Effective operation through Total Quality Management: A case study of Feltex Automotive

By

Zamalunga Pamela Cele

212530113

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School of Management, IT and Governance

College of Law and Management Studies

Supervisor: Jayrusha Ramasamy- Gurayah

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DECLARATION

I, Zamalunga Pamela Cele declare that this dissertation does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, the authors words have been re-written but the general information attributed to them has been reference. Moreover, where their exact words have been used, their writing has been placed inside quotation marks and referenced. This dissertation does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged and the source being detailed in the dissertation and in the references sections. This dissertation has never been submitted to any university. It is submitted for Masters of commerce in Supply Chain Management in the college of law and management studies at the University of KwaZulu Natal (Westville Campus).

MS. Z.P. Cele

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ABSTRACT

For the past decades, manufacturers could sell everything they produced. Service organisation did not worry about the service they provided (Alarcon, 2013: 20). Today South African automotive organisations face many challenges including globalisation and high competition that requires a strong focus on quality and productivity achievement (Alfred, 2012: 58). TQM improves customer satisfaction, employee satisfaction and operational effectiveness due to motivated workforce, management commitment, free communication, and total involvement (Andrew, 2013: 56). Nowadays, customers have become more sophisticated and knowledgeable. If the company does not offer quality good and service, the customer buys from the competitor. Moreover, when corporate customers start improving their own quality, they also expect better performance from the suppliers (Dale & Cooper, 2012: 65).

The purpose of this study is to examine the operation effectiveness through TQM implementation in the automotive manufacturing organisation based in Durban. This is going to be achieved by firstly giving account of TQM philosophy to enables everyone to understand the meaning of TQM in an automotive manufacturing organisation. Secondly, look at the TQM principles that are important for a successful TQM implementation and lastly, determining the result of TQM implementation. The dissertation will obtain information by embarking on a quantitative research method and uses questionnaires to acquire reliable information. Random sampling will be used to avoid bias and ensure everyone in the population of Feltex can be selected.

The dissertation will be valuable in the automotive organisations because it brings into attention the management aspects that require improvement. Furthermore, the dissertation may become a basis for TQM framework development for the South African context. The study reveals that TQM is an essential tool in the automotive industry in Durban.

Key words: Total quality management; Customer satisfaction; Employee satisfaction and Productivity

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CHAPTER 1
INTRODUCTION

1.1 Introduction

This is an important chapter aimed at giving the reader an understanding of the origins of the Total quality management technique and an insight in Feltex automotive manufacturing company, it also gives the importance and objective of the study and the research gap that the researcher explored. This chapter would be focusing on the background, problem statement, limitations, and delimitations.

Automotive manufacturing industries are crucial in a developing country such as South Africa and its improved operations is of great importance as it contributes towards economic growth and quality of products produced. It is of paramount importance to note that there are many ways that these Automotive industries can ensure or improve their operations, however it is the scope of this study that the researcher explored on the relationship that exist between TQM and improved operations of Feltex which is an Automotive manufacturing company.

Total Quality management is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It encourages the process to be done right the first time with defects and waste being eradicated from operations. TQM is now becoming recognised as a generic management tool applicable in in all sectors and organisations. In recent years, some of the companies which have shifted and implemented Total Quality Management include Ford Motor Company, Phillips Semiconductor, SGL Carbon, and Toyota

During the preceding years, automotive manufacturing organisations have been criticised for poor performance and low productivity compared to other organisations (Alarcon & Ashley, 2013: 59). The automotive manufacturing environment is a highly volatile sector with forever changing specifications required by the customer and changes in the technological environment. Total quality management (TQM) then plays a crucial role in today's business in attending these challenges. Activities that aims at customer satisfaction and continuous improvement.

The certainty is that, organisations that implement TQM improve organisational performance although there are a variety of techniques available such as Just in Time (JIT) and Kaizen

costing technique. The important reason why TQM proves to improve performance is that it merges other techniques and involves everyone in an organisation. However for TQM o work organisations have to scan the environment they operate in and understand the marketing environment such as the size of competitors and the level of demand. Poor implementation of TQM according to Evans and Dean, 2012 would result in manufacturing companies facing challenges such as insufficient materials, management problems, inadequate and a lack of car components standardisation.

TQM then becomes the answer involving quality problems in automotive manufacturing organisation implementation (Kanji & Wong, 2011: 54).

1.2 Background of the research

The origins of TQM are traced from the ancient time, back in the early 1920s when statistical theory was first used to control products quality (Oakland & Aldridge, 2014: 50). The Gurus of TQM developed the concept of TQM such as Deming, Juran and Feigenbaum in Japan and led by the Americans in the 1940s (Carlson, 2012: 56). The South African automotive organisations are under pressure to improve quality of car components thereby remain competitive in the industry. TQM implementation is importation to shift the focus from quality of products to quality of all issues within the organisation (Greene, 2013: 40). According to Ross (2012: 50), many automotive organisations have lost customers and some closed down due to poor quality products that caused customers to buy from competitors or import from other countries

1.2.1 Overview of Feltex automotive

Feltex Automotive is the South Africa's largest manufacturer of automotive components and the leading suppliers of a wide range of quality automotive acoustic and trim components (Christopher, 2012: 150). These components include main floor carpets, dash insulators, trunk package, boot packages, sideliners, engine and passenger compartment insulators, parcel shelves and wheel arch insulators (Christopher, 2016: 170). The below are the samples of components manufactured:

Figure 1.1 Products offered

Source: **Christopher, 2016.**

Moreover, Feltex automotive trim has extensively developed in a sense that the material that is used to produce car components is manufactured within the organisation. Therefore, regarded as the highest automotive component supply industry due to its technological advancement, continuous upgrades and value adding services (Christopher, 2016: 178).

Table 2.1 Company history

Year	Company
1931	Felt and Textile was formed
1975	Ropes and Mattings merged with Felt and Textile to form Ramatex
1980	Barlow Rand Group took over Ramatex
1998	Unbundled from Barlow Rand/CG Smith to form Island View Holdings
1999	Mr C. Daun purchased Feltex from CG Smith
2000	Feltex Ltd was formed
2004	July- Feltex Ltd incorporated into KAP international Holdings & KAP is listed on the stock exchange (JSE).
2012	Steinhoff international acquires 62% stake on KAP international Holdings.

Source: **Christopher, 2016.**

1.2.2 Plants of Feltex automotive

The manufacturing facilities of Feltex Automotive are near assembly plants to facilitate just in time, just in sequence supply and close to original equipment manufacturer (OEM) (Burati,

2015: 149). The key success factors of the automotive business units are consistent quality, outstanding service, and internationally competitive pricing. All the automotive business units have achieved an influential supply position in their product sectors and this has enabled the businesses to achieve competitive prices through economy of scale benefits (Van, 2012: 25). The factories of the company are strategically situated to serve the ever-growing South African automotive industry in a bid to be the most competitive company. The company strive to ensure that they comply with every international standard (Burati, 2015: 165).

Feltex Automotive manufacturing facilities are situated in Rosslyn, Ga-Rankuwa, Port Elizabeth and East London with its head office in Durban (Birchall et al., 2011: 58). All the plants are situated close to its OEM and suppliers as depicted below.

Figure 1.2 locations of Feltex Automotive

Source: **Timme, 2014**

The plants are situated proximity to customers and suppliers to ensure an improved communication. The proximity also minimises transport costs in bringing in materials from suppliers and delivering to customers as well as minimising risks associated with transportation.

1.2.3 Summarised objectives of the company

- To provide quality products that constantly meet and exceed customer requirements

  Nurture culture of doing the job Right the first time;

- Optimising profitability through minimising error and waste in every part of our operation;
- Provide a working environment within our organisation that supports teamwork and fosters a culture of employee involvement and commitment to quality excellence
- Direct our quality efforts in the prevention of defects and not on the detection of defects
- To be recognised as an international supplier of world class automotive components.

Source: William, 2015: 190.

In 2005 to 2010, various models of techniques were introduced at Toyota but resulted in poor output due to poor quality inputs. A removable floor mat that ware used in the cars was declared not to be off a quality (Jiménez, 2010: 24). The floor mats moved and wedge the accelerator in position, causing it to stick and lead to a potential crash. This caused Toyota recall of approximately 9 million cars in the US and 52 deaths attributed to the issue (Greene, 2013: 52). Despite proactively cancelling the sales and production of the recalled models, Toyota's reputation as a quality leader was damaged (Mouton, 2012: 121).

From the Toyota case it became a problem that automotive firms have been trying to address and make sure that whatever is produced and sold to a customer should not be returned as this would cost the customer financially as well as its reputation. It became valid that automotive organisations to be competitive require development by implementing TQM and increase productivity (Van, 2012: 55). TQM implementation is no longer fashionable but it is a core principle and value that minimise waste and is the paradigm for many manufacturing operations (Holloway, 2014: 41). Total quality management is a management philosophy that concentrates on people and operational process for customer satisfaction and better organisational performance (Greene, 2013: 85). In addition, TQM involves the appropriate management of work processes that allows for continuous improvement in every business division to exceed customer expectation (Decock, 2011: 50).

Hence, implementation of TQM ensures that organisations change how they perform activities to eliminate inefficiency, improve customer satisfaction and achieve the best practice that can result in increased market share and profitability (Porter, 2013: 22). Porter noted that constant improvement in the effectiveness of operation is essential but not a sufficient factor for

organisation to be profitable. According to Sila, (2012: 35) TQM helps in improving the quality of products and reduces the scrap, rework and the need for buffer stock by establishing a stable production process. The author continues that TQM reduces the cost of production and time of production and explores if TQM can improve operation efficiency.

1.3 Research problem

Automotive manufacturing companies have always been so important in the African continent so as in South Africa, as observed by (Massoud & Syed, 2013: 87) who have ascertained that automotive manufacturing companies operate in a highly volatile environment that is tough for business survival. This is very practical in South African economy where the market is furnished with survival threats and stiff competition with products from China, Japan & Germany. These automotive manufacturing companies incur huge cost in producing their products hence reducing the profit that they make (Greene, 2013: 65). Total Quality Management technique as one of the cost management techniques that can be adopted to reduce these high operational costs which lowers profitability of automotive manufacturing companies by adopting the advantages of Total Quality Management. It is this research endeavor to explore deeply whether Total Quality Management technique could be adopted and influence the operations of automotive manufacturing companies

TQM is extensively used by almost every organisation in every industry as the basis to improve quality in all facet of the organisation (Jiménez, 2010: 64). Although TQM was initiated and still widely used in the automotive organisations, but some of the automotive companies still fail to implement and understand the concept of TQM (Greene, 2013: 65). The reasons for the failure of TQM implementation is caused by the failure of initially understanding of the concept of TQM (Porter, 2013: 25). Feltex automotive is one of the automotive organisations that are TQM implementation oriented.

According to the organisation's article by Montgomery (2014: 12) the organisation previously used ISO 9000, which was not doing bad. However, in 2015 competition escalated customer demands, required increased quality and specialised car components, which resulted in a loss of a contract with Toyota due to poor quality product. This called for a better way of doing things in the organisation and TQM implementation was the only option to improve the company products (Montgomery, 2014: 58). The loss of the contract costs the organisation

millions because it had to shut down the fehreh department thereby, cut the supply and the space or department remained idle (Jiménez, 2010: 73). The shutdown of the department caused not just the organisation but also affected the society due to the loss of more than 200 jobs (Hitt, 2012: 16).

Without TQM implementation, the supplier cannot supply the material on time, machine break down, operator attitude and the material that are not of quality would resulting in bottle necks. Hence, cause delays in the delivery of products and services to the customers. However, TQM implementation in the automotive organisations eliminates defects, improves product design, speed service delivery, improve productivity and allow for cost reduction (Feltex, 2015: 55).

1.4 Research objectives

- To provide an understanding of TQM in the automotive manufacturing organisation by giving account of TQM making use of Deming's theory.
- To examine the relationship among the TQM principles that lead to a successful TQM implementation in the automotive manufacturing organisation.
- To determine the outcomes of successfully TQM implementation in the automotive manufacturing organisation.

1.5 Research question

- What is Deming's theory on TQM in the automotive manufacturing organisation?
- What is the relationship among the principles of TQM that lead to a successful implementation in the automotive manufacturing organisation?
- What are the outcomes of TQM implementation in the automotive manufacturing organisation?

1.5.1 Research hypothesis

1) **H_0** Demings theory aids the understanding of TQM in automotive manufacturing industries.

H_1 Demings theory does not aid the understanding of TQM in automotive manufacturing industries

2) **H_0** Implementation of TQM principles leads to the success of automotive manufacturing industries.

H_1 Implementation of TQM principles does not lead to the success of automotive manufacturing industries.

3) **H_0** Adoption of TQM produces positive outcomes in automotive manufacturing industries.

H_1 Adoption of TQM does not produce positive outcomes in automotive manufacturing industries.

1.6 Significance of the study

The research was done as part and partial fulfillment of the Masters of Commerce and it will help develop and improve research skills previously acquired and would provide essential information to the community, firms, student, and the university.

1.6.1 The researcher

The research was conducted as part and partial fulfillment of the Masters of Commerce and as a tool that would help equip the student with researching skills and knowhow. These acquired skills would help the candidate in the scientific research the researcher would carry in pursuit of his/her commerce career.

The student made use of different strand of courses acquired from his first year to final year at KwaZulu Natal University and woven them into a strong rope of a tangible and valuable research applicable to the industry.

1.6.2 Organisation

The research would provide related automotive manufacturing companies with information that did not exist on how to improve or increase their profitability and quality of operation in a competitive environment like South Africa. Automotive companies would also benefit from recommendations and suggested ways of overcoming problems identified by the research.

1.6.3 University

The research would be essential as it would lead to automotive manufacturing companies giving the University credit as it would benefit from recommendations that has been presented

and suggested. The research would form a research base for further research to the University, Africa and world at large.

1.6.4 Business Community

The research is also significant as it would give an insight on the increasing ways of improving operations, competitiveness, quality of products and hence profitability to firms that have not yet adopted Total Quality Management.

1.7 Delimitation of the study

The study has been focused and limited to Feltex which is an Automotive manufacturing company in Durban on how Total Quality Management technique can improve the operations of an organization.

