the leaders in this area.

According to Garvin (1988), he identified eight categories that apply for the most part to manufactured products:

- performance: this refers to the primary operating characteristics of a product;
- features: 'bells and whistles' of a product;

- reliability: the probability of a product malfunctioning or failing within a specified period;
- conformance: the degree to which a product's design and operating characteristics meet pre-established standards;
- durability: a measure of product life that has both economic and technical dimensions;
- serviceability: the speed, courtesy, competence and ease of repair;
- aesthetics: a user-defined, subjective set of attributes, based on preference of the product; and
- perceived quality.

## **2.9 Conclusion**

This chapter focused on the primary concepts of TQM concepts and it compared and contrasted them to those of traditional management theory. It also discussed the extent to which principles of TQM are consistent with seasoned organisational theory. These aspects of TQM are fundamental issues related to the objectives of the study. Empirical studies from various authors also were discussed .

The key theory on TQM elements was also discussed. Studies from various authors who have written about TQM also were covered in this chapter. The next chapter will cover the research methodology used.

# **CHAPTER THREE**

## **RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter explains the methods in which the research was conducted using quantitative methods. It also describes sampling, data collection, analysis and processing and the limitations of the study, examining PFISTERER in some detail.

The data collected is quantitative in nature. Therefore in this study, the research design is dependent upon the methods of data collection and the analysis of quantitative research techniques.

### **3.2. Aim of the Study**

The main objective of this study is to contribute to a better understanding and knowledge of the positive effects of TQM implementation efforts in the manufacturing industry; in this case PFISTERER. The study analyses the effect of implementation efforts on outcomes deemed to be the end result of well implemented TQM. The outcomes measured are assumed to be the benefits that accrue if the TQM is implemented effectively. In summary the study will assess the positive impact of TQM implementation on variables mentioned below:

- job satisfaction,
- teamwork,
- trust and
- customer feedback.

The outcome of this study will assist the organisation in understanding how much return on investment accrued to the organisation after all outcomes deemed to be crucial for the organisation to retain customers are analysed.

### **3.3. Participants and Location of the Study**

The participants in this study were the employees of PFISTERER which is a manufacturing company based in Pietermaritzburg. It is a random study including senior management, middle management, supervisors, administrative staff and junior staff. The study was conducted on the company premises where the questionnaire was distributed with the approval of the company.

### **3.4. Research Approach**

According to Cooper & Schindler (2008), research design is the blueprint for fulfilling objectives and answering questions. However, research design definitions differ in details, but together they have the following characteristics research design:

- the design is activity based plan,
- the design is always based on the research question,
- the design guides the selection of resources and type of information,
- the design is a framework for specifying the relationships between the study's variables, and
- the design outlines procedures for every activity.

Thus, the design provides answers to questions such as: what techniques are used to gather data, what kind of sampling is used and how data was analysed, as well as indicating any limitations of the study.

For this study quantitative, research was employed. The respondents were to respond on five component factors which are said to be positive if TQM is implemented well. The responses were scaled using five points on the Likert scale: strongly agree/agree/disagree/ strongly disagree / uncertain.

#### **3.4.1 Qualitative Research**

According to Bailey (1987), qualitative data always tends to go beyond numbers; it looks at the reasons why things are as they are. He further states this is usually

achieved through more open ended interviews with individuals. The standard norm of qualitative research is that it normally begins with a wide variety of vague questions which are normally based upon carefully designed questionnaires. This is qualitative in nature seeking detailed data and new insights to problems and how they could be addressed (Sekaran, 2003:119).

### **3.4.2 Quantitative Research**

The quantitative research tends to draw on hard data so that the responses are evaluated in terms of numbers. This could be the number of people who say how strongly they disagreed or agreed with the statement based on the Likert scale which can be 1 to 4 or 5. Cooper and Schindler (2006), state that quantitative research being used mainly to measure knowledge, opinions, or attitudes at all times.

### **3.5 Population and Sample**

Normally sampling involves the selection of some elements in a population, so that one may draw quality conclusions on the entire population. There are always compelling reasons for sampling, including: lower cost, greater accuracy of results, and greater speed of data collection and availability of population elements (Cooper & Schindler 2001).

The ultimate test of a sample design is how well it represents the characteristics of the population it purports to represent. In simple measurement terms, the sample must always be valid, accurate, precise, and reliable. According to Cooper and Schindler (2001), an accurate sample is one in which the underestimates and overestimates are balanced among the members of the other sample.

There are two types of sampling: probability and non-probability. Probability sampling is based on the concept of random selection (a controlled procedure that assures that each population element is given a non-zero chance of selection). Non-probability sampling is always arbitrary and subjective. One member does not have a non-zero chance of being included Saunders (2003).

Random sampling of employees of PFISTERER was conducted. According to Struwig and Stead (2004), in a quantitative research study it is always important to have a large and adequate sample to ensure results are statistically sound. It is important to note if a study consists of fewer than 30 respondents it is in almost all instances, too small to be sound and the results cannot be applied to all cases in the field so this suggests the need for sample size. For this reason, the target audience is a large enough sample to give this study a reliable result. A sample size of 62 PFISTERER employees is used for this study. This size of the sample is dictated by time which did not allow the researcher to reach all employees in the organisation. In this study, random sampling is used, but all levels of staff are targeted, from senior management to junior staff. In this study the sample selected is representative of the population.

### **3.6 Development of the Instrument**

The instrument was developed to cater for a quantitative mode of research. The research test questions were formulated on the basis of research questions. The questionnaire comprised of 4 dimensions which had a total of 20 items. A Likert scale was used to gauge the perception of the respondents.

### **3.7 Questionnaire/Research Questions**

The theoretical framework suggests implementation of TQM brings positive organisational outcomes. Practising high-level commitment; managerial commitment to organisational improvements; empowering employees to be independent and to make decisions; involvement of employees in policy- and decision-making; instituting frequent and open communication; adopting a coaching approach to management; instituting quality-related items; and training employees on all these, are collectively theorised to increase job satisfaction, teamwork, trust, and customer focus. Happy employees are those who are given certain skills and training, focus on satisfying their external and internal customers. According to Spector (2000), employees who are given authority and proper tools to conduct their work find ways of conducting business more efficiently by ensuring

they cut down on waste, improve effectiveness of processes, and continuously improve their method of working.

The following research questions were compiled in a form of a questionnaire and addressed by this study:

- What is the effect of TQM implementation on the level of trust amongst employees?
- What is the effect of implementation of TQM on the manner in which employees work as a team (teamwork)?
- What is the effect of TQM implementation on the level of job satisfaction within the organisation?
- What is the effect of TQM implementation on the status of positive customer feedback based on products and services the organisation produces?

### **3.8 Data Collection**

A quantitative data collection method was used. The questionnaire was randomly distributed and collected from all respondents. All respondents signed the consent form. In this study, the questionnaire was designed to suit all levels and similar to participants regardless of their position within the organisation. For this study, the questionnaire is the major instrument in the collection of data. The process of conducting a controlled experiment is one that is considered as the best method in social science for establishing casual links. The questionnaire and rating scales were used as a checklist. This helped to quantify attitude and people's behaviour. According to Leedy and Ormond (2001), the rating scale becomes more useful when behaviour needs to be evaluated. People can be more truthful when responding to questionnaires for controversial issues, as they choose to be anonymous. The controlled instrument has the potential of enabling the researcher to measure the value of the dependant variable and introduces the independent variable hypothesised to be the main cause, and also to observe whether there is any significant change in the dependant variable. The questions were the basis on which the data was arranged.

## **3.9 Pretesting and Validation**

### **3.9.1 Reliability**

Reliability is the degree to which data-collection methods yield consistent findings, similar observations would be made, or conclusions reached by other researchers, or there is transparency in how sense was made of the raw data (Saunders 2003). All researchers must ensure credibility for the work they undertake. Part of being credible is to ensure absolute honesty when presenting the research method and results. According to Eriksson (2002), the reliability of any investigation is satisfied when the same conclusions can be reached if another researcher undertakes the same study. This is mainly to do with the ability of the research finding to be able to replicate itself if a parallel study was conducted. To ensure reliability, Cronbach's coefficient was computed and found to be above the threshold for reliability of the questionnaire and all the respective dimensions. The results from the validity test show Cronbach Alpha to above 0.7, according to Sekeran (2003) this is acceptable level.