1.8 Chapter summary

This chapter is aimed at introducing the reader to the researcher's intensions, the significance of the study and highlighting the delimitations of the study.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Total quality management (TQM) is referred to a driving force for the success of every organisation in the entire world (Avery, 2013: 98). Nowadays, ever increasing competition requires doing things right the first time. TQM is the vital determinant of the success in manufacturing organisations (Massoud & Syed, 2013: 87). Numerous organisations in the entire world have implemented TQM with the aim of attaining improved customer satisfaction, increased competitiveness, and effective operation in the organisations (Brown, 2014: 100). The automotive industry in South Africa is a very crucial sector.

Several multinational businesses use South Africa to source components and assemble vehicles for local and intercontinental markets (Bhaskar, 2015: 78). Automotive industry contributes at least 6% to the gross domestic product (GDP) of the country and in 2012 created direct job opportunity with more than 28 000 people in the automotive organisations in South Africa (Benedetti, 2013: 121). Moreover, the industry employ 6 600 personnel in the tyre manufacturing industry and exports 73% international (to the value of R585 billion) from South Africa, mainly to China, the USA, Japan, Germany, and the United Kingdom (Massoud & Syed, 2013: 95).

A successful automotive organisation is often regarded as a symbol of economic success (Basu, 2012: 28). TQM have been implemented for many decades in various industries including automotive, fast moving consumer goods and even in the service sectors (Wad, 2014: 52). Although some industries have experience great success, others have failed. It can be said that automotive manufacturing organisations fail because of the improper understanding of the TQM concept and the implementation of TQM which is based on a one size fit all assumption that is, prescriptive and not participative (Rutherford & Holmes, 2013: 100).

The consequences of the failure to TQM implementation are lost customers and it open opportunities for competitors to take advantage of the market need which results in the loss of future sales and the image of the organisation (Basu, 2014: 58). According to (Barton, 2014: 221) the successful implementation of TQM depends on the complete understanding of TQM,

top management commitment and involvement of employees in every decision making of the organisation.

This chapter encompasses literature review on the effective performance of an automotive manufacturing organisation through TQM implementation. This chapter firstly give an overview of Feltex automotive manufacturing organisation, which is where the dissertation will be based. Secondly, provide a comprehensive appreciative of the concept of TQM by making use of the expert Dr Edward Deming. Thirdly, examines the relationship among the TQM principles that lead to a successful TQM implementation in an automotive manufacturing organisation. Finally, yet importantly, discuss the outcomes obtained through a successful implementation of TQM in an automotive manufacturing organisation.

2.2 Theoretical review

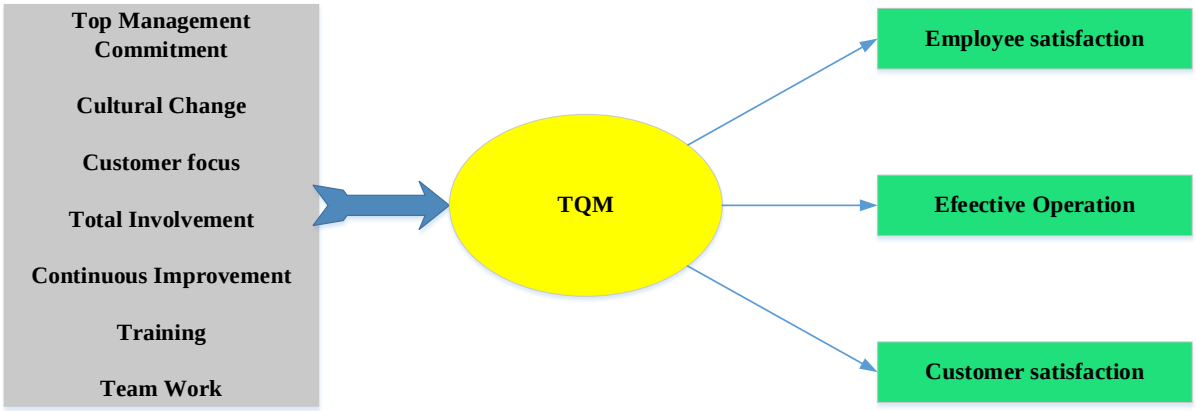
Theoretical framework is one of the research elements that provide guidelines for the research, determine what to measure and give information of what statistical relationships you can come across (William, 2015: 152). It is a structure that can support a theory in a research study. The introduction and description of a theory that explain why a research study exist is called theoretical framework. In the theoretical framework, theories are formulated to explain, predict, and provide understanding on a certain problem to argue and enlarge information within the limit of critical bounding assumptions (Goodman, 2012: 86).

The use of theoretical framework can help the researcher to access the information that is readily available. Moreover, theoretical framework allows the researcher to specify the key variables that influence a phenomenon of interest and highlights the need to examine how those key variables might differ and under what circumstances (Wad, 2014: 90). This dissertation applied conceptual framework to show the importance of relationship between variables of TQM.

2.3 Conceptual framework

Conceptual framework is a diagram that depict a relationship between variables. The below diagram show how employee satisfaction, customer satisfaction and effective performance is achieved.

Figure 2.1 Conceptual framework



***Source*: Giraffe, 2012**

TQM is an umbrella of the success of any organisation. However, to be successful TQM principles need to be applied (Gerard, 2012: 25). In the past decades, studies have been conducted about TQM and the results shows that there is no single definition of TQM. Meroe (2011: 52) systematically reviewed the ideas of quality gurus and pointed out shared similarities on TQM implementation. Among other things, these similarities include customer satisfaction, employee satisfaction, effective operation, and cost reduction. Conversely, Reed et al. (2012: 54) studied the quality of gurus and publicised the differences regarding TQM elements.

The conceptual framework is based in the idea that customer satisfaction, employee satisfaction and effective operation are achieved due to TQM implementation (Feltex, 2015: 55). This can be achieved through the emphasises of management commitment, customer focus, teamwork, training and total involvement of everyone that would provide continuous improvement in the organisation. Automotive organisations that are characterised by having high degree of customer satisfaction are said to have implemented TQM successful and will excel and achieve effective organisational performance (Goodman, 2012: 66). Automotive manufacturing organisations still lack the understanding of the TQM concepts, for that reason the literature review firstly, give account to TQM philosophies, secondly, examine the principles that lead to a successful TQM implementation and lastly determine the outcomes of TQM implementation.

Total Quality Management has existed for years but some industries such as the automotive industry still unable to understand and implement the concept completely. To provide a full

understanding of the concepts of TQM a break down for quality, quality management and total quality management are explained.

2.4 The concept of quality

South Africa is home to a substantial automotive manufacturing sector that is increasingly integrated with the global automotive industry, and hence increasingly affected by changes that are taking place at a global level (Van, 2012: 55). Each day customers are becoming more progressively aware of rising standards and are having access to a wide range of products and services to choose from. There is an ever-increasing demand for quality products or services and this global uprising had forced organisations implement TQM in every facet of the organisation (Holloway, 2014: 41).

Therefore, quality management and the associated continuous improvement techniques are looked upon by many organisations as the means in which they can use to survive in the increasingly aggressive markets to maintain a competitive edge over their rivals (Dale et al, 2012: 200). Thus, the organisations to respond to these marketplaces by ensuring improved quality products, services, and processes throughout the organisation (Oakland, 2013: 221).

According to Walton (2013: 152), quality is one of the important and complex components of a business strategy and an element of production or services that keep customers satisfied. Metri (2016: 89) defines quality as the complete features and appearance of a product or services that have the abilities to satisfy implied customer needs and requirements. He further states that a quality of a product can be recognised through the fitness, function, appearance, and performance. In the opinion of Crosby (2011: 52) quality is what the customers perceives as confirming to their specifications and suggest that to manage quality appropriately it should be measured. Peters (2015: 90) defined quality as a ‘magic bullet’ that provides reduced cost, improved customer services, improved products, and higher margins. The author further stated that, quality is in the eyes of the beholder. This mean it is what the customer perceives.

In the opinion of Peter (2015: 90) quality is determinant by the customer, the author view quality as a magic bullet that provides reduced costs improved customer services, improved products and leads to higher margins. On the other hand, Walton (2013: 152), Metri (2016: 90) and (Crosby 2011: 52) share the same views about quality. In summary, these authors view quality as a principle that ensures and improve customer satisfaction. When customers are satisfied, in return costs are reduced because there would be less rework that results in higher

margin for the organisation. This statement supports the view of Peter about quality being a technique that reduces costs across the organisation.

Therefore, quality can be referred as a driving force for customer satisfaction, business profitability and economic growth for the nations. In my opinion, quality is a state of being free from defects, insufficiencies, and trivial variations. Since through quality inefficiencies are reduced and efficiencies improved. In addition, Kondo emphasises quality in two forms that are efficiency and inefficiency.

From the author's point of view, efficiency is about everything that senior strive to achieve and more focused on customer expectations. The author continues, if the product is of poor quality, consequently the company's profit will decrease because the customers will not buy the product again or any product within the company. For quality to be a success need to be managed and requires certain strategies to be followed such as quality management (Koskela, 2012: 6).

2.5 Quality management

Quality management is not a new concept, it is an important strategy for every organisational success (Abusa, 2014: 15). Quality management includes the creation of strategies, goals setting, planning and implementation of plans, using control systems for monitoring feedback and taking corrective actions (Jorge, 2013: 10). According to Koskela (2012: 16). quality management is a technique that ensures that an organisation, product or service is consistent (Abusa, 2014: 18). Drawing from the above author's definition of quality management, it can be summarised that quality management eliminate the failure in the product, service, and processes. This is because quality management focuses not only on the product but also on the means to achieve it while improving the overall business efficiency and customer satisfaction (Jorge, 2013: 15).

In support, Oakland (2012: 123) states that quality management is concerned with moving the focus from outside the individual to within. The objective being to make everyone accountable for their own performance and to get them committed to attaining quality in a highly-motivated fashion. The assumptions a director or manager must make to move in this direction are simply that people do not need to be coerced to perform well, and that people want to achieve, accomplish, influence activity and challenge their abilities (Balakroshnan al et.,2015: 154).

The lack of TQM implementation is said to be the cause of quality failure in the automotive manufacturing organisations. At Feltex automotive organisation, quality is viewed as a management tool (Jorge, 2013: 15). However, Xerox Corporate Management Institute defines empowerment as “an organisational state, where people are aligned with business direction and understand their performance boundaries (Bhaskar, 2013: 111). Thus, enabling them to take responsibility and ownership while seeking improvements, identifying the best course of action and initiating steps to satisfy customer requirements (Bhaskar, 2013: 116). In addition, Abusa (2014: 65) emphasises that to obtain a successful TQM implement every member of the organisation from top, middle and lower level be involved in every training and every decision of the organisation.

2.6 The TQM philosophy of William Edwards Deming

In this context, TQM has emerged as a holistic management model because the concept of TQM is much broader than the traditional quality concepts. It encompasses not only product, service, and process improvement but also those elements relating to costs and productivity of people involvement and development (Deming, 2012: 232).

TQM has been arguably as the most significant approach to the management of organisational operations (Capon et al., 2015: 123). Deming (2012: 154) asserted that TQM helps in the management of operational activities and in business process improvement in two ways: Firstly, by increasing effectiveness in the organisational processes. Secondly, by reducing defects and eliminate extra costs to products and services thus decreasing overall costs and creating extra capital for the development of organisational resources such as human capital.

According to Deming (2012: 141), a quality product includes a good design with effective production procedures that provides a satisfaction to the customer. Quality products or services retain customers, attract more potential customers which provides profit to the company and ensures sustainable market. The philosophy of Deming in TQM emphasises the important role play by the management team in the organisations. In the opinion of Deming (2012: 136) continuous quality improvement opportunities call for the management actions, very the operational level can do few actions. This view led to his often-quoted dictum that more that 85% of quality problems can be caused and resolved by the management.

On the opposite Dean & Bowen (2016: 100) view TQM as a tool suitable for middle and lower level employees. The author further states that TQM management delegate jobs, however

employees act, practice and produce goods and services. In his assumption, the failure, and the success of the product of the organisation are in the hands of the workers. But, in the opinion of Capon et al., (2015: 102) TQM is everybody business, this is to say the success of the business relies in every level of the organisation. This author's view agrees with the opinion of Deming that management influences the failure and success of the organisation. However, the author further states that operational employees build or destroy the organisation through the output produced.

The emphasise of the author is that both management and employees should work together to ensure the success of the organisation. The author further states that employees that are in a management level should not only manage but become leaders of the organisation. In my opinion, TQM should not only be management based but be organisational based. This is because management delegate but employees do the actual work. For this, it is important that management lead by examples and ensures that everyone within the organisation are involved in a continuous training. In contract Daniel (2013: 40) view TQM as a philosophy that organise and ensures the involvement of every person in the organisation, which enables an improved flow of information and knowledge.

A good quality product or service allows an organisation to retain and attract more customers. However, poor quality leads to unsatisfied customers, so the costs of poor quality are not just those of immediate waste but also involves the loss of future sales and the image of the organisation (Hill & Kearney, 2012: 41).

In summary, TQM can be regarded as a management philosophy that focuses on the work process and people with the aim of satisfying customers and improving the organisational performance (Decock, 2011: 50). TQM involves the appropriate management of work processes which allows for continuous improvement in all business units for surpassing customer expectations (Samson, 2015: 18). TQM further aims on reducing waste and rework to reduce cost and increase efficiency in the production of automotive manufacturing components (Daniel, 2013: 40).

2.7 Principles of TQM

The principles of TQM are the framework that when utilised efficiently leads to a successful implement and application of TQM in every organisation whether service or manufacturing

organisations (Kowaris, 2015: 98). The principles help to analyse on what factors influence the quality of a business and techniques that can be used to control and assure quality in products and services offered (Yang, 2012: 85).

2.7.1 Leadership and top management commitment

According to (Crosby, 2011: 92) to accomplish great things, one must not only act but also dream, not only plan but also believe. In the context of TQM, leadership is defined as providing and driving the vision. (Neelin, 2012: 189) noted that a TQM based leadership puts companies far ahead of their competitors in terms of sales, profits, and employee morale. Effective leadership for TQM involves everyone in the organisation in value adding activities. Moreover, the author speculated that the most important requirement for senior management to practise TQM is by firmly believing that TQM is the only way to do business and manage organisations. To promote a successful business efficiency and effectiveness, TQM must be widely organisational and must begin in the top with chief executive or equivalent (Birchall et al.,2013: 58).

The successful implementation of TQM most particular in the automotive organisations are very rare. Kowari (2015: 100) highlighted that top management commitment is one of the reason that TQM in a manufacturing organisation are a success or failure. Failure in the implementation often take place when the management make critical schedule, scope, and budget decisions rather than the team who has to deliver the product. This calls for failure in the provision of quality goods because the employees would work to meet the schedule committed by the management and not consulted to the employee's capabilities (Yang, 2012: 105). According to Van (2012: 55) excessive schedule pressure can suppress due diligence thereby leading to a commitment failure.