### **3.9.2 Validity**

Validity is concerned with whether the findings are really what they appear to be about. Validity may be both internal and external. External validity is the extent to which research results may be generalized Saunders et al (2003). Internal validity views the accuracy of information from respondents and checks the reality of data collected Saunders et al (2003). Factor analysis is to be used to establish factorial validity, using the Kaiser-Meyer; Olkin measure (KMO). The principal component factors and Eigen values may be greater than the factor extracted. Thereafter, Vermax rotation is applied to make components interpretable. A rotated component matrix is used to establish the highest component result; the result is then interpreted. Each component factor is then described based on the results received.

### **3.9.3 Pilot Study**

The pilot study is the main tool for researchers; one of the reasons is that it can help researchers to check the data collection methods as well as identifying any mistakes in the questionnaire and its miscomprehension. According to Gerson & Horowitz (2002), a sample examined in the pilot study should be selected from targeted population. Thus, the researcher may reveal findings which are unexpected, these findings are used for necessary adjustments to the questionnaire. The pilot study was thoroughly conducted before administration of the questionnaire so as to detect problems that may arise as a result of misinterpretation of questions by respondents. According to Blumberg (2005), the number of respondents in the pilot study can range between 5 and 500. For the purpose of this study, ten questionnaires were distributed amongst PFISTERER staff members. The results from respondents were considered in modifying the questions in order to ensure suitability to the research objectives.

### **3.9.4 Ethical Considerations**

It is important the research design should not subject the research population to embarrassment or any other material disadvantage. In relation to this ethical considerations were put in place to guide the research process. The two considerations which were put in place, focussed on dignity and wellbeing of respondents which was protected all times and that the research data would remain confidential throughout the study period. All participants/respondents agreed to take part in the study and consent forms were signed. An authorisation letter for data collection was obtained from PFISTERER granting permission to conduct research.

### **3.10 Descriptive Statistics**

Descriptive statics in the form of frequencies and percentages were used to establish the profile of the sample as well as the responses to the questions. The

mean standard deviation was used to deal with the overall average and variations in the responses.

### **3.11 Profile of the Sample**

According to Sekeran (2003), sampling is the process of selecting sufficient numbers and correct elements for study from a certain population. The population can be best defined as the entire group of elements the researcher decides to investigate. According to Nachmias (1996), sampling is a method of drawing the sample as well as being a vital part of the research that allows the researcher to be able to generalise findings as it is always impossible to examine the whole population.

In this research samples were drawn from the whole population of the study, but due to financial, time and human resource constraints, it was believed a sample can provide reliable results. The profile of the sample was administered for the following items: gender, percentage of age group, racial group, and position in the organisation, percentage years employed, and percentage years in the position.

### **3.12 Inferential Statistics**

Pearson's Product Movement Correlation was used to ascertain the intercorrelations among the dimensions. The t-test and F-test were used to examine the influence of biographic variables on the study dimensions as dependent biographic variables. The hypothesis is then tested using gender, race, age, highest qualification, position and tenure.

### **3.13 Analysis of the Data**

This part of the study illustrates how the data was analysed. The questions were the basis along which the data was arranged through coding. Descriptive statistics were used to analyse the data obtained through the questionnaire. SPSS was used for editing/coding the data; it helped to analyse the information to deliver statistical results, which include percentages, tabulations, etc. Cross-tabulation was also used to analyse the influence different variables have on each other.

### **3.14 Limitations of the Study**

The company could only allow a certain number of respondents to participate, being a manufacturing firm upon which many customers heavily rely. There were, therefore, constraints of time and pressure. The responses received are mainly based on perceptions which may fail to capture the actual effects, and paradigms may colour the respondents' perceptions, as do personal experiences, values and the type of day the person is experiencing when the questionnaire is answered.

### **3.15 Fieldwork**

The collection of data method employed involved two managers inside PFISTERER. Firstly the argument was that an internally reliable team must assist with research process as the company directors were interested to know the outcome of the study. The team was selected in this regard to ensure the random distribution of questionnaires without biasness or interference with what the outcome should be.

### **3.16 Conclusion**

The research design of the study has been clearly stated in this chapter and the ways of data collection and analysis have been discussed. The methodology is acceptable and also limitations of the study were mentioned and they should be the main focus area if any other similar study is conducted in future.

Quantitative research was applied for this study. It covered key issues to do with this research methodology, amongst these were, population, sample size, validity, reliability, ethics, questionnaire construction, the pilot study and issues to do with fieldwork.

Details on how the research was analysed is covered in the next chapter the research results discussions.

## **CHAPTER 4**

### **RESULTS AND STATISTICAL ANALYSIS**

#### **4.1 Introduction**

This chapter presents the quantitative analysis designed to examine the effect and relationship between implementation of TQM and its intermediate outcomes. The analysis examined the effect of levels of improvement on the select outcomes which are deemed positive outcomes when TQM is implemented properly. The select outcomes are trust, teamwork, job satisfaction and customer feedback. The data obtained from the questionnaires was statistically analysed using an independent T- test. The SPSS software was utilised to facilitate the statistical analysis. The appendices present the complete statistical analysis on the research questionnaire and the responses. The results in this chapter give an insight into questions that were asked and also provide a breakdown of the demographics of all respondents. In total 62 completed questionnaires were received. The main focus of this chapter was to detail the analysis of the findings. A discussion of theoretical linkages to findings is presented in chapter five.

#### **4.2 Reliability and Validity**

##### **4.2.1 Reliability**

According to Anastasi (1990), reliability refers to consistency of scores that are obtained by the same person when re-examination is performed with the same test, but undertaken on different occasions, or if it's done with different sets of equivalent or matching items. According to Foxcroft and Roodt (2002), the Cronbach's Alpha is the coefficient that indicates the consistency of the responses to the items in a measure. The reliability coefficient above 0.7 is considered adequate enough to declare the questionnaire valid. Cronbach's Alpha coefficient was used to assess the reliability of the questionnaire and the respective dimensions. Table 4.1 below to demonstrates the reliability of the results.

Table 4.1: Reliability Statistics for Questionnaire

Cronbach's Alpha	No. of Items
.917	20

The above table shows the Cronbach Alpha coefficient of 0.917, indicating the questionnaire has very high inter-item consistency and reliability. The scale may be considered reliable for the samples.

**Table 4.2** Reliability Statistics for the Dimensions.

Dimensions	Cronbach's Alpha	Number of items
Teamwork	0.677	3
Job satisfaction	0.864	3
Trust	0.796	4
Customer feedback	0.932	10

In Table 4.2 the results show acceptable inter-item consistency and reliability, with customer feedback the highest at 0.932, followed by job satisfaction at 0.864, trust at 0.796 and teamwork at 0.677. There is only one dimension which is just less than 0.7, but it is close enough to 0.7 and can, therefore, be trusted.

#### 4.2.2 Validity

Factor analysis was used to establish factorial validity.

The Kaiser- Meyer- Olkin (KMO) measure of the sampling adequacy (KMO= 0.834) and Barttffs Test of Sphericity (CHI-Square =854.649): df = 190; p less than 0.01) indicated that factor analysis may be performed.

Principal component analysis was conducted which resulted in four components (factors) with Eigen values greater than the one being extracted. Thereafter, a

Vermax rotation was applied to enable the components (factors) to be interpreted. The results are shown in the Table 4.3 below.

**Table 4.3:** Rotated Component Matrix.

	Component			
	1	2	3	4
CustomerFeedback2 6	.875			
CustomerFeedback2 5	.863			
CustomerFeedback2 8	.860			
CustomerFeedback2 4	.785			
CustomerFeedback2 7	.784			
CustomerFeedback2 3	.663			
CustomerFeedback1 8	.661			
CustomerFeedback2 2	.634			
CustomerFeedback1 7	.629			
CustomerFeedback2 1	.627			
Job Satis8		.875		
Job Satis7		.838		
Job Satis5		.823		
Trust13			.847	
Trust14a			.722	
Trust16			.564	
Trust14b			.514	
Teamwrk3				.831
Teamwrk2				.786
Teamwrk4				.490

### **Component (Factor 1) Customer feedback**

This component is labelled Customer Feedback. It deals with how customers rate the company's professionalism (0.875); whether employees think customers find it convenient to use the company (0.863); whether customers are satisfied with the way in which customer service representatives respond to their questions (0.860); whether customers are satisfied with company employees (0.785). It also ascertains whether customers rate the quality of products as excellent (0.784); whether the company is responsive to customer feedback (0.663); whether customers are aware of the customer-service charter (0.661); whether the company receives positive feedback from its customers for its services and products (0.634); whether the company is able to make customers aware of new changes and new product development (.629); and lastly, whether customer feedback is used to improve service in the company.