Deming (2012: 159) argues that senior employees must behave as leaders not managers. According to Crosby (2012: 100) the empirical investigation conducted on leadership and TQM of ISO certificate companies in Sri Lanka, a senior role is to serve as a role model in planning, communicating, reviewing of organisational performance and employee recognition. Being a role model allows to reinforce values and expectation while building leadership, commitment, and initiative in the whole organisation. TQM is very people oriented which means a good leadership would lead to an effective TQM implementation (Massoud & Syed, 2013: 59).

Commitment from the top management is prerequisite for the firm's TQM implementation (Rutherford & Holmes, 2013: 115). It is crucial for the top management to show commitment through actions rather than words. The commitment of top management is important because it can change the worker's commitment to TQM (Van, 2012: 90). Employee's quality awareness can be easily improved if manager's priorities quality over costs and priorities quality over meeting production schedules (Kondo, 2012: 80). To implement TQM, managers need to be committed in establishing a firm that continually view quality as a primary goal. If the organisational culture does not embody quality, any quality improvement effort is probably shallow and short-lived (Juran & Gryna, 2013: 98).

It is not easy and rarely a success to improve quality of a product and manage quality if top managers do not lead and participate (Juran & Gryna, 2013: 118). Quality improvement is about making decisions and creating things that never exist before. It is not sufficient for top managers to stand on the side-lines and shout "improve product quality and intensify quality management" (Larry, 2015: 97). There is no way that a manufacturing firm can implement quality improvement activities if the top managers are bystanders. Particularly in a firm with an autocratic general manager, there is a strong trend that employees act on something only in proportion to the manager's degree of interest (Larry, 2015: 97). Top management participation is crucial to a firm's quality improvement efforts; it obviously helps in spreading quality consciousness throughout the firm (Wad, 2014: 112).

2.7.2 Cultural change

In the opinion of Oakland (2012: 125) TQM is a strategy to manage the entire organisational process with the aim of satisfying customers in every stage and both internal and external. Cultural change can be referred to changing the business culture of an organisation to be customer focused (Larry, 2015: 127). Cultural change plays an importance role in the organisations because the organisation move away on what it believe into what the executive groups attend to. It further draws up on the organisation strategic position as it dictates the daily activities (Godfrey et al. 2013: 97). Culture provides directions in the organisations on how to plan, organise and implement the organisational strategies. Cultural change should go in hand with what the society believe to be good and must always see continuous improvement, respect for individual as a common good (Evans & Lindsay 2014: 148).

The quality of culture calls for decentralisation of responsibilities to the operators. In doing so, it enables every employee to utilise their skills, capabilities and ensures a continuous improvement in the processes of the organisation (Evans & Lindsay 2014:88). This make quality of the organisation every body's business drawing from the top management level, middle management level and lower levels (Anderson et al.,2013: 139). The process of cultural change is taken as a big decision by many organisations as the organisation should change their traditional behaviour. Moreover, is requires the change in people's attitude, deep involvement, or commitment of management to the organisation's strategy of continuous improvement, open communication, and cooperation in the entire organisation (Anderson et al., 2013: 145).

2.7.3 Customer focus

Customers are the pillars of the organisation (Crosby, 2012: 92). The first and main important characteristic of successful TQM implementation is the attention given by the organisation to the customers. The more knowledge the organisation has about their customers; the better-quality goods they can offer. In the automotive manufacturing organisations, it is important that the products offered satisfy and overcomes the customer's expectations (Neelin, 2012: 123). The purpose is the identification than meeting the needs of all the customers. According to Crosby (2012: 142) a satisfying product add value to the customer and reduces value when it does not meet what the customer desire. That is why it is concluded that the level of quality can only be measured by the customer. In many instances, it is not always easy to determine what the customer's need because customer tastes and preferences changes from time to time (Wad, 2014: 112).

In addition, customer expectations vary from a customer to another. For example, in the automotive organisations, the preferences vary frequently from small cars to four-wheel drive vehicles and then back to small cars (Wad, 2014: 136). It is important for the automotive organisations to be ahead of new trends. This calls for automotive organisations to gather information constantly through research groups, markets studies and meeting with customers to remain close to customer's taste (Rutherford & Holmes, 2013: 120). For the organisations to be informed on how to satisfy or exceed customer expectations, it is important to know precisely their customer specifications to meet the quality specification of a customer Peters (2015: 141).

Table 2.1 Benefits of focusing on customers

The benefits of this principle application	The application of this principle will lead
Increased revenues and market quota obtained through flexibility and a quick answer related to the market opportunities	Researching and comprehending client's needs and expectations, measuring clients' satisfaction and acting according to the obtained results
Increased effectiveness regarding the use of the organisation resources to increase clients' satisfaction.	Assuring the fact that the organisation objectives are correlated with clients' needs and expectations
The improvement of clients' loyalty degree that has thus repetitive business transactions.	Communicating these needs and expectations within the organisation and systematic management of the relation with the clients

***Source*: Wad, 2014**

A successful TQM implementation is the one where by organisations developed a customer focused operational process while committing the resources that position customers and meeting their expectation as an asset to the financial well-being of the organisation Juran, 2013: 100). Filippini & Forza (2013: 25) emphasised the importance of the organisation to maintain a close link with their customers to know their exact requirements and to measure how it has been successful meeting up the customer requirements. According to Muffatto & Panizzolo (2013: 254), a high level of customer satisfaction is obtained solely by providing services or products whose features will satisfy customer's requirements or needs.

The customer's needs and expectation serve to drive development of new service offering. This is because customers determine the quality level of service delivered (Jablonski, 2015: 123). Oakland (2012: 123), noted that organisations are made up of a series of internal suppliers and customers. To him, this forms the quality chain of the company and it implies that every employee is a potential customer and supplier during production. The process of production is structured in a way where each process has needs and expectation that must be fulfilled by others in the network of production. The effective fulfilment of these needs leads to the production of quality goods and services (Godfrey et al. 2013: 12).

2.7.4 Total involvement

The motivation of employees plays an important role to focus on the satisfaction of customers. Motivated workforces are more productive than the ones who are de-motivated (Bernardino & Russell, 2013: 58). Total involvement is about involving every one in every decision making. Employees are the pillar of every organisation. They are the prime contributor to the success of the organisation (Neelin, 2012: 75). Every business made in an organisation always require the utilisation of employees. For example, if the organisation wants to expand business or increase it profits only the employees can make it happen (Wad, 2014: 96). Employees are the expandable resource in the organisation. Any improvement takes place in the organisation because of the employees. Therefore, the involvement of the employees is important for TQM (Filippini & Forza, 2013: 98).

The involvement of employees, empowerment and involving them into decision-making process enables the opportunity for consistent improvement which is one of the of goals TQM implementation (Jackson, 2015: 10). TQM indeed improves quality and increase productivity. There is no doubt that every organisational survival depends on the employee's involvement and quality management (Kim et al., 2012: 152).

Jackson (2015: 10) emphasised that there must be a commitment and structure to the development of employees, bearing in mind that employees are the assets of the organisations. TQM emphasises that everyone in the organisation have a clear understanding of what is expected from them, how their processes relate to the entire organisation and how their productivity can lead to the failure or success of the organisation (Larry, 2015:57). Encourage is important to the workforce, it calls employees to control, manage and improve the processes that are within their sphere of responsibility (Larry, 2015: 61).

Barton & Abhishek (2012: 98) encourage the sharing of knowledge. The authors further elude that the key to the success of an organisation requires a quality workforce that are developed and have the capabilities to attract and retain customers. He further stated that to ensure that customers are treated as kings; employees should be treated like royalty. The attention given to the employees ought to be the same as the one given to the customers. The dissatisfied employees result to increased employees' turnover, limited opportunity for customer service training and reduced quality service (Birchall et al.,2013: 58). Quality in an organisation can only be assured when organisation management style is characterised and focused on the

importance of empowering workforce by collaborating with them in the business (Wad, 2014: 72). Successful organisations make improvements by shifting hierarchy upside down and giving power to the employees (Neelin, 2012: 46).

Deming claimed that participation and involvement of employees in every level leads to improved present quality and future product or service (Gerard, 2012: 98). Even non-managerial workers can make a vital contribution when they are involved in quality improvement processes, decision-making processes, and policymaking issues (Larry, 2015: 46). Automotive manufacturing organisation must utilise the employee's skills and abilities to achieve business performance (Dale, 2012: 189). The major benefits of involving employees are enhanced morale, increased productivity, and innovation (Hansson, 2015: 111).

2.7.5 Continuous improvement

Continuous improvement is about commitment to a continuous examination of the processes used by the organisation (Fuentes-Fuentes et al, 2014: 45). Turney & Anderson (2016: 75) defined continuous improvement as the pursuit of improvement in the delivery of value to customers. Meaning is about searching for never ending improvements and developing processes to find improved methods of changing inputs into beneficial outputs. This was supported by Dean & Bowen (2015: 56) who argued that the satisfaction of customers could only be attained through the relentless improvement of processes that create product or services.

According to Benedetti (2013: 159) continuous improvement is an on-going change that focus mainly on boosting the effectiveness and efficiency of an organisation to fulfil its policy and objectives. Continuous improvement includes numerous elements such as business strategy, business result, customers, employees, customers, and supplier relationship (Benedetti, 2013: 159). Continuous improvement helps to reduce the process variability thus continuously improving the output performance (Larry, 2015: 122). Patrick (2015: 65) argued that in TQM, the best way to improve organisational performance is to continuously improve the performance.

The expectations of customers from vary time to time and are typically rising as quality management begins to yield result (Patrick, 2015: 75). It is crucial to bear in mind that when customers are accessing quality, they do not only compare a supplier's current product or services to previous years but they compare quality to other organisations that offer the same

product and services (Hansson, 2015: 111). TQM is concerned with continuous improvement in all work from high level strategic planning and decision making to detailed execution of work elements on the shop floor (Deming, 2015: 125). It stems from the belief that errors can be avoided and defect can be prevented. Continuous improvement emphasises improvement in capabilities of the organisation to produce improved results in the future (Metri, 2016: 152). To continuous improve in the future a Plan, Do, Check and Act (PDCA) cycle can be applied.

Figure 2.2 The below is the PDSA cycle

Plan – what is needed

Do- it

Check- that is work

Act- to correct any problems or improve performance

Source: **Juran, 2012**

PDCA cycle is a method that is used worldwide with the idea to constantly improve (Evans & James, 2015: 54). Thereby, ease the difference between the requirements of the customers and the output of the organisation (Evans & James, 2015: 54). The cycle is about never-ending improvements by leaning systematically on what works and what doesn't work, after one cycle is complete, another one begins (Lindsay, 2013: 201). PDCA is a technique that aims to control and achieve effective and reliable results in the activities of an organisation (Wiley & Sons 2014: 192). It is a competent manner to improve processes. This means that PDCA cycle standardise quality control information, avoids rational errors in the analysis and provides clear information that is easier to understand.

PDCA is important for the implementation of TQM because it may be used to ease the transition to a management approach concentrating to continuous improvement (Zhang, 2012:

26). The processes used by PDCA imply constant evaluation of the whole system which enables the early discovery of potential failures or improvement points (Wiley & Sons 2014: 198). This philosophy forms a necessity to conduct a detailed audit at all stages of work.

The PDCA cycle has provided positive effect in many organisations, these effects include improved quality goods and services, improved customer satisfaction, increased productivity and minimised total costs of production (Zhang, 2012: 34). PDCA is one approach toward TQM and is a basis on which Six Sigma's DMAIC model rests. The PDCA cycle provides a feedback mechanism for continual quality improvement (Elverson & Wilmot, 2001: 30). These stages help in ensuring continuous quality management in the automotive manufacturing organisations (Evans & James, 2015: 70).

Plan is the first stage of the cycle that is about evaluating the current process and make plans based on any problems they find (Godfrey et al. 2013: 37). This requires collecting data, document all currently used procedures and identify problems. This information helps to develop a plan that aim to improve, measure and evaluate performance (Evans & Lindsay 2014: 28). Do is the second stage that focus on the implementation. In this, stage managers must document all changes and gather data for evaluation. The third stage is study whereby data is evaluated to see whether the plan is achieving the goals established in the plan stage (Evans & Lindsay 2014: 68).

The last stage is about acting based on the results of the first three stages. To ensure that the cycle is accomplished, the better way is by communicating to all members of the organisation and provide feedback of the task taken (Chaun & Soon, 2015: 135). This will provide a clear understanding on why new procedures should be implemented. After acting, the cycle begins again. The major benefit obtained through PDCA are the alignment of the improved activities at all levels with the strategic intentions of the organisations and the flexibility to react rapidly at the occurrence of any opportunities (Crownover, 2012: 58).

2.7.6 Training

Training is about development individual's ability, mind-set and changing of attitude Stahl (2012:25). Training for many years has been recognised as an importance to the implementation of TQM. One of the Deming's 14 points emphasised the training of employees on the quality improvement techniques of the organisation (Christopher, 2016: 89). Organisations that commit on TQM invest on training. Samson & Terziovski (2013: 86)

believed that training is important to the internal transferring of quality ideas and application because without training, there will not be any solid foundation for a formal quality program. Filippini and Forza (2013: 25) argued that TQM does not come isolate and does not have focus on a single effort but must be conducted on a continuous basis.

Employee training is crucial for TQM programs such as the adoption of new quality concepts, the application of customer satisfaction systems, the use of statistical quality control and the change of quality control circle (Bowen & Lawler, 2015: 85). Empirical studies noted that training is applied more in organisations that commonly use ISO certification than those without it. Similarly, Jackson (2015: 90) noted the fundamental links between quality initiatives, involvement of employees and development.

Any automotive organisation should have a comprehensive approach of education and training that includes quality standards, processes, and skills for quality improvement (Hansson, 2015: 121). Training allows continuous improvement within and outside the organisation trough continual satisfaction obtained by the customers. Training assist in preparing the workforce towards managing the TQM philosophy in the process of production (Bowen & Lawler, 2015: 85).

Training equips people with necessary skills and techniques of quality improvement. Training is argued to be the most powerful building block of business achievement of its aim and objectives (Caulcutt, 2015: 98). Due to training employees are able to identify opportunities as it is directed at providing necessary skills and knowledge for all employees to be able to contribute to the continuous quality improvement process of production (Gerard, 2012: 98). Juran (2013: 87) argued that training and development programme should not be a onetime event but a lifelong process.

2.7.7 Teamwork

Teamwork can be referred to working as a group for the improvement of employee's and delegation of work task to the employees. Teamwork creates an environment of communal relationship, involvement, and participation in the entire organisation (Bowen & Lawler, 2015: 92). According to Luke (2015: 30) teamwork as a TQM practice is certainly related to job satisfaction of employees. Additionally, teamwork is the key TQM principle that leads to increased job satisfaction levels.

Crosby (2012: 52) argued that the whole organisation must strive to work for improving quality and maintain quality improvement activities by implementing teamwork practice. The creation of teams in an organisation is important as it open a room for the success of the organisation. Moreover, team work result in more commitment and involvement of employees in an organisation (Wad, 2014: 82). This is because teamwork opens for different ideas and views of the team members and everybody when working in a team feels a need to participate or have a voice in every decision making (Larry, 2015: 86).

A good team aim for effective and efficiency of product manufacturing through the integration of activities involved in the process of production (Fuentes-Fuentes et al, 2014: 45). Dale (2002: 12) argued that teamwork is a key attribute of involvement. To Dale, teamwork aids for commitment of the workforce to the organisational goals and objectives. The researcher further states that is crucial to build a team that have people with good attitudinal to work in a group to realise the gains of quality management. Martinez (2016: 34) argued that teamwork contributes to the generation of improvements that are proposed by the workforce.

Practice teamwork in an organisation is very beneficial because, teams allow organisation to receive quicker and better solutions to problems (Gerard, 2012: 98). Teamwork also provide more permanent improvements in processes and operations of the organisation. The practice of teamwork in the organisations automatically improve TQM because employees in a team feel more comfortable in discussing problems that may take place and it make it easy to find solutions and put them into place (Caulcutt, 2015: 101). Three main teams that automotive organisations implement are quality improvement teams, problem solving teams and natural work teas (Dale, 2012: 12).

Quality improvement teams (QITs) are the teams that work on a temporal basis with the aim of dealing with specific problems that usual recur (Hansson, 2015: 111). This team are usually formed to operate on a short period, between three to twelve months (Hansson, 2015: 115). On the other hand, problem solving teams (PSTs) works closely like quality improvement teams because these teams are also based on temporary basis. However, problem solving teams are more focused on classifying and conquering the root or the causes of the problem (Lyman, 2014: 111). Problem solving team are usually last from one week to three months. Finally, the natural work teams (NWTs) contains a small group of skilled employees that share tasks and responsibilities (Merlo, 2012: 15). This team make use of terms such as employees involvement

teams, self-managing teams and quality circles. This team is the one that use the least of time, they operate for one to two hours a week (Merlo, 2012: 29).

In every organisation, teamwork is necessary because it involves the collaboration of different levels within the organisation such as collaboration between managers and non-managers, functions also customers and suppliers (Dean & Bowen, 2015: 85). Within the context of TQM, teamwork is an important outcome and a condition for continuous improvement. It controls efforts to solve quality problems at the same time place overall responsibility for quality with the teams while removing the potential for individual blame (Wilkinson, 2012: 25).

Teamwork enables improved sharing of information within the work group and impose for greater access to information and cooperation within and outside the organisation (Wilkinson, 2012: 30). In line with this argument and in agreement with the results of Patrick (2015: 65) teamwork was perceived as the dominant TQM practice, which has a strong association with job satisfaction. Other benefits of teamwork are listed below:

Table 2.2 The benefits of team work

The benefits of team work
1. Recommendations made by teams are more likely to be accepted and implemented where the team is highly formidable, unlike the individual suggestion that represents just an individual's opinion.
2. A greater variety of complex problem will be tackled i.e. problems beyond the capability of an individual or department can be handled more efficiently through the pooling of resources together.
3. Working in teams exposes a problem to a great variety of knowledge thus problems beyond functional departments can be solved more easily.
4. Team work will boost workers' morale and ownership through participation in problem solving and decision-making.

Source: **Deming, 2012**

The application of the principles of TQM is crucial for every organisation, to be specific in the automotive organisation because its leads to successful implementation of TQM (Koskela, 2012: 45). According to Dale (2012: 86) the organisations that implement TQM are least prone

to the failure and close down of the organisations. However, benefit from improved employee satisfaction, effective operation that all contributes to the improved customer satisfaction (Siegel, 2014: 77).

2.8 Outcomes of TQM implementation

The outcomes are the benefits or results received from partaking in something. As for this study, the outcome refers to benefits obtained through the implementation of TQM in the automotive organisation.

2.8.1 Employee satisfaction (ES)

According to Deming, (2014: 111) satisfaction is about the level of fulfilment of needs, wants or desires that one obtained through a usage of products or services. Employee satisfaction is the terminology used to describe whether employees are happy, contended and have fulfilled desires and needs at work (Oakland, 2012: 125). Many measures support that employee satisfaction leads to employee motivation, employee goal achievement and positive employee morale in the work place (Godfrey et al. 2013: 118).

Stahl (2012: 54) defined employee satisfaction as a combination of effective reactions to differentiate the perceptions of what the employee has and what the employee wants. According to Anderson et al. (2016: 85) employee satisfaction is about how pleased the employee is with the position held considering also the working environment. Evans & Lindsay (2014: 98) argued that employee's satisfaction is a feeling of an individual on the various aspects of the organisation such as policies, objectives, and the work environment.

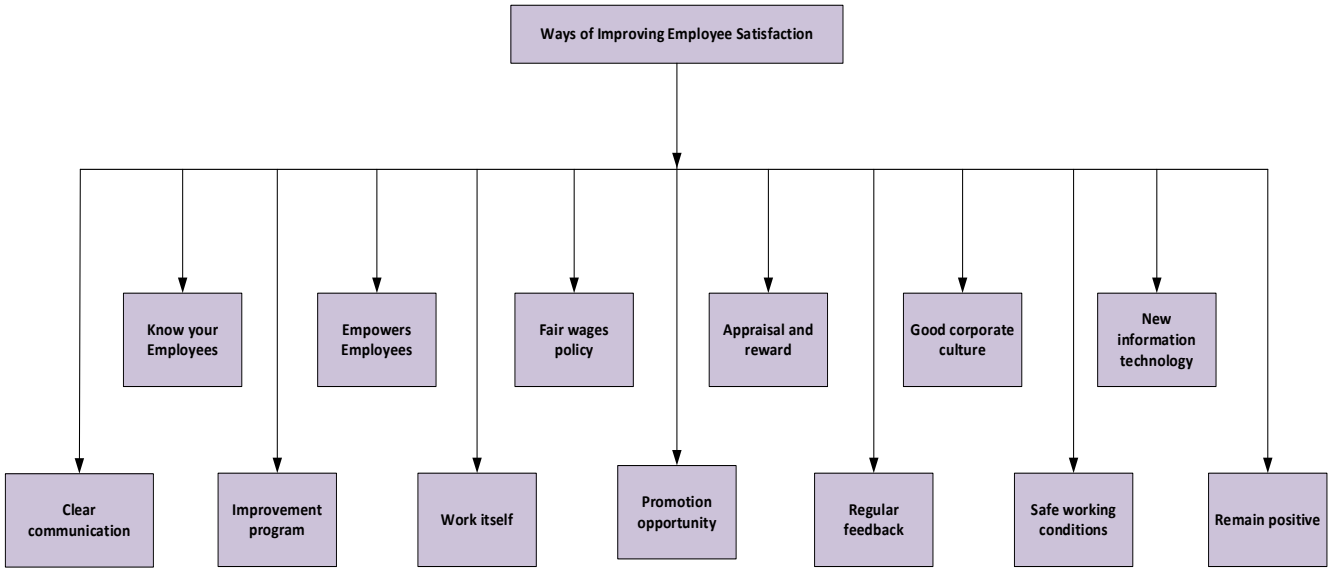
In simple terms, employee satisfaction depends on what an individual want from the world and what that individual obtains (Miguel, 2015: 86). There are several factors that affect the effectiveness of the organisation, but one important is the employee's satisfaction (Crownover, 2012: 86). Christopher (2016: 19) stated that the employees are more loyal and productive when they are satisfied. Also, the satisfied employees that affect the satisfaction of customers and organisation productivity.

There are several ways of ensuring a happy workforce and should be noted that the satisfaction of employees is not limited and vary from employee to employee (Aram, 2015: 148). To ensure the satisfaction of employees, sometimes calls for the change in the behaviour of employees to execute duties more effectively to gain improved job satisfaction (Coronado & Antony 2012:

100). Some of the key elements that contributes to employee satisfaction includes good relationship with colleagues, fair salary, proper working conditions, training and education opportunities and career development (Yang, 2012: 115).

The behaviour of the employees are typically reflecting the moral of the organisation. In aspect of customer services and sales, satisfied employees are extremely important because they represent the company to the public (Elverson & Wilmot, 2015: 89). There are certain steps or strategies that can be implemented to increase employee's satisfaction and loyalty thereby increase business revenue (Kanji &Wallace, 2015: 83). Those are diagraph as follows:

Figure 2.3 Strategies to improve employee satisfaction



Source: **Coronado & Antony, 2012**

Within an organisation, it is important to share a culture of trust and empowerment that influences a proper communication to achieve employee satisfaction (Basu, 2014: 148). In the TQM framework diagrammed above, employee satisfaction is considered as a key indicator of operational performance and customer satisfaction. The strategies to improve employee satisfaction are tabulated as follows:

Table 2.3 employee satisfaction

What required	What it means
1. Clear, Concise and Consistent Communication:	In many organisations, employee do not have a clear and concise meaning of the organisation's mission, vision, and objectives. Building an organisational culture that enforce employees to be an

	integral part of the organisation can be an effective way of getting the most from the talents brought by the employees to the organisation. It is important to always keep the workforce informed of the challenges, progress and how the employees can contribute to the success of the organisation.
2. Know employees and create a team.	Hiring of the qualified personnel for the job and clearly define the expectations from the employees boost the performance and productivity of the organisation. Every organisation must create time to install trust and accountability. The building of team in an organisation propel the business to greater success through combined ideas and greater and faster decision-making.
3. Training and other improvement programs	Training and the provision of necessary education and coaching improves employee's skills and provide a positive mind-set to the employees that the organisation is interested in their success and readiness for new responsibilities.
4. Empower employees across the company:	It is important to create new appropriate opportunities for employees across the organisation. Decentralising the decision-making in the organisation is one of the elements for employee's satisfaction. The employers need to make sure that the employees know that they trust to perform them to the best of their ability.
5. Work itself	The employee satisfaction can be increased through job rotation, job enlargement such as knowledge accessibility and job enrichment. Target should be accessible to any employee

Source: **Christopher, 2016**

A successful TQM implementation calls for commitment and trained employees that participate fully on the quality improvement activities (Kowaris, 2015: 27). Continuous training and education support the drive for quality. Employees are encouraged to be hands on, communicate more effectively, be innovative and act creatively (Kanji &Wallace, 2015: 43). One of the major emphases of TQM is the empowerment of employees in an attempt to generate improved individual and organisational performance and to help employees achieve certain personal goals (Coronado & Antony, 2012: 100). Continuous training provides the right to participate in the decision-making process and allowing them have control of their immediate job environment (Yang, 2012: 125).

The organisation should often check its employee satisfaction level to find ways to improve employee satisfaction, commitment and innovation (Elverson & Wilmot, 2015: 132). Employee satisfaction can be measures in two ways, one is through obtaining direct information from the employees and from the people that they service which are customers (Yang, 2012:85). Through happy employee's operation run smooth in the organisation, which

reduces mistakes that cut costs for the overall organisation and provide quality products and services (Kanji &Wallace, 2015: 43). Operational effectiveness is explained below as one of the outcomes of TQM implementation.

2.8.2 Operation effectiveness

According to Jenkins (2014: 99) operation effectiveness involves but not limited to efficiency. It refers to practices that allow a company to better utilise its inputs, better implement it processes and achieve its mission and goals by reducing defects in its products or developing better products faster. The implementation of TQM is said to have a significant impact on the effectiveness of the organisation (Jagadeesh, 2014: 97). According to Samson & Terziovski (2013: 100) for an organisation to be accurately effective, its requires every department, individuals and in every level of the operation to cooperate because one mistake that take place can affect the whole process of the operation.

Organisational effectiveness (OE) is one of the major important concepts of the automotive manufacturing organisations (Kowaris, 2015: 127). In the operational effectiveness talent management, the management of change, organisational design, process management and team alignment are the important elements to the effectiveness of the organisation (Christopher, 2016: 119). Organisational effectiveness focus on the effective operation of the organisation. Figure 2.4 reveals on how organisational effectiveness is achieved:

It has been observed that effective TQM implementations improve operation effectiveness, long-term profitability, and financial returns. In addition, higher intensity of TQM practices results in improved quality performance. TQM is positively related to organisational effectiveness because it establishes a system and culture that will provide a fertile environment for organisations to grow (Chuan & Soon, 2014: 48). The opposing argument states that the implementation of TQM principles and practices could hinder organisations from being innovative in their management approach (Hodgetts, 2013: 100).

Figure 2.4 Organisational effectiveness

Source: **Kanji &Wallace, 2015**

There is a growing body of empirical research supporting a direct relationship between the adoption of Total Quality Management (TQM) and improved organisational effectiveness (Hodgetts, 2013: 100). Content of TQM are distinguished based on the issue of two business management orientations: customer orientation and process orientation. In customer orientation approach, organisations are focusing to gain a market advantage where they can perform better than their competitors in terms of attracting and retaining more customers with distinguished products and charge an optimum price (Bhaskar, 2013: 102).

The effective implementation of TQM will increase customer satisfaction with the service offerings (Omachonu & Ross, 2014: 11). Quality enhances customer loyalty through satisfaction; this in turn can generate repeat business and lead to the attraction of new customers through positive word of mouth. The word of mouth communication will help in cost reduction. Juran (2013: 100) noted will provide competitive edge to the company. The improvement in quality will result in increased market share and profitability (Huda, 2013: 89).

2.8.3 Customer satisfaction

Satisfaction can be referred to the fulfilment obtained by customers from using certain products or services (Omachonu & Ross, 2014: 25). It is an assumption that a certain product or service feature offered by product fulfil the needs of the customer. The focal point on the satisfaction is on the consumer not the customer (Yang, 2012: 107). The consumer utilise the product while the customer pays for the product or service. The needs of customers and requirements are deeply understood through TQM implementation (Coronado & Antony 2012: 98). The top

priority of organisations and the basic conditions for the success of the organisation are the improved customer satisfaction (Aram, 2015: 134). There would be no business without customers. Therefore, quality management considers the customer as a basic value that guides an organisation's activities (Kanji &Wallace, 2015: 98).