### **Component (Factor 2) job satisfaction**

This component may be labelled job satisfaction. It deals with whether the employee obtains a sense of accomplishment from his or her job (0.875); whether the employees' can confirm if the skills and the abilities are well utilized in their present job (0.838); and whether the employee takes delight in the job and finds it exhilarating (0.823).

### **Component (Factor 3) trust**

This component may be labelled trust. It deals with whether employees' opinions are well respected and valued by the company (0.847); also, the measurement of openness in the department, this deals with whether are free to and open up to managers or not and tell them what they think is (0.722). Mistakes must be openly accepted rather than covered up and blamed on others (0.564). It must be ascertained whether superiors are able to delegate major tasks to junior staff .

### **Component (Factor 4) teamwork**

This component may be labelled teamwork. It deals with the way in which colleagues in the team help one another (0.831); the way in which they openly share information (0.786); and the way in which a staff member is available to help any of the team members when called upon to do so (0.490)

## **4.3 Descriptive Statistics**

Descriptive statistics in the form of frequencies and percentages were used to establish the profile of the sample as well as the responses to the specific questions. The mean and standard deviations will deal with overall averages and variations in the responses.

### **4.3.1 Profiles of Sample**

The profile of the sample is reflected in the figures below.

Figure 4.1: Percentage Gender Group

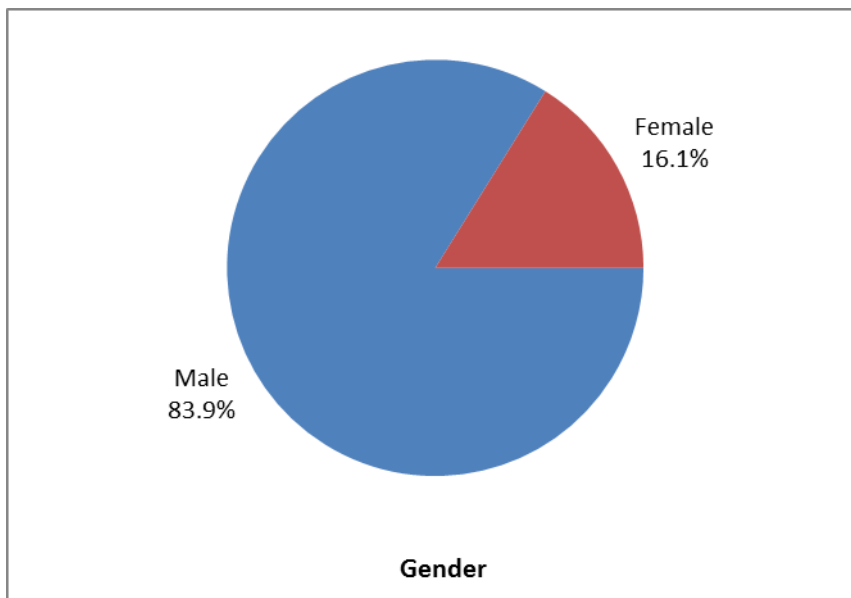


Figure 4.1 above shows the majority of respondents were males, at 83.9%, and female respondents were 16.1%.

Figure 4.2: Percentage of Age Group.

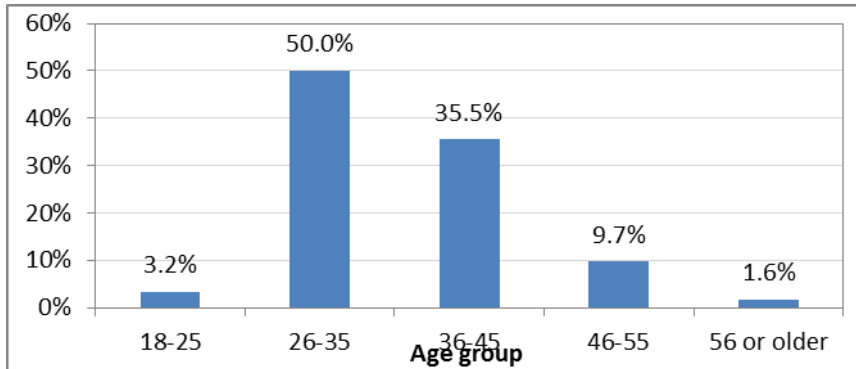


Figure 4.2 above shows approximately 3,3% were in the range 18 – 25 years, 50% in the range 26 – 35 years, 35,5% in the range 36- 45 years, 9,7% in the range 46 – 55 years and 1,6% in the range 56 and older. The majority of employees in the company are aged between 26-35 years.

Figure 4.3: Percentage of Racial Group

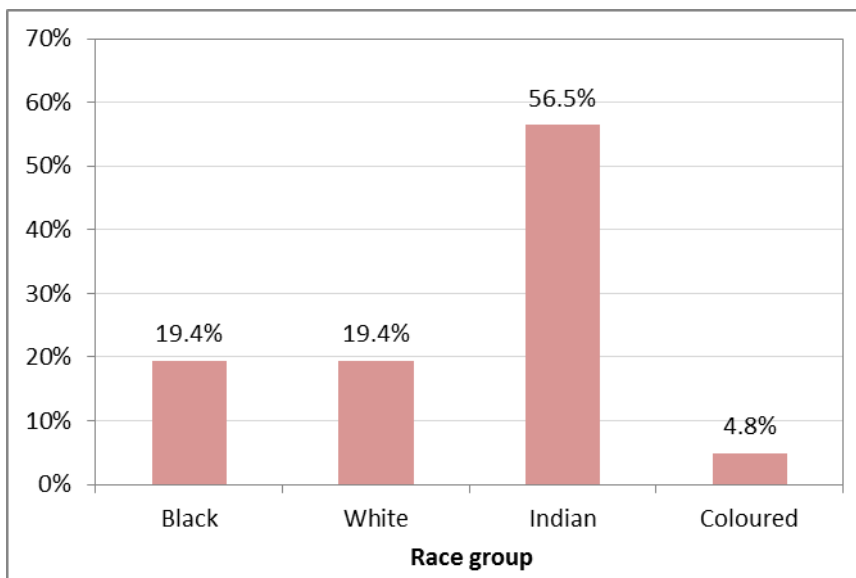


Figure 4.3 shows that 19.4% were Blacks, 19.4% were Whites, 56.5% were Indians and 4.8% were Coloureds. The majority of respondents were Indians.

Figure 4.4: Percentage Academic Qualification.

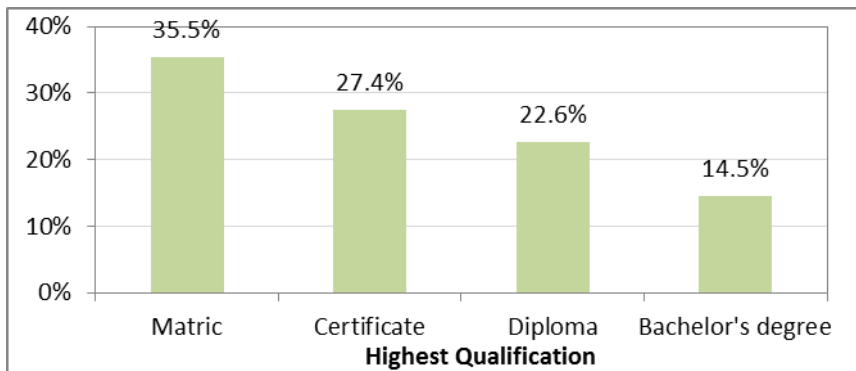


Figure 4.4 shows 35.5% of respondents had matriculation, 27.4% had certificates, 22.6% had diplomas and 14.5% had bachelors' degrees.

Figure 4.5 Percentage Position in the Organization.