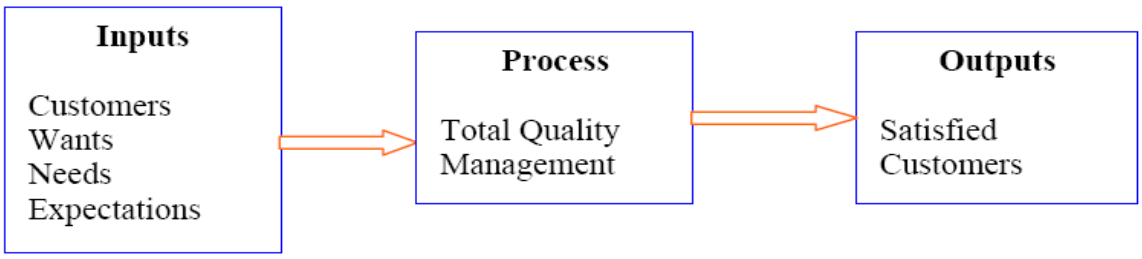
The satisfactory obtained from a product by a customer leads to increased sales, which in turn leads to increased satisfaction of the shareholders (Kowaris, 2015: 89). Therefore, the organisation tend to obtain more investments which in turn improves the return of investment (ROI) of the organisation. When customers are happy, the investors and the business partners become happy as well and that ultimately leads to higher profit (Benedetti, 2013: 150). With a strong customer base, an organisation can win the trust of investors and make the most of every viable business opportunity (Benedetti, 2013: 155). Moreover, customer satisfaction increase sales and higher profits at the same time reducing the risk of business failure and losses because the satisfactory of customers enables the business to understate the expectation and mind-set of consumers (Omachonu & Ross, 2014: 61).

Additionally, the needs of customers form an important input for the designing and production process and influence the decision-making process that aims at winning the heart of customers (Godfrey et al. 2013: 48). TQM ensures that the objects of the organisation, structure and managerial process are formed in a way that serves the customers. There are two types of customers, which are internal customers (employees) and external customers (clients) (Davidson, 2012: 64). The joy that are received by both the internal and external customers are the ones that brings the success to the organisation. Therefore, it becomes a requirement for the organisations to study the needs and desires and apply them on the design and development of the products (Professor, 2014: 163).

For any organisation, customers are a priority. The organisation's success rely on the satisfaction of the customers (Deming, 2012: 55). In the TQM context, organisations should be sensitive and respond rapidly to the customer requirements. Being sensitive to customer requirements goes beyond defect and error reduction and merely meeting specification and reduce customer complains (Siegel, 2014: 87). The meeting of customer needs allows the organisation to be competitive. TQM encourages a customer base approach to service delivery (Walton, 2013: 57).

Thus, the focus is placed on the need to improve the quality of a product or service provided to the customers by understanding the needs and problems of the customer. To maintain a high level of customer satisfaction, an automotive manufacturing organisation need to understand their customer's needs and compare it with the performance of the organisation in meeting the needs of customers (Patrick, 2015: 100). The high level of customer satisfaction is obtained through the provision of products and services that has features requested or required by the customers (Merlo, 2012: 29).

Figure 2.5 Flow that leads to a customer satisfaction.



Source: **Fuentes-Fuentes et al., 2014**

Figure 2.5 illustrates customers as the final judge of service quality, thus customer loyalty and retention, are best optimised with a clear focus on customers' needs and requirement. The main arguments of most authors are that increased customer satisfaction will increase customer loyalty and will bring about repeat purchase; while on the contrary, it is believed unsatisfied customers will defect to other services which are expected to meet their needs (Larry, 2015: 106).

To prevent the churn caused by poor services, and reap the benefit of increased patronage, organisation places much emphasis on services that will make customers satisfied (Caulcutt, 2015: 108). Since customers define service quality, organisations imbibing the TQM approach take measure in involving customers in their quality design (Luke, 2015: 89). According to Juran (2013: 106) customer focus provides a common goal for all organisational activities and members as it incorporates the design of quality and its conformance to quality specification.

Customer satisfaction can be measured by comparing product quality and service quality with those in other firms in the same industrial sector. Use of customer satisfaction information can provide a focus and direction for continuous improvement throughout the entire firm (Peters, 2015: 100). Such information can be used to improve TQM implementation efforts, seek

opportunities to improve product and service quality, and study the time dimension of TQM implementation (Bowen & Lawler, 2015: 123).

Due to the improvements of product through TQM, the interactions with customers are relatively error-free, therefore reduces customer complains (Gerard, 2012: 111). Less customer complaints may also mean that the resources devoted to customer service can be reduced. A higher level of customer satisfaction may also lead to increased market share, as existing customers act on the company's behalf to bring in more customers (Caulcutt, 2015: 85). That means when customers are happy with services provided, the positive image about the industry is created. Furthermore, TQM in an automotive organisations build morality within employees. For example, the continuation and proven success of TQM, most particularly in the participation of employees in that success can lead to a noticeable improvement in employee morale, which in turn reduces employee turnover and therefore reduces the cost of hiring and training new employees (Wiley & Sons, 2014: 15).

For continuous improvement, customers' requirements must be consistently measured and satisfied (Caulcutt, 2015: 78). A company should be organised to obtain the necessary information for the identification of customer requirements and to obtain reliable and fast feedback on the quality levels of currently available products or services (Hansson, 2015: 118). All employees should consider the needs of customers' satisfaction. Therefore, it is necessary to involve frontline employees in decision making at their workplace (Jackson, 2015: 110).

2.9 Conclusion

Total quality management is a major influence in the buying behaviour of customers (Deming, 2012: 85). Thus, many organisation focuses on totality of quality to attract customers and ensure that the needs and demands of customers are met. This enables the organisation to remain competitive while at the same time making profit for the organisation (Lyman, 2014: 120). The implementation of total quality management ensures that organisations manage quality at all functional areas of operation without giving for lapses in the inter functional of operation (Wad, 2014: 109). Total quality management is a philosophy that allows for the participation and contribution of everybody to the quality improvement drive of the organisation (Bowen & Lawler, 2015: 104).

This is aimed at satisfying customers and all stakeholders alike, as the implementation brings about benefit to the organisation. To benefit from the implementation of total quality management, certain core principles that add value to the organisation need to be aligned with the organisation culture as they serve as the bedrock through which quality service delivery are achieved (Larry, 2015: 56). To name a few of the principles of TQM are the commitment of both management and employees to quality, culture which gives room for all to participate, training and empowerment of employees and a focus on satisfaction of customer's demands amongst others (Massoud & Syed, 2013: 83). The proper implementation of these principles in the automotive manufacturing organisation are said to bring added advantages to the organisation, in terms of employee satisfaction, operation effectiveness and customer satisfaction (Deming, 2012: 108). The following chapter (Methodology chapter) will elaborate to list a few how the study will be conducted, where will it be conducted and how data will be analysed.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

The foregoing chapters dealt with the introduction of the study, an overview of effective operation through TQM implementation in an automotive manufacturing organisation. This chapter focuses on the research methodology used, the geographical area where the study will be conducted, the study design and research analysis.

3.2 Research design

According to Biljon (2014: 10) research design is well defined and understood when the terms are distinct into two elements as research and design. This dissertation firstly provides a brief description of each term than provide a combined meaning of 'research design' relating to the dissertation.

3.2.1 The meaning of research

Cooper & Schindler (2013: 15) view research as a methodical study conducted to provide information to solve a problem. Research is further portrayed as a process intended of finding new information on a specific topic (Rajasekar et al., 2016: 19). On the other hand, Saunders, Lewis & Thornhill (2012: 89) stated that research can be characterised as highlighted below:

- Data are collected methodically.
- Data are interpreted methodically.
- There is a clear objective, namely to "find out things".

Saunders et al (2012: 92) therefore explain research as something that people start to find out things in a methodical manner to enhance their knowledge. Conversely, Biljon (2014: 45) argues that when authors describe research they combine research with many other words such as design, process, approaches and dimensions to name a few. According Biljon (2014: 85) research is not an easy term to describe and is not commonly understood. The author further states that research should promote critical thinking, provide answers to questions or solve a problem and must be systematic. The below table provides different definitions of research adapted by Biljon:

Table 3.1 Definitions of research

- A systematic exploration to determine facts or principles or to gather information on an area under debate (Collins English Dictionary, 2013: 137).
- A systematic approach to answering questions (Coon, 2014: 14).
- An organised, methodical, data-based, critical, impartial, scientific analysis or study into a specific problem or issue with the aim of finding solutions or shedding light to the problem or issue (Cavana, Delahaye & Sekaran, 2015: 5).
- A scholarly enquiry involving a careful and diligent search (Williams, Money & Swartz 20015: 289).
- Research is a procedure or scientific enquiry by means of which an endeavour is made to obtain answers to questions and to solve identified problems in a systematic manner with the support of verifiable facts (Brynard & Hanekom 2016: 3).

Source: **Van Biljon, 2014**

This dissertation adheres to the above themes because it aims at resolving the research questions by ensuring a well-defined and careful process of investigation and analysis that are controlled and managed by the researcher.

3.2.2 The meaning of design

According to Leedy (2013: 28) design is referred to "inter alia, as to intend for a specific purpose, plan or project". Different authors such as (Brynard & Hanekom 2016: 58, Cavana et al 2015: 107 & Coon 2014: 58) describe design as a conscious planned strategy to collect and arrange relevant data to provide an appropriate analysis of the issue in question and resolve problems. The principle of design is that different kinds of issues rationally demands different kinds of data gathering to ensure that data is relevant to the study. Moreover, design ensures that data gathered is valid, reliable and capable to provide findings that can be generalised to situations other than those of one's immediate organisations (Saunders & Tosey, 2013: 11). Cooper & Schindler (2013: 71) describe research design as the outline for accomplishing research objectives and answering research questions.

3.2.3 The purpose of the study (research design)

There are almost as many reasons to conduct research as there are researchers. However, the purpose of conducting the research can be organised into three depending on what the researcher is trying to address (Davies et al, 2014: 25). The research can be conducted to explore a new topic, describe an organisational phenomenon or explain why something occurs (Saunders & Tosey, 2013: 25). Yet, this dissertation endorsed a descriptive research study.

I. Descriptive research

A descriptive research is a method that provides a basic background of information or context, describes a process, mechanism, or relationship, and provides an accurate profile of a group (Cohen & Manion, 2012: 84). In the descriptive research, the researcher starts with a precise topic and gathers information to describe it accurately. The outcomes of a descriptive study are a detailed representation of the subject (Davies et al, 2014: 45). A descriptive study is undertaken to ensure adequate description of the features of variables or groups in the phenomenon of interest (Sekaran & Bougie, 2012: 200). Such studies provide additional information on the features of numerous variables or social groups/phenomena.

As the name implies, the essence of a descriptive study is a comprehensive discussion on the phenomenon in question. This enables a consolidated discussion on previous exploratory studies or sometimes both (Saunders et al., 2011). Descriptive studies build on the foundations laid by exploratory studies to provide elaborate discussions or arguments. Descriptive research is best suited for this study because it enables the researcher to present a situation in a detailed specific manner, organisational setting or relationship.

For example, the outcomes may represent the percentage of people who have a certain idea or engage in specific behaviours. The focal of descriptive study is on ‘how’ and ‘who’ questions (Brynard & Hanekom, 2016: 73). It aims to find out on how certain things happened and who was involved. The less concern of descriptive study is why something happens and exploring new issues (Leddy, 2013: 54). The researcher decided to use the descriptive design because the researcher aims to answer the questions of how can an organisation obtain operation effectiveness and who should be involved in the process. Thus, allowing the researcher to utilise most data gathering techniques such as field research, historical comparative research, and statistical analysis (Hinkelmann & Witschel, 2013: 45).

3.3 Research choice

According to Hinkelmann & Witschel (2013: 89) reseacrh choice are the techniques that can be used to conduct a research study. There are three diffent techniques of data collection that are mono-method, mixed- method and multiple method.

A mono-method can be referred to a study where by the researcher applies either the quantitative or qualitative method. It is the adoption of a data collection technique and a conforming data analysis procedure (Saunders & Tosey, 2013: 82). Data can be collected and analysed in a non-numerical (qualitative) or numerical (quantitative) form and be subjected to complex statistical analysis, to report the findings in numerical form (Saunders et al., 2015: 151). Mixed-method are the combination of quantitative and qualitative in a single research study. Multiple method is the combination of more than one quantitative or qualitative data collection technique (Saunders & Tosey, 2013: 56). This study adopted a mono-method of quantitative study because it is suitable for the evaluation of performance and the data obtained of the study is in numerical form and analysed using statistical analyses.

3.4. Quantitative method

Quantitative research involves describing phenomena through the collection of numerical data that are analysed by using mathematically based methods (Landeros, 2012: 26). According to Coon (2014: 78) this method aims to fragment and delimit phenomena into a measurable category that can be used to all of the subjects or similar situations. Cooper & Schindler (2016: 19) delineate quantitative research as the accurate sum of some behaviour, knowledge, opinion, or attitude. This method was applied to this research because quantitative research allows the researcher to measure things accurately, state the research problem in very specific and set terms. Moreover, quantitative research clearly and precisely specifies both the independent and dependent variable under a specific investigation. Therefore, enables to achieve high levels of reliability of gathering data due to controlled observations (Ahmed, 2013: 77).

3.5 Research philosophies

Research philosophy refers to a belief about a way in which data about a phenomenon must be gathered, analysed and utilised (Coon, 2014: 114). The different types of research philosophy

include positivism, realism, interpretivism and pragmatism. However, this dissertation discusses positivism as the application

i. **Positivism philosophy**

Positivism is a philosophy that is more focused on scientific methods to test theories. It is associated with several specific social theories (Williams, Money & Swartz 2015: 289). Well known for its linkage to the rational choice, structural-functional and exchange theory framework. This dissertation adopts a positivism philosophy because it is quantitative in nature, seek rigorous precise measures and test objectives by cautiously analysing numbers from measurements (Neuman 2016: 42).

Moreover, positivism is applied because the study engages empirical approach by gathering data from a large sample and use statistical analysis in order to provide a comprehensive explanation on the effective operation in the automotive manufacturing organisation through the implementation of TQM (Coon, 2014:93). This philosophy allows for generalisation, future predictions can be made and enables to study many people at the same, therefore saves time (Coon, 2014: 55).