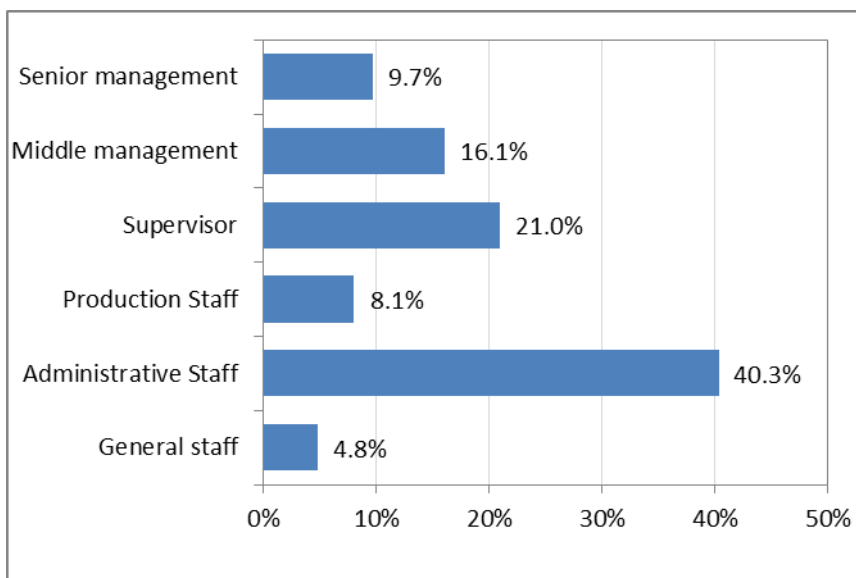


Figure 4.5 above figure shows 4.8% were general staff, 40.3% were administrative staff, 8.1% were production staff, 21% were supervisors, 16.1% were middle management and 9.7% were senior management.

Figure 4.6 Percentage Years Employed

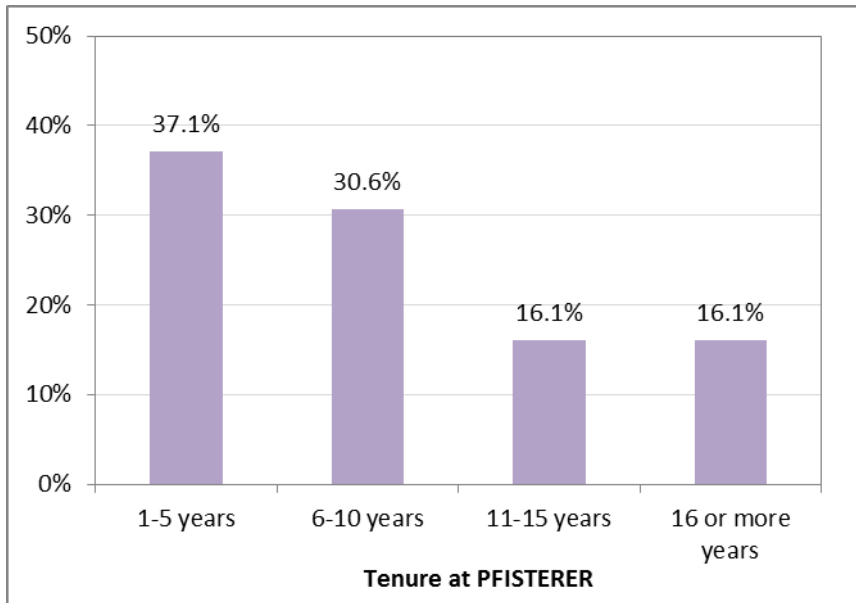


Figure 4.6 above shows 37.1% had 1-5 years in the company, 30.6% 6-10 years, 16.1% 11-15 years and 16.1 16 or more years.

Figure 4.7: Percentage Years in the Position

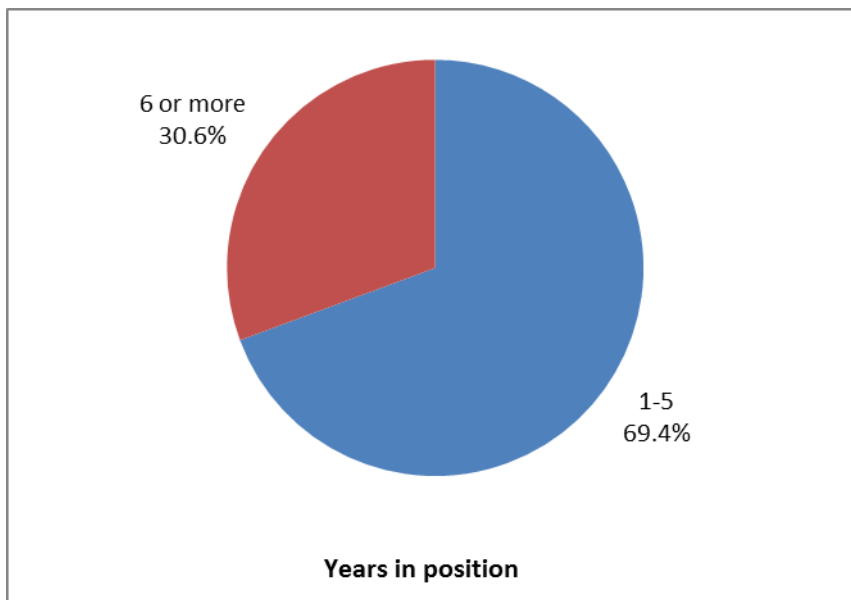


Figure 4.7, above shows 69.4% had 1- 5 years in the position, while 30.6% had 6 or more years in the position. The findings indicate a suitable blend of experienced employees and new employees in the firm.

#### 4.3.2 Responses Relating to the Dimensions.

Table 4.4: Teamwork

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total	%
Q1	2 (3.2%)	1 (1.6%)	3 (4.8%)	25 (40.3%)	31 (50%)	62	100
Q2	1 (1.6%)	2 (3.2%)	13 (21%)	22 (35.5%)	24 (38.7%)	62	100
Q3	0 (0%)	0 (0.%)	3 (4.8%)	18 (29%)	41 (66.1%)	62	100

Q1. Colleagues in my team are able to openly share ideas and information with one another. The responses show 90.3% strongly agree/agree, and 4.8% strongly disagree/ disagree with 4.8 being neutral. It is clear the majority agree and mere 4.8% disagree. This finding indicates that there is good team co-operation as far as information sharing goes at PFISTERER. There is not much work for the company to do here as its clear they are on the right track, with minor additions to what they do better, the organisation stands a chance of obtaining 100% of the respondents agreeing to this question; although it is not 100%, but it can go up very close.

Q2. My colleagues in my team help each other when one is overloaded. The responses show 74.3% strongly agree/agree, and 4.8% strongly disagree/ disagree, with 21.0% being neutral. The level of uncertainty is not good for the organisation on any issue, with 21% being neutral the company needs to consider addressing this finding on overload and teamwork. As the company is focusing on

TQM issues it is important they curb the uncertainty by acting proactively in order to reduce the level of uncertainty. To get employees to help when one is overloaded, guarantees that mistakes will not occur and the of quality within the organisation will not be compromised.

Q3. I am available to help any of my team members when I am called upon. The responses show 95.1% strongly agree/agree, and 0.0% strongly disagree/disagree, with 4.8% being neutral. The outcome here indicates very close team co-operation at the firm. It can be inferred from the majority of positive responses that quality is guaranteed.

Table 4.5 Job Satisfaction.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total	%
Q4	0 (0%)	0 (0%)	3 (4.8%)	22 (35.5%)	37 (59.7%)	62	100
Q5	0 (0%)	2 (3.2%)	5 (8.1%)	23 (37.1%)	32 (51.6%)	62	100
Q6	0 (0%)	3 (4.8%)	3 (4.8%)	25 (40.3%)	31 (50%)	62	100

Q4. I find my job exhilarating. The responses show 95.2% strongly agree/agree, and 4.8% strongly disagree/disagree, with 0.0% being neutral. The level of above 95% is acceptable as it guarantees a high number of employees who can perform their duties honestly and ensure quality service is rendered. Again it is noticeable there was no employee who responded with uncertainty to this question; it should be easy to target and fix problems that led to 4.8% of respondents strongly disagreeing with this statement.

Q5. My abilities and skills are well utilized in my present job. The responses show 88.7%% strongly agree/agree, and 3.2% strongly disagree/disagree, with 8.1% being neutral. Clearly the majority agree their skills and abilities are well utilised in their present position. The firm needs to address the group who are uncertain as ultimately they want to achieve 100% in this field. Having such a high level

guarantees the company better results in terms of production as well as all aspects of quality management.

Q6. My current job gives me a real sense of accomplishment. The responses show 90.3% strongly agree/agree, and 4.8% strongly disagree/ disagree, with 4.8% being neutral. Clearly here the majority agree, which indicates that employees achieve a sense of accomplishment in whatever they do. The firm will need to convert the small percentage of uncertainty as well as those disagree.

Table 4.6: Trust

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	Total	%
Q7	1 (1.6%)	1 (1.6%)	4 (6.5%)	32 (51.6%)	24 (38.7%)	62	100
Q8	1 (1.6%)	1 (1.6%)	9 (14.5%)	29 (46.8%)	22 (35.5%)	62	100
Q9	1 (1.6%)	4 (6.5%)	4 (6.5%)	32 (51.6%)	21 (33.9%)	62	100
Q10	1 (1.6%)	0 (0%)	3 (4.8%)	36 (58.1%)	22 (35.5%)	62	100

Q7. Employees' opinions are well respected and valued in my department. The responses show 90.3% strongly agree/agree, and 6.5% strongly disagree/ disagree, with 3.2% being neutral. It is important to note the responses show a high levels of agreement with the question. It means that at PFISTERER the employees strive to respect all views and values without looking at job levels or job description. The company needs to consider addressing the 6.5% of respondents who disagree. But overall there is no cause for concern looking at the percentage number of those who agree. The uncertainty level is 3.2%. It would appear that the company with all the other interventions can focus on improving this issue, thereby eliminating all uncertainty.

Q8. There is openness in my department; we feel free to tell managers what we really think. The responses show 82.3% strongly agree/agree, and 3.2% strongly disagree/ disagree, with 14.5% being neutral. With 14.5% being neutral the company needs to consider addressing this fact in order to encourage staff to respond positively. Clearly there is a high level of those who agree and a mere 3.2% of respondents who disagree. This shows the level of openness is high and also the feeling of employees is they are free to tell the managers what they think. This finding ensures that the company is bearing fruit in a positive manner in terms of improvement of systems based on employee input. Clearly, quality is certain to be the outcome as majority of the respondents were positive about the statement.

Q9. My superior is able to delegate major tasks to junior levels. The responses show 85.5% strongly agree/agree, and 8.1% strongly disagree/ disagree, with 6.5% being neutral. The responses indicate clearly a delegation of duties is practiced as the majority agree with this statement. It is clear the employees can operate freely and even undertake bigger tasks that can empower them. With 8.1% disagreeing it is not a major concern; but the company needs to ensure this figure is reduced by attending to this item.

Q10. In my department we openly accept our mistakes rather than covering up and blaming others. The responses show 93.6% strongly agree/agree, and 1.6% strongly disagree/ disagree, with 4.8% being neutral. The majority agree with this statement which is a clear indication about the behaviour and response of employees to this item. The 4.8% of those who are uncertain is a small figure, but there is room for improvement at PFISTERER that can allow the firm to drop this uncertainty to 0%.

Table 4.7: Customer Feedback

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	total	%
Q11	0 (0%)	1 (1.6%)	9 (14.5%)	33 (53.2%)	19 (30.6%)	62	100
Q12	1 (1.6%)	0 (0%)	20 (32.3%)	24 (38.7%)	17 (27.4%)	62	100
Q13	0 (0%)	1 (1.6%)	9 (14.5%)	24 (38.7%)	28 (45.2%)	62	100
Q14	1 (1.6%)	0 (0%)	14 (22.6%)	29 (46.8%)	18 (29%)	62	100
Q15	0 (0%)	0 (0%)	7 (11.3%)	29 (46.8%)	26 (41.9%)	62	100
Q16	0 (0%)	0 (0%)	21 (33.9%)	28 (45.2%)	13 (21%)	62	100
Q17	0 (0%)	0 (0%)	17 (7.4%)	28 (45.2%)	17 (27.4%)	62	100
Q18	0 (0%)	0 (0%)	12 (19.4%)	29 (46.8%)	21 (33.9%)	62	100
Q19	0 (0%)	0 (0%)	14 (22.6%)	32 (51.6%)	16 (25.8%)	62	100
Q20	0 (0%)	0 (0%)	18 (29%)	27 (43.5%)	17 (27.4%)	62	100

Q11. We make our customers aware of new changes and new product development. The responses show 83.3% strongly agree/agree, and 1.6% strongly disagree/ disagree, with 4.5% being neutral. Clearly the majority agree this illustrates customer awareness is taken note of at PFISTERER. The 1.6% who disagree does not present a problem, but rather as a finding that allows scope of improvement.

Q12. The customers are aware of our customer-service charter. The responses show 66.1% strongly agree/agree, and 1.6% strongly disagree/ disagree, with 32.2% being neutral. With 32.2% being neutral towards this statement, the company needs to consider addressing it, as it reveals the higher percentage of employees who are neutral on the statement. The company must ensure this is reduced drastically for the benefit of the organisation. For employees to know that the customers are not aware of the service charter means a company must do a

lot in terms of publishing information on the charter to inform customers about total quality management.

Q13. We use customer feedback to improve our service. The responses show 83.9% strongly agree/agree, and 1.6% strongly disagree/ disagree, with 14.5% being neutral. Absolutely the majority here agree the company uses customer feedback to improve service, which is good. With 14.5% being neutral the company needs to consider the importance of feedback for quality management and improvement. Training and development on the importance of feedback is a must. As only 1.6% disagrees it is not a major crisis at this point and time.

Q14. We receive positive feedback from our customers on our services and products. The responses show 75.8% strongly agree/agree, and 1.6% strongly disagree/ disagree, with 22.6% being neutral. Clearly the majority agree the company receives positive feedback from customers with merely 1.6% disagreeing. A total of 22.6% of respondents were neutral on this statement. This is a cause for concern and the company needs to engage in some form of some intervention to change this perception to a more favourable one.

Q15. Our company is responsive to customer feedback. The responses show 88.7% strongly agree/agree, and 0.0% strongly disagree/ disagree, with 11.3% being neutral. The majority of respondents agree with this statement revealing that the company is highly responsive to customer feedback with no one disagreeing. With 11.3% being neutral the company needs to setup a strategy to address this matter. Overall the findings are satisfactory to this statement.

Q16. Customers are satisfied with our company employees. The responses show 66.2% strongly agree/agree and 0.0% strongly disagree/ disagree, with 33.8% being neutral. An intervention programme is required to change the attitudes of the 33.8% of respondents who are neutral on this matter. It is imperative that customers be satisfied with the employees in order to retain existing customers and attract prospective customers. It was pleasing to note that no one disagreed with this statement.

Q17. Customers find it convenient to use our company. The responses show 72.6% strongly agree/agree and 0.0% strongly disagree/ disagree, with 27.4% being neutral. Clearly the majority agree customers find it convenient to use PFISTERER with no one disagreeing, but the level of uncertainty is high as it is sitting at 27.4%. This level of uncertainty requires the company to act immediately with some training plan to change perception for the betterment of the organisation.

Q18. Customers rate our company as professional. The responses show 80.7% strongly agree/agree, and 0.0% strongly disagree/ disagree, with 19.4% being neutral. The majority agree on the rating of the company in terms of professionalism and no one is disagrees with this statement. A total of 19.4% of respondents remained neutral. This is a cause for concern as it reveals that employees are unaware of perceptions of customers in so far as their attitudes are concerned regarding the organisation.

Q19. Customers rate our product quality as excellent. The responses show 77.4% strongly agree/agree, and 0.0% strongly disagree/ disagree, with 22.6% being neutral. Clearly the majority agree on the rating of products, this confirms customers rate the products as excellent. However, the company must focus on the 22.6% of the respondents who adopted a neutral position. This is cause for concern as employees are confident about quality of products.

Q20. Our customers are satisfied with the way in which our customer service representatives respond to their questions. The responses show 70.7% strongly agree/agree, and 0.0% strongly disagree/ disagree, with 29.0% being neutral. The majority agree while 29% is neutral. It can be confirmed that at PFISTERER customers are satisfied with the way in which customer service representatives respond to their questions and queries.

### 4.3.2 Feel for the Data

The mean and standard deviation indicate the overall average response as well as the variation in the responses to the dimensions.

The results are shown in Table 4.8 below.

Table 4.8: Mean and Standard Deviation of the Dimensions

	N	Minimum	Maximum	Mean	Std. Deviation
Teamwork	62	2.00	5.00	4.3333	.64161
Job Satisfaction	62	2.33	5.00	4.4247	.64209
Trust	62	1.75	5.00	4.1815	.63725
Customer Feedback	62	3.00	5.00	4.0661	.59173

The mean score shows teamwork is practised (M=4.333). Job satisfaction stands at M=4.4247, trust at M=4.1815 and customer feedback at M=4.0661. When the mean scores are ranked, the highest-level agreement relates to job satisfaction followed by teamwork, trust and customer feedback. As it could be seen from the responses the company is doing best in terms of job satisfaction, this guarantees happy workers who can perform duties without compromising quality.