3.6 Research strategy

Research strategy refers to techniques or procedures used by researchers to address research questions (Saunders et al., 2012). This includes Survey, experimental, case-study, action, ethnography, and archival research strategy.

A survey strategy is a referred to probably the most useful technique that offers an accurate data (Neuman 2016: 121). This is because this type of strategy enables the researcher to collect data from subjects that represents the population, present opinions of respondents hence giving a room for objectivity (Creswell, 2013: 12). Survey strategy is usually called correlation. This research study adopts a survey study because samples were stratified according to departments and respondents were selected randomly. According to Leedy (2013: 68) obtaining information from different people to resolve a research questions is very resourceful.

The author further states that this allows for different ideas or opinions as people holds different knowledge and experience. Moreover, involving different participants with different knowledge from different department will allow for accuracy and more detailed information.

Because the study won't only focus on management who delegate the tasks, but will also involve floor employees who does the actual work. This research study was selected because it enables the researcher to collect original data from describing a population too large to observe directly. Furthermore, survey strategy allows the respondents to reveal deep feelings to gain sympathy. In the survey ritual responses are common and the participants exchange information and correct the factual errors they aware of and people can evade questions and give flippant or noncommittal answers (Creswell, 2013: 55).

3.7 Research study location

The study location is the physical place where the study is to be conducted to obtain necessary information (Solis, 2011: 99). In this study, the location of the study is based at KwaZulu-Natal in a semi-urban area called Jacobs. The study would be conducted at the head office of Feltex automotive. This is because that is where the initial manufacturing of car components for the company takes place. In the opinion of Terre (2012: 25) quality can only be a success if managed in the initial stage. Moreover, due to financial constraints, for the researcher head office is the closest plant of Felted automotive.

3.8 Time horizon

According to Saunders et al. (2012: 56) time horizon refers to the time taken to collect data. Time horizon is divided into two that are longitudinal and cross sectional. This research study adopted a cross sectional time horizon. Cross sectional refers to the studies that are limited to a specific period. According to Saunders, Lewis & Thornhill (2012: 59) cross sectional are designed to obtain data on variables in various contexts but at the same time. Cross sectional studies are more suitable for studies that apply a case study and a survey research strategy (Babbie 2013: 120). Therefore, this research study applied a cross sectional study because the researcher has limited period, resources and adopts a survey research strategy.

3.9 Research approach

In this sections population, sampling process, sample and sample size are discussed.

3.9.1 Research population

Creswell (2013: 29) define population as the total units that the researcher is interested, which is the largest set from which the sample is drawn. Kothani (2012: 56) view population as a group of individuals that shares at least one characteristic from which data can be collected and analysed. In other terms, is any set of events or set of individuals whereby the sample is selected. The study is based at Feltex Automotive manufacturing company with some 150 employees. Therefore, the target population are the employees of Feltex automotive manufacturing company. The dissertation's participants of Feltex automotive will not be biased; both genders (male and female) will be involved, all ages and will also target every level of the employees of the organisation. Therefore, participants will be selected randomly.

3.10 Sample design

The major aim of sampling is to get a small unit representatives of the whole population and produce accurate generalisations about a larger group. Quantitative researchers tend to use a type of sampling based on theories of probability from mathematics called probability sampling Cooper & Schindler (2013: 85). There are two categories of sampling that are probability and non-probability sampling. This dissertation embraces a probability sampling.

3.10.1 Probability sampling

According to Terre (2012: 21) in probability sampling, the subject of the population has a definite chance of being selected but not necessarily equal of being included to the sample. The motivation of using probability sampling is that, the method generates a sample that is representative of the entire population. Random sampling does not mean that every random sample greatly represents the population. Instead it means that most of the random samples are close to the population most of the time and that one can calculate the probability of a sample being accurate (Solis, 2011: 110).

This research study applied a simple random sampling because it eliminates inherent bias by selecting the participants randomly. Moreover, according to Terre (2012: 53) random samples are often likely to produce a sample that truly represent the population when compared to non-random samples. In other words, it allows the researchers to formulate accurate assumptions from the sample to the population under investigation. Furthermore, simple random sampling

enables researchers to statistically calculate the relationship between the sample and the population that is the size of the sampling error.

3.10.2 Sample and sample size

Due to time constraints, energy, and economic resources, it is impossible to study the whole population. Instead a researcher only studies the sample- a smaller number of individuals or subjects from the population (Neuman 2016: 120). Collins English Dictionary (2013:100) refers sample to a subset of a population that has been chosen to participate in a study. The main aim of sampling is to generalise from a sample (a small group) to the entire population from which it is taken (a larger group). The below table is the work of Sekaran (2000, 294 that guides on how many samples for each population.

Table 3.2 Sample size for a given population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Source: **Sekaran, 2000**

Sample size refers to the total number of people that will participate in the study. According Feltex Automotive manufacturing organisation article by Steven (2015, 15) the company has some 150 employees. Sekaran (2000: 294) on table 3.2 above it is shown that for 150 populations, a study must have 108 participants. In simple random sampling, every element in the population has an equal chance of being selected as a subject in the study. For instance, in a dissertation designed to survey 108 employees in an organisation comprising a total of 150 employees, the probability of being selected as a sample could be given as (Wilson, 2010: 102):

$$P(inclusion) = \frac{sample\ size}{total\ population} = 0.72$$

Therefore, the probability of being selected as a sample in the dissertation could be given as 0.72, meaning that one subject is drawn from a group of seven elements in the population. Given this scenario, the level of bias in simple random sampling is very low and offers high level reliability while making generalisations in relation to the total population of the study (Bryman & Bell, 2011; Sekaran, 2003).

Another alternative for simple random sampling would be to firstly, selected by copying all the names of the population from the company registrar and paste into an excel spreadsheet to generate random numbers between zero to one. Secondly, the researcher sorts the column with the list of names by the random numbers in the spreadsheet and applied RAND () function in the column of the spreadsheet. At last, this practice enabled to rearrange the list in the random order from the lowest to the highest random number to select the sample of the study that is 108 participants.

3.11 Methods of data collection

Data collection is referred to a method used to collect information. The primary and secondary data are the only two ways of collecting information (Biljon, 2014: 18).

3.11.1 Primary data collection

According to Cooper & Schindler (2013: 56) primary data is information that is gathered directly, mostly using ground work and viewed as the critical information not easy to acquire compared to secondary information.

The primary data are collected purely for a specific study. The questions that are asked when collecting primary information are tailored to elicit the data that will help the researcher in their study (Creswell, 2013: 52). The information when using primary data can be gathered using

surveys, questionnaires, interviews, and direct observations. The gathering of data in primary can be conducted by running experiments or record direct observations about a test subject.

For this dissertation, primary data will be collected using questionnaires. The importance for this is to weigh the different views of subject from Feltex automotive manufacturing organisation. The major concern of the researcher is to ensure that the results of the dissertation are accurate and applicable (Cavana et al., 2013: 33).

3.11.2 Secondary data collection

Secondary data is information collected by others for purposes, which can be different from those of the researcher. It involves published and unpublished documents that are related to the research and it is of highly importance as it comprises the logical framework of the research (Cooper & Schindler, 2013: 55). Secondary data tends to be available and inexpensive to obtain. Moreover, administrative data tends to have large samples because the data collection is comprehensive and routine. What's more, administrative data (and many types of secondary data) are collected over long period. This allows researchers to detect change over time (Creswell, 2013: 70).

The major advantage of using secondary data is that, it helps the researcher formulate and understand better the research problem, broadening at the same time the base for scientific conclusion to be drawn (Cooper & Schindler, 2013: 66). Yet, it should be taken under consideration that other researchers, organisation, or government departments conduct studies with different objectives and purposes (Leedy, 2013: 44). Therefore, it might not be suitable for the research on hand or to be conducted. For secondary information collection, this research utilised textbooks, academic articles and journals related to the implementation of TQM. Furthermore, different online resources were used to obtain information for the literature review (Cooper & Schindler, 2013: 83).

3.12 Research instruments

As the research study employ a quantitative study, a research instrument can be collected in numerical through questionnaires, experiments, or quasi-experiments. Therefore, this study applies questionnaires to collect relevant data. This research instrument was selected because it is more accurate, ensures anonymity which pursuit participants to respond honestly thereby providing valid research information. Moreover, it is relatively time- and cost-effective (Gerbing, 2014: 85).

3.12.1 Research instrument (Questionnaires)

A questionnaire is a set of written questions that the participants are to respond to provide data that are relevant to the study (Coon, 2014:86). The information obtained from the respondents is used to analyse and conclude on the research topic. According to Gima (2014: 33) questionnaires are mostly used method to diagnose the function of organisations. The purpose of using questionnaires is that views of participants can be obtained in a structured manner. This allows for accuracy and reduced errors in data analysis (Davis, 2015: 18). When formulating questionnaires, it is important to always keep in mind the aim of the research and the research questions (Baldwin, 2012: 25).

This research takes a form of structured questionnaires. The purpose of questionnaires is to draw out information from the participants that can be useful for analysis in a structured manner. In this case, the researcher is interested in determining the influenced caused by TQM in an automotive manufacturing organisation. Therefore, using questionnaires gives the researcher more flexibility and more relevant information to the topic because respondents are only filling the questionnaires and has no face to face discussion as some participants are shy and are fearful.

In this dissertation, structured questions are used to simplify statistic process. Structured questions oblige respondents to choose from a list of alternatives (Beaumont, 2015: 25). The advantages of using structured questions are that, they are cost effective and use reasonable time. Which means respondents can complete it in time that is convenient for them (Black, 2016: 58). It therefore simplifies the collection of relatively more information on a condensed basis. Furthermore, most respondents are familiar with questionnaires and all are confronted with exactly the same questionnaire items (Leedy, 2013: 58). In addition, questionnaire information can be processed relatively easy as it elicits relatively uniform responses. Computer processing is therefore simplified (Cooper & Schindler, 2013: 55).

Questionnaires can also ensure anonymity and thus respondents are more inclined to be honest, which usually assists in obtaining more accurate and valid research information (Cooper & Schindler, 2013: 25). The chances of the researcher creating biasness are also lessened because of the impersonal nature of questionnaires. Answers obtained in this manner are easily quantified, which make statistical analysis by means of computer possible (Biljon, 2014: 75).

It is also more probable that respondents will be willing to complete this type of questionnaire rather than open questions, owing to the time and mental exhaustion of the latter. In the view of Saunders, Lewis & Thornhill (2012: 100) computer processing of the information obtained also occurs more quickly and accurately. The potential disadvantages of a questionnaire with structured questions are the restrictions placed on a respondent. He or she does not have the freedom to move outside the boundaries set by the choices (Coon, 2014: 52).

3.12.2 Questionnaire design

According to Cavana et al (2013:227) when designing questionnaires, the focus should be on the following three factors: (1) the way the questions are worded; (2) planning the questionnaire in such a way to enable the variables to be categorised, scaled and coded after receipt of the responses; and (3) the general layout and appearance of the questionnaire. Questionnaire design must be developed in a manner that directly supports the research problem. As no specific questionnaire exist for the investigation, a questionnaire had to be compiled that could be used for the study (Sheu, 2012: 13). Once the research questions conform to the empirical criterion, it becomes clear what data are needed in a survey. Thus, a starting point for the questionnaire is the research question (Choong, 2015: 50). It gives a list of the variables which will need to be measured in a questionnaire, and any other information required. The data collection questions for each variable will then represent the operational definition of that variable (Crosby, 2011: 12)

The questions included in the questionnaires must be relevant to the objectives of the study as this should answer the research questions (Cavana et al, 2013: 210). The research questionnaires consist of two sections, section A contains biographical questions (Questions asked in this section include participant's qualification, gender and position held). Section B are the TQM related questions (appreciate the concept of TQM, evaluate the level of TQM implementation in an automotive manufacturing organisation, evaluate the application and understanding of TQM factors such as team work, leadership and management, customers focus etc. Questionnaires will be distributed to stratified participants during lunch time to answer the questions on their own time and be collected the following to allow enough time to put in enough thought. The questionnaires are collected the following day because it is estimated to take 45 minutes to answer and participants only have 30 minutes for lunch.

3.12.3 Piloting the questionnaires

Even when questionnaires are formed accurately to collect data, most often there is always a possibility of some mistakes, an ambiguous question that some people cannot answer (Coon, 2014:111). To ensure that there are no mistakes, it is suggested to pilot the questionnaires before distributing to the respondents (Babbie 2013: 100). The purpose of pilot testing is to apply a cognitive interviewing whereby the research examines how the participants respond to questions. This technique involves gathering respondent's comments about questionnaires itself for the researcher to diagnose the questions that communicate effectively and collect information sought (Kothani, 2012: 20).

This information is used to refine the questionnaires. Before piloting the questionnaires, it was sent to the researcher's supervisor and school academic leaders for evaluation. Recommendations were made for improvement to ensure relevance, objectivity, and effectiveness (Coon, 2014: 80). As a pre-test measure the questionnaires were submitted to the ethical clearance committee offices of the University of KwaZulu-Natal to determine whether the questionnaires will be able to collect the data requires to answer the research questions. The outcomes of the pilot study were analysed and amended as required before distributed to the main subject of the study (Neuman 2016: 125).

3.13 Data analysis

3.13.1 Statistical analysis

Data analysis is a method used to analyse data obtained. This dissertation embarks a quantitative study therefore apply a statistical analysis. Statistical analysis is referred to a certain useful technique of mathematics that is not only studied theoretically but also used to organise, analyse and summarise data (Babbie 2013: 63). According to Leedy (2013: 48) statistical method and analyses are mostly used to communicate findings of the research, support hypotheses and give credibility to research methodology and conclusions.

The researcher concluded this method as suitable for this study because it allows the researcher to statistical gather information anonymously. Therefore, eliminate reluctance of individuals to volunteer information (Creswell, 2013: 36). Moreover, statistical analysis enables the researcher to access information that is inaccessible. Because statistical methods are

standardised this makes them easy to replicate and guarantees consistent quality over time (Brynard & Hanekom 2016: 81).

This method gives a room of hard data on performance and throughput; formulate an excellent benchmark by which to measure efficiency and productivity. In addition, statistical analysis enables to identify strengths and weaknesses of several strategies, programs, policies, or products across multiple demographics which make it an indispensable tool for decision makers (Cooper & Schindler, 2013: 60). To analyse data and put it into meaningful way, Statistical Package for the Social Science (SPSS) was used.

3.13.2 Descriptive statistics

As the name implies, descriptive statistical analysis is a statistical technique employed to summarise or describe numerical data (Wilson, 2013: 213). Descriptive statistical tools are useful when it comes to analysing categorical or demographic data using frequency distribution tables to display the number of occurrences and percentages of different categories of data in a study (Sekaran & Bougie, 2012: 105). Data presented in Tables can also be pictorially displayed with the aid of pie charts, bar charts or graphs and histograms for clarity. The purpose of starting data analysis with descriptive statistics is to give the reader an overview of the data collected before detailed analysis is presented (Wilson, 2010). This suggests why most students begin the data analysis chapter of their projects, dissertations, or theses with descriptive statistics (Wilson, 2013: 252).

3.13.3 SPSS

SPSS can be referred to the most popular statistical packages that can perform highly complex data manipulation and analysis with simple instructions. This instrument of analysis was chosen for this dissertation because is capable of handling large amounts of data and can perform all the analyses covered in the text and much more. This dissertation applied a quantitative study and analyses data using statistical analysis therefore, aim to analyse data findings' using tables and graphs and the better way to achieve that is by applying SPSS. SPSS will be the best method for this study because it has the capabilities of managing data effectively, provides range of options such screening information for further analysis and provides better communication by using syntax (Creswell, 2013: 70).

3.13.4 Ethical requirements

The researcher followed the University of KwaZulu-Natal's ethical guidelines to ensure the authenticity and credibility of this dissertation. The University's Ethical Clearance Application Form was completed and a copy of the research instrument and Gate Keeper's letters from the participating organisation were attached. The Humanities and Social Science Research Committee of the University of KwaZulu-Natal issued a letter of approval dated before the data was collected. The researcher conducted the field survey from the end of September 2016 to the end of November 2016. The researcher considered all stakeholders' rights in research by complying with all ethical requirements applicable to each stakeholder as firstly, permission was officially sought from the participating organisations as evident in the Gate Keeper's letters and secondly, the anonymity of the participating organisations was guaranteed while misuse of data collected from the organisations was avoided.

3.14 Reliability

Carmines and Zellers (2014: 152) in Wilson (2010: 53) referred to reliability as the extent to which a measuring instrument produces a stable and consistent result. It is the ability of a measurement to produce the same result under the same conditions repeatedly (McBurney & White, 2016: 129). In short, reliability should do with the consistency, stability and dependability of measuring instrument adopted for the study. The internal consistency of the instrument utilised in this study was assessed using Cronbach's alpha coefficient. This is a statistical tool to test the level of consistency of a data set (Pallant, 2011: 110 & Matker, 2012: 152).

Cronbach's alpha is a measurement of reliability coefficient on the extent to which items in an instrument are positively correlated (Sekaran & Bougie, 2013: 324). This has to do with the consistency, stability and dependability of the measuring instrument utilised in this study. The closer the Cronbach's alpha coefficient is to 1, the higher the internal consistency of the research instrument (Matker, 2012:121). A coefficient alpha ranging from 0.7 and above is considered acceptable (George & Mallery, 2013; Pallant, 2011). This enables the researcher to determine the reliability, consistency and stability of the construct/instrument incorporated in

the developed model for proper analysis. The validity of the research instruments used in this study is presented below.

3.15 Validity

Validity can be referred to a situation whereby checking and confirming that the data collected corresponds to what is being studied (Mark, 2015:18). According to Smith (2013:131) a valid study is the one that have data that is appropriately collected and interpreted. Validity is the extent to which a measuring instrument assesses what it was designed to assess. Validity encompasses the relationship between a construct and its indicators (Wilson, 2013: 119). This study took cognisance of two types of internal validity; content and construct validity. Content validity was achieved by evaluating the face validity of the instrument through expert opinions and the academic knowledge of professionals in the field of study. Supervisors' opinions were also sought before the administration of the instrument.

CHAPTER 4
DATA FINDINGS AND INTERPRETATION OF RESULT

4.1 Introduction

This chapter presents the data findings collected from the field and discusses the results obtained. To analyse data, statistical software packages were applied, namely, IBM SPSS (Statistical Package for the Social Sciences) version 24 and IBM SPSS Amos. The purpose of using IBM SPSS was to conduct preliminary data screening to institute the accuracy of data entry, missing data, outliers, and normality. SPSS was useful in analysing the descriptive statistics and inferential statistics. Demographic data collected for this dissertation were analysed using descriptive statistics via IBM SPSS statistics. Moreover, inferential statistics namely, the correlation and multiple regressions were also applied.

4.2 The rate of response

In line with the guidelines for Sekaran (2000: 294) for a minimum sample size on the population of 150 is 108 respondents. The dissertation distributed 108 questionnaires to the respondents and all questionnaires were returned and fully completed. This represents a 100% response rate. This chapter covers section A, the demographic details and the first objective of the dissertation that is to provide the understanding of the concept on TQM. Section B, examine the relationships among the principles of TQM and establish TQM principles that influence the outcomes automotive manufacturing organisations. Section C, assess the outcomes of TQM implementation.

4.3 Reliability of the instrument

This dissertation evaluates the reliability of the measuring instrument by applying the Cronbach's alpha coefficient via IBM SPSS version 24. Cronbach's alpha is referred to a reliability coefficient that measures the extent to which the items in a set are positively correlated (Sekaran & Bougie, 2012 324). In the same manner with the rule of thumb for internal consistency of items in the scale, the coefficient of alpha .7, .8 .9 and above are said to be acceptable, good, and excellent (George & Mallery, 2013).

Table 4.1 Reliability of measuring instrument employed in the dissertation.

Reliability statistics		
Construct	**Cronbach's alpha**	**Items**
TQM Concept	.841	20
Management commitment and leadership	.853	5
Customer Focus	.890	5
Total Involvement	.835	5
Continuous improvement	.818	4
Cultural change	.838	8
Education and Training	.862	4
Team work	.821	6
Influence of TQM on the outcomes	.799	6

Source: **Author's work, 2016**

The alpha coefficient presented in the table 4.1 above, ranges from .799 to .890. referring from the rule of thumb, the internal consistency of the measuring instrument was high ranged from acceptable to good.

4.4 Analysis of demographic data

The questionnaires used in this dissertation were designed to produce different categories of demographic data from the respondents that are gender, positions, education background and department. The demographic data are interpreted as follows:

4.4.1 gender

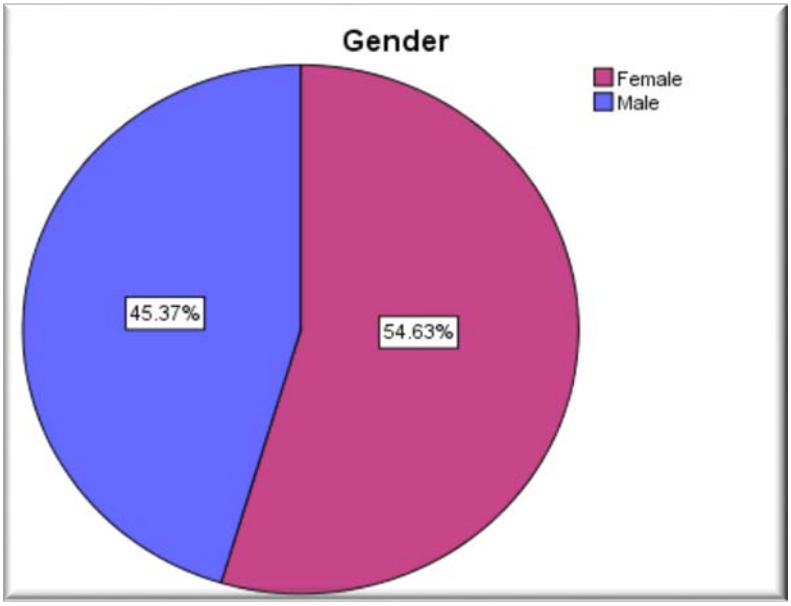
Table 4.2 The frequency distributions based on gender are illustrated below.

Gender					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Female	59	54.6	54.6	54.6
	Male	49	45.4	45.4	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

This table indicates that most of the respondents were female (59), while male was (49) out of a sample of 108 respondents that participated in the dissertation. To clarify, the percentage distribution of respondents based on gender are presented in figure 4.1 below:

Figure 4.1 Pie chart distribution of respondents by gender



Source: **Author's work, 2016**

Figure 4.1 illustrates the percentage distribution of respondents by gender. This pie chart presents that 54.63% of the respondents were females and 45.37% of the respondents were males. Therefore, most of the respondents that participated in this dissertation were female. With this, it can be concluded that females were more easily accessible to the researcher.

4.4.2 Position of respondents

Table 4.3 Frequency distribution by position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Top Management	17	15.7	15.7	15.7
	Middle Management	25	23.1	23.1	38.9
	Operational Employee	66	61.1	61.1	100.0
	Total	108	100.0	100.0	

Source: **Authors work, 2016**

Table 4.3 shows that 17 (15.7%) of the respondents were in top management, 25 (23.1%) were in middle management and most of the respondents of 66 (61.3%) were the operational employees. These findings indicate that the respondents were more based on the operational level, followed by middle level than top management level. Avery (2013: 12) emphasises that data collected from operational level are more appropriate than the one obtained from the middle and top management. The author further states that operational employees are the pillar of the organisation because they convert raw materials with the production process to make products that customers need.

For this author, middle and top management are in the organisation to delegate however operational employees does the actual work. To obtain proper data this research focused on all levels of the organisations. This was done to ensure that there is no bias in the responses obtained. Also, to gain different views from different levels on the effective performance through TQM implementation in an automotive manufacturing organisation.

4.4.3 Educational qualifications

Table 4.4 Frequency by educational qualification background of the respondents

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Grade 10-12	61	56.5	56.5	56.5
	Grade 12-3 years Diploma	38	35.2	35.2	91.7
	Degree+	9	8.3	8.3	100.0
	Total	**108**	**100.0**	**100.0**	

Source: **Author's work, 2016**

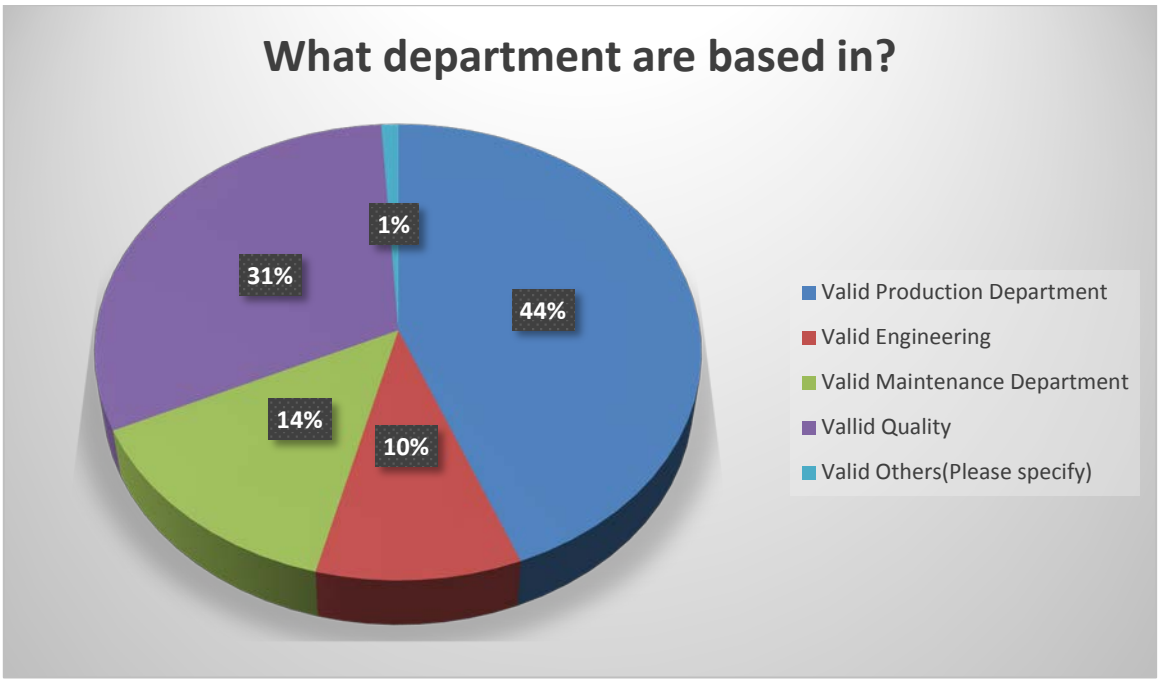
Table 4.4 reveals the educational background of the respondents. 61 (56.5%) were qualified for grade 10 to grade 12. 38 (35.2%) were secondary education from grade 12 to three years' diploma. 9 (8.3%) were the most educated holding degrees and above. These findings indicate that the company is not doing well when it comes to employing skilled labourers. Because there are many illiteracies than literal employees. This means that if care is not taken there could be problems of documentation and communication within and outside the organisation. Going back to the literature of the study Bowen & Lawler (2015: 85) state that training and education

assist in preparing the workforce towards managing the TQM philosophy in the process of production.

Walton (2013: 152), related that quality is one of the important and complex components of a business strategy and an element of production or services that keep customers satisfied. Moreover, the author mentioned that to implement TQM successful requires an understand of the concept of TQM. These findings show that most of the company employees obtained a low level of education which might be concluded that the understanding of TQM is very limited within the organisation. Thereby, education and training could be emphasised to encourage continuous improvement of the car components produced by the company.

4.3.4 Respondents by departments

Figure 4.2 Frequency distribution based on respondents by departments



Source: **Author's work, 2016**

Figure 4.2 shows the department that respondents were based in. Figure 4.2 illustrate that most of the respondents 44% were from the production department, 31% of the respondents were from the quality assurance, but 14% of the respondents were from the maintenance department, 10% of the respondents were from the engineering department and 1% which is other was from the logistics department. Basically, this study involved all the departments of the company to evaluate the knowledge of TQM implementation and the outcomes obtained.

4.5 Analysis of the research questions

The research questions of the dissertation that were formulated by the researcher are analysed sequentially below. This is important because it enables the researcher to provide solutions to the research problem and in meeting the objectives of the dissertation.