The standard deviation shows variations in the responses where some subjects disagree while others strongly agree. In the case of customer feedback, some subjects were neutral (Min= 3.00), while others strongly agree (Max=5.00). When the standard deviations are ranked in order, the highest variation in the responses relate to job satisfaction (SD=0.64209), closely followed by teamwork (SD= 0.64161), trust (SD= 0.63735) and customer feedback (SD=0.59137).

### 4.4 Inferential Statistics

Pearson's Product Movement Correlation was used to ascertain the intercorrelation among the dimensions and the t-test and F-Test (Analysis of Variance- Anova) were used to examine the influence of biographic variables on the study dimensions.

#### 4.4.1 Intercorrelations between the Dimensions

The results of the Intercorrelation are shown in Table 4.9 below.

Table 4.9: Pearson's Correlation among the Dimensions.

		Teamwork	Job Satisfaction	Trust	Customer Feedback
Teamwork	Pearson's Correlation	1	.310*	.578**	.374**
	P		.014	.000	.003
	N	62	62	62	62
Job Satisfaction	Pearson's Correlation	.310*	1	.396**	.424**
	P	.014		.001	.001
	N	62	62	62	62
Trust	Pearson's Correlation	.578**	.396**	1	.440**
	P	.000	.001		.000
	N	62	62	62	62
Customer Feedback	Pearson's Correlation	.374**	.424**	.440**	1
	P	.003	.001	.000	
	N	62	62	62	62

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

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

There is a positive and significant correlation between teamwork and job satisfaction ( $r = .310$ ;  $p < 0.05$ ), teamwork and trust ( $r = .578$ ;  $p < 0.01$ ) and teamwork and customer feedback ( $r = .374$ ;  $p < 0.01$ ). The p values indicate the correlation between teamwork and job satisfaction is significant at the 5% level of significance and the correlation between teamwork and trust and teamwork and customer feedback is significant at the 1% level of significance.

There is a positive and significant correlation between job satisfaction and trust ( $r = .369$ ;  $p < 0.01$ ) and customer feedback ( $r = .424$ ;  $p < 0.01$ ).

There is a positive and significant correlation between trust and customer feedback( $r = .424$ ;  $p < 0.01$ ).

#### 4.4.2 Influence of the Biographic Variables on the Dimensions

The following hypothesis was formulated to test this, the biographic variables being used as independent variables, and the respective dimensions as dependent variables.

Hypothesis

There is a statistically significant difference in the perceptions of the dimensions among the biographic variables.

#### Gender

The results are shown in Table 4.10 below.

Table 4.10: t – test – Dimensions by Gender

Dimensions	Equal variances assumed		
	t-test for Equality of Means		
	t	Df	P
Teamwork	.000	60	1.000
Job Satisfaction	.310	60	.758
Trust	.574	60	.568
Customer Feedback	1.510	60	.136

\*  $p < 0.05$

The results in Table 4.10 show no statistically significant difference in the perception of the dimensions between males and females. Accordingly, this hypothesis is not supported for gender.

### Race

The results are shown in Table 4.11 below.

Table 4.11: F- Test – Dimensions by Race

		F	p
Teamwork	Between Groups	1.608	.197
Job Satisfaction	Between Groups	4.732	.005 *
Trust	Between Groups	.437	.728
Customer Feedback	Between Groups	1.110	.352

\*p<0.05

The results in Table 4.11 show there is a significant difference in the perception of job satisfaction (F = 4.732; p < 0.05) among the race groups.

There is no statistically significant difference in the perception of teamwork, trust and customer feedback among the race groups.

### Age.

Table 4.12: F- Test – Dimensions by Age

		F	P
Teamwork	Between Groups	.827	.484
Job Satisfaction	Between Groups	.772	.514

Trust	Between Groups	.208	.891
Customer Feedback	Between Groups	.162	.921

\*p<0.05

The results in Table 4.12 show there is no statistically significant difference in the perception of the dimension amongst the age groups.

### Highest Qualification

Table 4.13: F- Test – Dimensions by Highest Qualification.

		F	p.
Teamwork	Between Groups	.596	.620
Trust	Between Groups	2.852	.045
Customer Feedback	Between Groups	2.290	.088
Job Satisfaction	Between Groups	3.417	.023

The results in Table 4.13 show there is a statistically significant difference in the perception of trust and job satisfaction. Amongst the highest qualification groups there is no statistically significant difference in the perception of teamwork and customer feedback amongst the highest qualification groups.

### Position

Table 4.14: F- Test – Dimensions by Position

		F	p
Teamwork	Between Groups	1.540	.192
Trust	Between Groups	1.219	.312
Customer Feedback	Between Groups	1.146	.347

		F	p
Teamwork	Between Groups	1.540	.192
Trust	Between Groups	1.219	.312
Customer Feedback	Between Groups	1.146	.347
Job Satisfaction	Between Groups	1.724	.144

\*p<0.05

The results in Table 4.14 show no significant difference in the perceptions of the dimensions amongst the position group.

### Tenure

Table 4.15: F- Test – Dimensions by Tenure

		F	p
Teamwork	Between Groups	.224	.880
Trust	Between Groups	.363	.780
Customer Feedback	Between Groups	1.404	.251
Job Satisfaction	Between Groups	.214	.886

\*p<0.05

The results in Table 4.15 show no significant difference in the perceptions of the dimensions amongst the tenure groups.

### Current Position

Table 4.16: F- Test – Dimensions by Current position

	Equal variances assumed
	t-test for Equality of Means

	t	Df	P
Teamwork	1.295	60	.200
Job Satisfaction	-.112	60	.911
Trust	-.130	60	.897
Customer Feedback	-.529	60	.599

The results in Table 4.16 show no significant difference in the perceptions of the dimensions amongst the position groups.

#### **4.5 Conclusion**

The key objective of this study was to find the positive effect of the TQM implementation in some of intermediate outcomes which are teamwork, job satisfaction, trust and customer feedback. On analyses conducted it can be revealed that PFISTERER has implemented TQM satisfactorily.

The questionnaire was sound as it produced a value of Cronbach Alpha which is more than 0.7. The research findings were presented in terms of the research questions that were based on the literature review pertaining the effect of TQM implementation and intermediate outcomes. The available literature mentions if the TQM is implemented well, there will be positive outcomes on teamwork, job satisfaction, trust and customer feedback will be positive.

The next chapter presents findings, theoretical linkages, conclusions and recommendations.

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

In this chapter the major findings of this research, linkages with literature, recommendations and limitations of this study are discussed. This chapter gives an insight on the major findings of this research as well as the conclusions arising from findings. This chapter also makes mention of what the TQM theorists authors say will occur if TQM is effectively implemented in the organisation. This research was based on a sample of 62 employees from PFISTERER, a manufacturing company based in Pietermaritzburg. A quantitative study was undertaken by distributing of a structured questionnaire to employees ranging from senior management to junior staff.

#### **5.2 Findings from the Literature Study**

##### **5.2.1 What Total Quality Management Authors Say Will Occur**

The findings from the literature relevant to each objective are discussed thereafter; each objective is considered in the light of the empirical study and is discussed.

It has been evident over the years when one reads about TQM in an organisation that those organisations which practise TQM perform better than those which don't practise it. According to Oakland (1995), there is a great element of job satisfaction in companies that implement TQM, in his studies he mentioned that there is a great level of employee satisfaction in TQM companies. Harber (1993), established employees in organisations with TQM were different and they were significantly positive towards job satisfaction than the ones without TQM on various aspects of conducting business. In addition, Harber explains that employees believed TQM had a greater equity, their ideas and values are taken

into consideration, and management was keener on improving all aspects of business in the workplace.

According to George & Weimerskirch (1994), it is critical to have management commitment to adopt the approach of changing practices and also to improve systems and procedures in which employees operate. According to Laurent (1991), commitment that leads to change includes an effort to become a leader rather than a director or supervisor.

According to Esin and Cemal (2010), all employees in organisations that practice TQM must be empowered; they must be provided with authority, responsibility and all the resources required for identifying and putting improvement initiatives. Open communication and participatory management are recognised to play a major role in contributing to employees' sense of involvement and for employees to feel valued in the organisation. Part of involvement for employees is to be included in quality related teams formulated to implement quality in the organisation, as well as short term planning teams formulated to improve certain processes within the organisation. According to Conti (2001), giving staff members skills training in some areas; such as customer service, leadership, empowerment, teamwork, customer feedback and all other TQM tools is an essential for TQM implementation.

According to Dean & Bowen (1994), quality improvement initiatives are driven by understanding of customer service. The beliefs are longer term successes of an organisation and they depend on customer satisfaction, this can be successful in the organisation if everyone focuses on what the customer needs. TQM logic of investing in staff skills training and the manner that employees are treated will determine how employees treat customers. According to Anderson, Rungtusanatham & Schroeder (1995), TQM interventions determine the level of degree of trust, teamwork, employee satisfaction and also customer focus. This in turn determines the level of customer satisfaction.

### **5.3 Findings from the Primary Study and Recommendations**

The conclusions below are based on the findings of the questionnaire.

### **5.3.1 Objective One: (teamwork)**

**Findings from Literature:** Maria (2007), stated teamwork is a major part of TQM implementation, because it enables employees in different parts of the institution to work together to meet customer needs in ways that cannot be done through individual performance. He further stated that teamwork helps the commitment of employees to achieve objectives of the organisation and organisational goals. It can be argued that successful organisations are doing well in terms of teamwork. Literature revealed that recommendations made collectively by teams are easily accepted and the implementation part is more flexible. Teamwork is necessary for the prosperity of the institution to engage in non-competitive activities internally and externally with respect to suppliers. These teams should have the authority to make work-related decisions.

**Findings from Fieldwork:** This objective examined the effect of TQM implementation in influencing employees to function as teams. The study reveals that there is great improvement in how employees share information and ideas with one another. This helps the organisation as sharing information can lead to better and quicker ways of solving complex problems. The study revealed that there is a great spirit of helping other employees when one is overloaded with work, also the study revealed that there is a high number of employees who are uncertain whether this does take place. The respondents also show that staff members are available to help other team members when they are called upon.

**Conclusion:** it appears that at PFISTERER the organisation has managed to create an environment that allows the employees to perform as teams. The level of response from respondents can be concluded as positive. It can then be concluded that implementation of TQM brings about positive outcomes in teamwork.

**Recommendations:** Although the company is responding positively on teamwork it is advisable that more activities related to teamwork be incorporated. This will

ensure that if any other study is conducted in the organisation, all staff members will agree to teamwork concept and there will be no disagreements or uncertainties. According to Vorley and Tickle (2001), teamwork boosts moral of the employees. The organisation must maintain formation of teams at various levels. The employees should be grouped together and they must be encouraged to attack problems as teams, this will allow for quicker solutions as there will be a greater platform to tackle a complex problems. Employees must continue to take decisions collectively as to promote flexible implementation.

### **5.3.2 Objective Two (job satisfaction)**

**Findings for Literature:** According to Ellickson and Logsdon (2002) job satisfaction is an extent to which employees like their jobs. According to Shanin (2011) job satisfaction is an effective response towards certain aspects of employees work. Literature revealed that organisations need to keep their employees satisfied and this brings about the best result in TQM implementation. According to George and Jones (2008) job satisfaction is the set of feelings or responses to the job. Literature revealed that organisations who keep their employees satisfied produce better quality products.

**Findings From the Fieldwork:** This objective explored whether employees were satisfied with their jobs. Responses and results show most staff members find their jobs exhilarating. Employees are happy that their skills and abilities are well utilized. This utilisation of skills and ability in an organisation leads to employees believing that they are important in the organisation. A large number of respondents agree that their jobs always give them a strong sense of accomplishment. Customer service and employee satisfaction are at the core of any institution and are the main focus of TQM. Employee satisfaction should be equal to customer satisfaction. Employees are critical stakeholders as they ultimately deliver the institutional outcomes required to meet all stakeholders' needs. The study reveals that PFISTERER is a company that ensures all employees are satisfied with their jobs. It can be concluded that as the level of job satisfaction is high the main course of that is successful implementation of TQM.

**Conclusion:** It can be concluded that employees at PFISTERER are satisfied with their jobs. This implies that the implementation of TQM has improved the level of job satisfaction amongst the employees at PFISTERER.

**Recommendations:** Job satisfaction is important for any business to prosper. The organisation is encouraged to invest in TQM interventions as this will improve the level of job satisfaction. All the gaps which are minor which came out during this research can be plugged easily by the organisation.

### **5.3.3 Objective Three (trust)**

**Findings from Literature:** According to Nkechi (2010), the organisations striving to survive global competitiveness must ensure that there is a high level of trust amongst employees. He further states that organisations with a high level of trust produce better quality products. It can be argued that without trust the organisations will come with inferior products and they will lose the customers. He also states that implementation of TQM interventions is likely to improve the level of trust amongst employees.

**Findings from Fieldwork:** This objective explored the level of trust existing amongst employees. A large number of respondents indicated that their opinions are valued. The majority of employees are happy with the openness within their departments and say they feel free to tell managers what they really think about quality and operational matters. A high percentage of employees say superiors are able to delegate major tasks to junior levels, thereby empowering employees.

**Conclusion:** It can be concluded that there is a high level of trust amongst the employees. This is attributed by successful implementation of TQM. It is clear again that the junior staff got a level of comfort with management and there is transparency. It can be concluded that implementation of TQM has successfully improved the level of trust within the employees.

**Recommendations:** Trust always emerges as an important factor in any business so it's important that all aspects related to trust are met. Without trust it is clear that the TQM framework cannot be established as it is the key to fostering full participation of members within the organisation. Therefore, based on the results of this research, the organisation can invest more on TQM implementation as it will bring about positive outcome in the level of trust. Where it has been established that there is a shortfall the organisation got room of improvement.

#### **5.3.4 Objective Four (customer feedback)**

**Findings from Literature :** According to Andrie (1994), TQM is the tool that focuses on customer needs and satisfaction. Literature revealed that most companies try harder to exceed customer expectation in all their daily operations. This is done to ensure that the organisation can receive positive customer feedback all the time. Liker (2004) says companies that focus mainly on customer needs will operate for decades in their operation.

**Finding from Fieldwork:** The objective was to examine customer feedback from an internal perspective. A high percentage of employees say customers are aware of new changes and new product development. Although the level is low for respondents who say they are aware customers know about the service charter, the responses are reasonably acceptable. There is a positive response on accessing whether customer feedback is used for improving service. There is positive feedback from customers on the company's services and products. There are a large number of respondents who agree the company is responsive to customer feedback. The majority of the respondents say customers are happy with employees. This is a positive response, respondents say customers find it convenient to use the company. Most respondents strongly agree that customers rate the company as professional. The study also reveals customers rate products as of good quality and excellent. Customers are satisfied with the way in which customer service representatives respond to their questions. Quality is judged by the customer. All products and services attribute contribute value and lead to customer satisfaction and preference.

**Conclusion:** according to this study PFISRERER receives the positive feedback from customers and this seems to be well known within the organisation. It can be concluded that implementation of TQM has brought about positive customer feedback. All what the organisation can do is to maintain and improve on all TQM interventions as all customers will only be satisfied with quality products. The slight problem is that some customers are not aware of the business charter and this is not good for the organisation as the charter should be the point of departure in terms of controlling behaviour of employees. It can be concluded that implementation of TQM has brought about positive customer feedback.

**Recommendations:** The firm must ensure that all its customers are given the organisation's business charter. From time to time they must conduct their own research to check if customers are still happy with the services they receive. The results of this study concur with the literature review in Chapter Two. The organisation can invest in TQM interventions as it has been revealed that TQM brings about positive customer feedback.

#### **5.4 Benefits of this Research**

This study presented quantitative findings concerning implementation of TQM. It displays intermediate outcomes that may be expected if TQM is implemented. This study can be used by practitioners to benchmark the level of positive outcomes if TQM is well implemented. The decision makers at this stage have well-researched information which supports much of what has been mentioned in the TQM literature. All levels of management are clearly related to the success of TQM.

For the organisation to obtain immediate and long term outcomes that can be noticed by senior management and the board, it is critical all employees are empowered at all levels, they must be capacitated to make decisions, they must also be able to experiment with new ways and methods of working.

According to Joiner (2007), employees should be involved in decisions that affect them and transparency must be practised in the organisation. In reality, the study is able to provide strong empirical based evidence on the effects of TQM implementation. TQM practitioners can use this study to make decisions about whether or not to implement TQM.

Senior management must always clearly share information through the organisation and ensure that other managers are continuously encouraged to practise the same. Staff members should be allowed to freely ask questions about what impact their decisions have on their customers. Leadership, according to the literature on TQM, must question managers about their interventions to empower their subordinates. TQM implementation also involves the creation of a recognition and reward system. This incentive is paid to managers who in turn use their ability to empower other staff members.

According to Shanin (2011), the good practise in TQM is when empowerment process leads to an environment where experimenting with new ideas and methods of doing the work are accepted. The more the employees are given this opportunity the more the chances that through their research and development they are likely to come up with ideas which may enhance TQM interventions. This says employees can, on their own explore and operate outside the narrow confines of a job description and no one will be punished.

The managers according to TQM must behave more as sounding boards as well as partners in decision making instead of commanders (Raja, Bolda and Malik 2011). It is important to realise there is no good production which can be brought about by commanders, they tend to be stereotyped and they disallow any experimentation of new thoughts. Employees should be given leeway and freedom to learn and grow in the same context without causing any derailment in process management.

According to Nkechi (2010) employees must be responsible for empowering themselves and their managers should be able to create an enabling platform for

them to operate freely. Employees should learn to communicate clearly, more directly and professionally deal with their managers. They should be able to take initiative for improving practises. The logical sense of TQM always assumes there should be frequent communication amongst all parties that will ensure understanding is enhanced. In addition scope for accurate empowerment will prevail on the one hand, while on other side there is growth in trust. Trust amongst junior staff and senior management is vital as it guarantees employees can operate without fear. In most companies that don't succeed. There is always a barrier line contributing to employees working under threat of getting instantly fired when they try to explore and make a minor mistake.

### **5.5 Limitations of the Study**

The study was well conducted, and a reliable sample was obtained, however, owing to the nature of the business, it was difficult for employees to leave work to focus on the questionnaire.

### **5.6 Suggestion For Future Research**

Future study in this topic is highly recommended. At that time the number of respondents should be increased as to get a well-represented number of the population. The time given for the respondents should be increased. The organisation will have to allow enough time for employees to participate in the research.

### **5.7 Conclusion and Recommendations**

The implementation of TQM at PFISTERER manufacturing company has proven that proper implementation of TQM always brings about positive outcomes in teamwork, trust, job satisfaction and customer feedback. The research opens another window for PFISTERER to further tighten and promote TQM interventions. A further research can be done by the organization but more respondents will have to be included to represent the entire population. The main value for replicating this study is to test the contingency theory. If this study is replicated in

future, the researchers could attempt to measure managerial behavior, rather than the reported perceptions of managers.

Some of the independent variables in this study are observed to be correlated with each other; in case there is future research that future quantitative research could be able to test whether there is an indirect effect of using a recursive path model. The study on the importance of formal TQM structures is another area that can be targeted for future research. At this stage studies have not yet analysed the effect of quality structures or quality teams on customer satisfaction in the organizations. It is argued that any further research that can be conducted into this field of TQM should try to include both quantitative and qualitative study. It is for these reasons, any additional case studies or quantitative analyses performed are unlikely to contribute empirical better knowledge and understanding on the effects of TQM implementation.

A general observation on this study is that the senior management or top leadership PFISTERER are committed to TQM. This is to result in them keeping their big customers amongst them their key customer Eskom.

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World Wide Web  
[www.pfisterer.com](http://www.pfisterer.com)



6 September 2012

**Mr Bheki Mbambo 205524836**  
Graduate School of Business & Leadership  
Westville Campus

Dear Mr Mbambo

**Protocol reference number: HSS/0825/012M**  
**Project title: Effect of Total Quality Management Implementation at Pfisterer (Pty) Ltd.**

**EXPEDITED APPROVAL**

I wish to inform you that your application has been granted Full Approval through an expedited review process.

**Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.**

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....  
**Professor Steven Collings (Chair)**

/px

cc Supervisor Alec Bozas  
cc Academic leader Dr S Bodhanya  
cc School Admin. Ms Wendy Clarke

**Professor S Collings (Chair)**  
**Humanities & Social Sc Research Ethics Committee**  
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Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville



# PFISTERER

## OVERHEAD LINES

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26<sup>th</sup> July 2012

To Whom it may Concern

We at PFISTERER (Pty) Ltd allow Bheki Mbambo, who is a student at the University of KwaZulu-Natal studying for and MBA, to undertake his research project using our company on Total Quality Management Implementation.

Pfisterer is also confirming that we are included in the results of the research and may use the results of the study after completion of the project at no cost to the company.

Yours faithfully,



Keith Kirkham  
Quality Manager

**APPENDIX 2**

**Informed Consent Letter 3C**

**UNIVERSITY OF KWAZULU-NATAL  
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

Dear Respondent,

**MBA Research Project**

**Researcher:** Name Bheki Mbambo (083 642 0050)

**Supervisor:** Name Mr. Alec Bozas (082 334 4437)

**Research Office:** Ms P Ximba 031-2603587

I, Emmanuel Bheki Mbambo an MBA student, at the Graduate School of Business and Leadership, of the University of KwaZulu Natal. You are invited to participate in a research project entitled Effect of Total Quality Management Implementation at PFISTERER Pty LTD. The aim of this study is to: gain knowledge and understanding of effects of Total Quality Management Implementation at PFISTERER.

Through your participation I hope to understand Effect of Total Quality Management implementation on 5 intermediate outcomes which are trust, job satisfaction, teamwork, customer awareness and customer feedback. The results of the focus group are intended to contribute towards future targeting policy and budgets for Total Quality Management Implementation.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about 15 minutes to complete. I hope you will take the time to complete this survey.

Sincerely Bheki Mbambo

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

**APPENDIX 4**

**Cover Page of Questionnaire / Interview Schedule 3B**

**UNIVERSITY OF KWAZULU-NATAL  
GRADUATE SCHOOL OF BUSINESS & LEADERSHIP**

**MBA Research Project**

**Researcher:** Name Bheki Mbambo (083 642 0050)

**Supervisor:** Name Mr Alec Bozas  
(0823344477)

**Research Office:** Ms P Ximba 031-2603587

**EFFECT OF TOTAL QUALITY MANAGEMENT IMPLEMENTATION AT PFISTERER Pty  
(LTD)**

The purpose of this survey is to solicit information from PFISTERER employees regarding Effect of Total Quality Management implementation on intermediate outcomes which are trust, job satisfaction,; teamwork, customer awareness and customer feedback. The information and ratings you provide us will go a long way in helping us identify future budgets; and future targeting policy of Total Quality Management implementation. The **questionnaire** should only take you **10-15** minutes to complete. In this questionnaire, you are asked to indicate what is true for you, so there are no “right” or “wrong” answers to any question. Work as rapidly as you can. If you wish to make a comment please write it directly on the booklet itself. Make sure not to skip any questions. Thank you for participating.

**Demographic Questions**

Put these in boxes too

1. What is your gender?    **\_1\_** Male **\_2\_** Female.
2. What is your age group? **\_1\_** 18 to 25.  
**\_2\_** 26 to 35

3 36 to 45

4 46 to 55.

5 56 or older.

3. What is your racial group

1 Black

2 White

3 Indian

4 Coloured

5 Other (please specify) .....

4. What is your highest qualification?

1 Matriculation.

2 Certificate.

3 Diploma

4 Bachelor's Degree

5 Master's Degree.

6 Doctorate degree.

5 What is your position?

1 General staff.

2 Administrative staff.

3 Production staff

4 Supervisor

5 Middle Management.

6 Senior Management.

6. How long have you been employed by PFISTERER? \_\_\_\_

7. How long have you been in your current position? \_\_\_\_

## QUESTIONNAIRE

### TEAMWORK

1. Colleagues in my team openly share information and ideas with each other.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
5	4	3	2	1

2. My colleagues in my team help each other when one of us is overloaded.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
5	4	3	2	1

3. I am available to help any of my team members when I am called upon.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

### JOB SATISFACTION.

4. I take great delight in my job and I find it exhilarating.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

5. My skills and abilities are well utilised in my present job.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

6. My job gives me sense of accomplishment.

Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree

### TRUST

7. Employees' opinions are well respected and valued in my department.

<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly disagree</b>

8. There is openness in my department; they feel free to tell managers what they really think.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

9 My superior is able to delegate major task to junior levels.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

10. In my department we openly accept our mistakes. (Rather than cover up and blaming others).

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

**CUSTOMER FEEDBACK**

11. We make our customers aware of new changes and new product development.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

12. The customers are aware of our customer service charter.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

13 We use customer feedback to improve service.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

14. We receive positive feedback from our customers with our services and products.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

15 Our company is responsive to customer feedback.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

16 Customers are satisfied with our company employees.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

17. Customers find it convenient to use our company.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

18. Customers rate our company as professional.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

19. Customers rate our product quality as excellent.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

20. Our customers are satisfied with how our customer service representatives respond to their questions.

Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree

**End of the Questionnaire**

Thank you for taking the time to complete the questionnaire.