4.5.1 Descriptive statistics

Table 4.5 Descriptive statistics

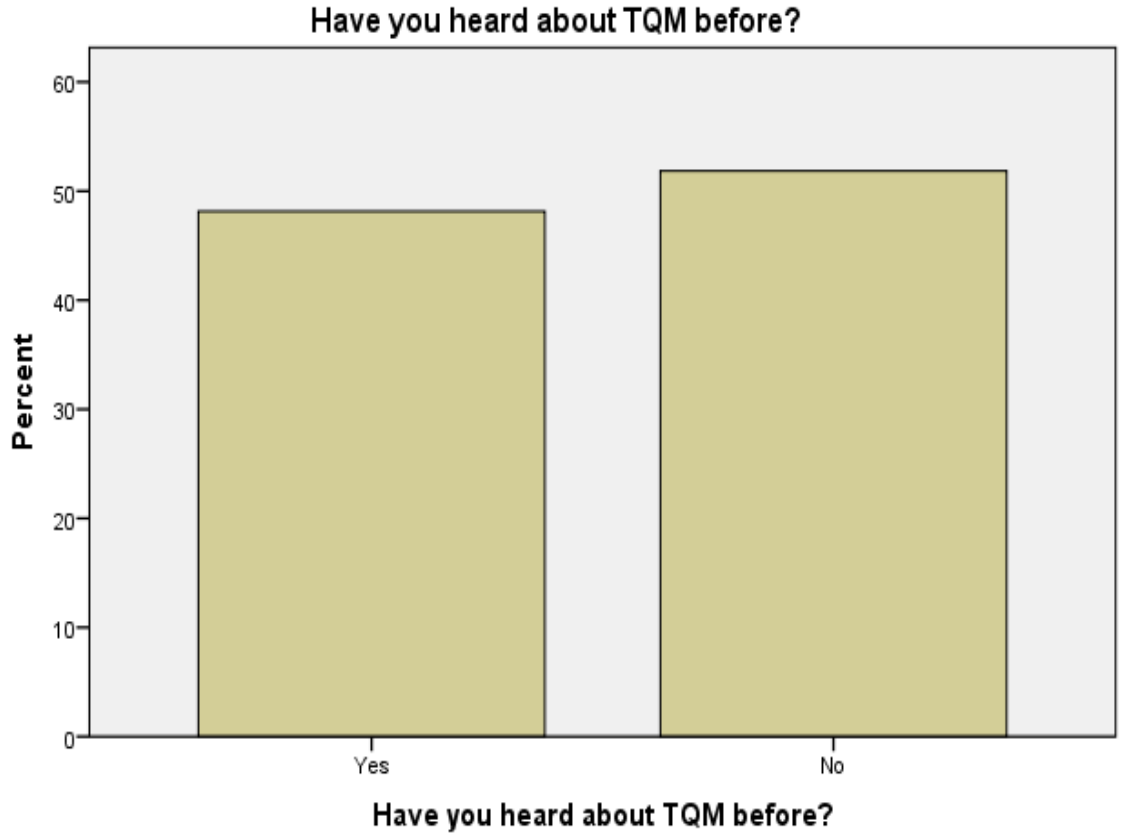
Descriptive Statistics									
		TQM1-3	TQM 4-6	TQM7-10	TQM11-13	TQM14-15	TQM16-17	TQM18-19	TQM20
N	Valid	108	108	108	108	108	108	108	108
	Missing	0	0	0	0	0	0	0	0
Mean		3.47	3.21	3.37	3.55	3.42	3.51	3.29	3.42
Median		3.00	3.00	3.50	3.50	3.00	4.00	3.00	3.00
Std. Deviation		.971	.843	.963	.869	.968	.912	.843	.996
Skewness		.048	.243	-.167	.073	.020	-.141	.078	-.170
Std. Error of Skewness		.233	.233	.233	.233	.233	.233	.233	.233
Kurtosis		-.955	-.526	-.813	-.661	-.967	-.426	-.643	-.395
Std. Error of Kurtosis		.461	.461	.461	.461	.461	.461	.461	.461
Minimum		2	2	1	2	2	1	2	1
Maximum		5	5	5	5	5	5	5	5

Source: **Author's work, 2016**

The first objective of the study was to provide an understanding of TQM in an automotive manufacturing organisation with TQM concepts from 1 to 20. To measure the outcomes from the questionnaire's respondents, a descriptive statistic was applied. The purpose of this question was to evaluate if the respondents understood TQM. On the variable of TQM, we had information from 108 respondents with 20 questions under TQM concept as illustrated in table 4.5 above, no missing questionnaire. The mean ranges from 3.21 to 3.55 which shows a variance of 0.34. according to Terziovski (2000: 289) a mean that is close to zero is good and present a close relationship or knowledge between variables. Furthermore, the standard deviation ranges from .843 to .996 with a variance of 0.1. The results are somehow in agreement with the theory reported by (Terziovski, 2000: 289). Therefore, the information provided is statistical efficiency and illustrate that the respondents had almost close understanding of TQM. In that say, it means the author would easily identify on which part of

TQM is the company still lacking in. The data on the awareness of TQM is also illustrated below:

Figure 4.3 Respondents who heard about TQM.



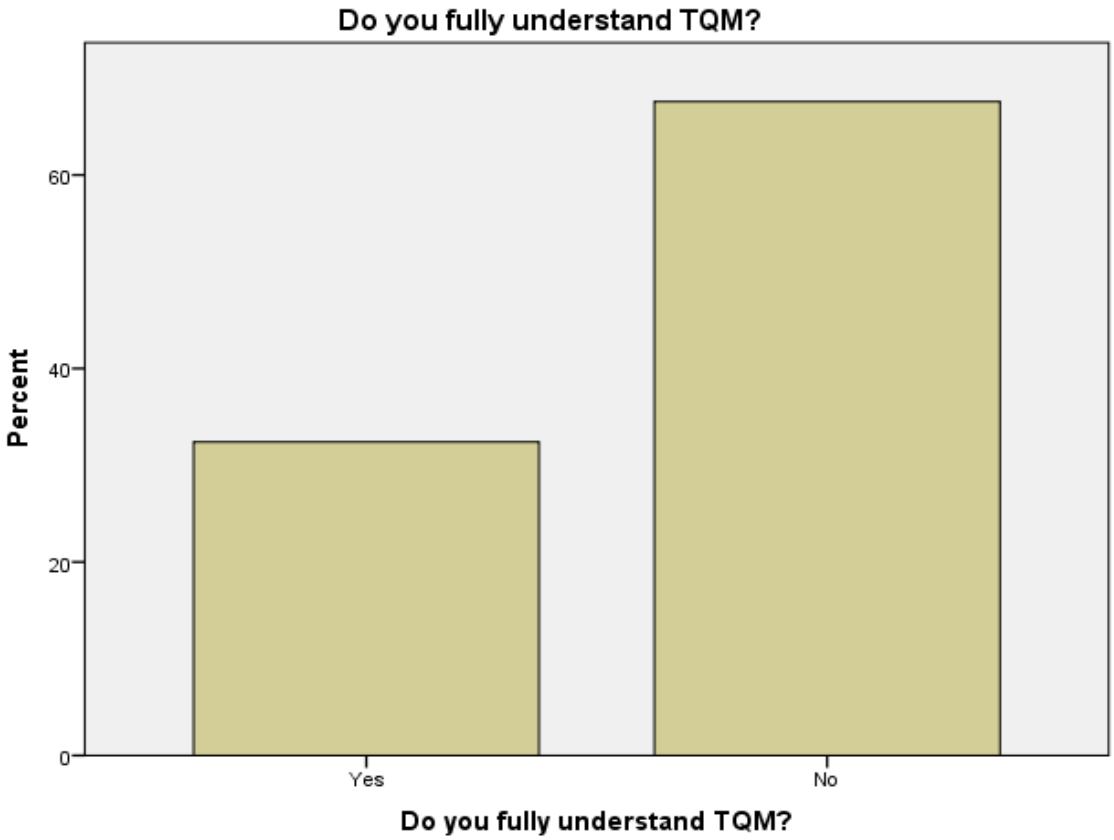
Source: **Author's work, 2016**

Figure 4.3 shows the percentage of respondents who have heard about TQM before. 56 (59.1%) of the respondents never heard about the concept of TQM. Only 52 (48.1%) of the respondents have heard about TQM. According to the data findings more than half of the company had limited information about TQM implementation. This can affect the success of TQM implementation and application. The graph above shows the results of the respondents who heard and had never heard about TQM. The below illustrates the percentage of respondents that understand TQM.

Figure 4.4 below, illustrates that out of the 52 (48.1%) of respondents who said they heard about TQM before check figure 4.3, only 35 (32.4%) who fully understand TQM. This means that most of the respondents 73 (67%) don't fully understand the concept of TQM and the process of TQM implementation. In summary, the understanding of TQM concept and TQM

implementation is that many of the respondents heard about TQM but do not know the full meaning of TQM, how it works and how it can be implemented.

Figure 4.4 Respondents on the understanding of TQM



Source: **Author's work, 2016**

Success in total quality management cannot be obtained unless theory is understood. According to Deming (2011: 51) knowledge is useless without theory because experience does not build a theory. Experience only give description on how things must be done but cannot be validated or tested and alone is no help for the organisation (Holloway, 2014: 23). This means that, Feltex automotive should take into consideration to educate and train its employee about implementing a successful TQM program. This would benefit the company in customer satisfaction, employee satisfaction and operation effectiveness.

TQM is a management philosophy and practices that ensure effective and efficient use resources. Table 4.6 below covered the frequency of understanding on the TQM concept or definition refer to questionnaires in statement 1B (1-14).

Table 4.6 TQM concept

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	19	17.6	17.6	17.6
	Neutral	37	34.3	34.3	51.9
	Agree	34	31.5	31.5	83.3
	Strongly agree	18	16.7	16.7	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.6 illustrate the responses from the participant's view on the TQM concept in the automotive manufacturing organisation. 19 (17.6%) of the respondents disagree with the statement of TQM, 37 (34.3%) of the respondents were neutral, either disagree nor agree about the statement of TQM, this group of respondents are unsure whether they understand TQM or don't understand TQM. 34 (31.5%) of the respondents agreed with the statement and 18 (16.7) respondents strongly agree with the statement of TQM. Table 4.6 shows that more than half of the company (disagreed and neutral) does not fully understand TQM. With that it can be said that TQM will be hard to implement nor be a success within the organisation.

Table 4.6 TQM implementation outcomes, see questionnaires statement 1B (15-20). The statement from 15 to 20 elaborate on the achievements of TQM implementation. These statements looked at cost savings, quality improvement, customer satisfaction etc.

Table 4.7 TQM concept continuation

TQM emphasis continuous improvement in an organisation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	2.8	2.8	2.8
	Disagree	15	13.9	13.9	16.7
	Neutral	40	37.0	37.0	53.7
	Agree	34	31.5	31.5	85.2
	Strongly agree	16	14.8	14.8	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.7 shows respondent's view on the statement 1B (15-20) of TQM implementation. 3 (2.8%) of the respondents strongly disagree that TQM implementation encourages continuous

improvement, reduce cost, and improve quality in an organisation. 15 (13.9%) of the respondents disagreed that TQM emphasises continuous improvement. 40 (37%) of the respondents are neutral or neither agree or disagree on TQM having an impact on the continuous improvement of the organisation. 34 (31.5%) of the respondents agreed that TQM implementation improved the organisation and 16 (14.8%) of the respondents strongly agreed that TQM has a powerful impact on the continuous improvement of the organisation.

In summary table 4.7, shows that more than half of the respondent's (58%) are against the statement that TQM emphasises continuous improvement in an organisation. This can be concluded that the organisation does not understand or take TQM seriously. For TQM to be successful implemented, certain principles need to be taken into consideration. The establishment of principles that influence the outcomes of TQM implementation are covered below. Firstly, a coefficient that shows the relationship between variables are explained.

Section B: TQM principles

4.6 What is the relationship among TQM principles?

This dissertation used correlation to explain the relationship among variables - the TQM principles. Correlation coefficient can range between -1 and +1. The correlation with -1 represents a perfect negative correlation which means if one variable increases the other variable decreases. On the other hand, correlation with +1 represents a positive correlation which means if one variable increases the other variable also increases. Conversely, a value of 0.00 represent a lack of correlation. The below illustrate the correlation between TQM principles.

Table 4.8 Correlation between variables

Principles		1	2	3	4	5	6
1	Mgt. Leadership	-					
2	Employee Involvement	.690**	-			.	
3	Customer Focus	.405**	.461**	-	.		
4	Continuous Improvement	.432**	.354**	.620**	-		

5	Education and Training	.473**	.379**	.458**	.656**	-	
6	Cultural Change	.516**	.442**	.494**	.564**	.610**	-
7	Team work	.546**	.484**	.548**	.600**	.570**	.671**

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

Source: Author's work, 2016

Table 4.8 is based on correlation between variables. The highest correlation is between team work and cultural change (r = .671). This was expected because culture change provides directions in the organisations on how to plan, organise and implement the organisational strategies. It further draws up on the organisation strategic position as it dictates the daily activities (Godfrey et al. 2013: 97). The second highest correlation is between education, training and continuous improvement (r = .656). This supports the fact that continuous improvement is obtained through education and training.

An organisation cannot excel when still using the same old methods. But, training and education of employees is required to form new strategies that can move the organisation forward which in turn relate to customer focus (r =.461). The correlation coefficients or teamwork, continuous improvement, and customer focus levels (r =.671, .656 and .461, respectively) are all significant at $p < 0.01$. This implies that there is a significant, strong, and positive relationship between TQM principles. To analyse the variability of the variables, an analysis of variance is used.

Table 4.9 Analysis of variance

ANOVA						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	684.966	1	684.966	76.211	0.3
	Residual	952.701	106	8.988		
	Total	1637.667	107			
a. Dependent Variable: Outcomes						
b. Predictors: (Constant), Teamwork						

Source: **Author's work, 2016**

The table 4.9 above shows the analysis of variance between independent and dependent variable. If the Sig is less than or equal to 0.5, that means there is significant difference somewhere among the mean scores on the dependent variables. This dissertation on the

ANOVA had a sig of 0.3 which is less than 0.5. This implies that there is a sig difference among the variables. The below interpreted the result obtained from the fieldwork on the relationship among TQM principles. The results of each principle of TQM are analysed below sequentially as in the questionnaires.

Table 4.10 below construct the six questions from Appendix A that were in F1 under management commitment and leadership. The results are presented below:

Table 4.10 Top management commitment and leadership

F1- Top management ensures that every employee knows the company mission and objectives of the business.					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Not important at all	4	3.7	3.7	3.7
	Not important	17	15.7	15.7	19.4
	Neutral	34	31.5	31.5	50.9
	Important	41	38.0	38.0	88.9
	Very Important	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

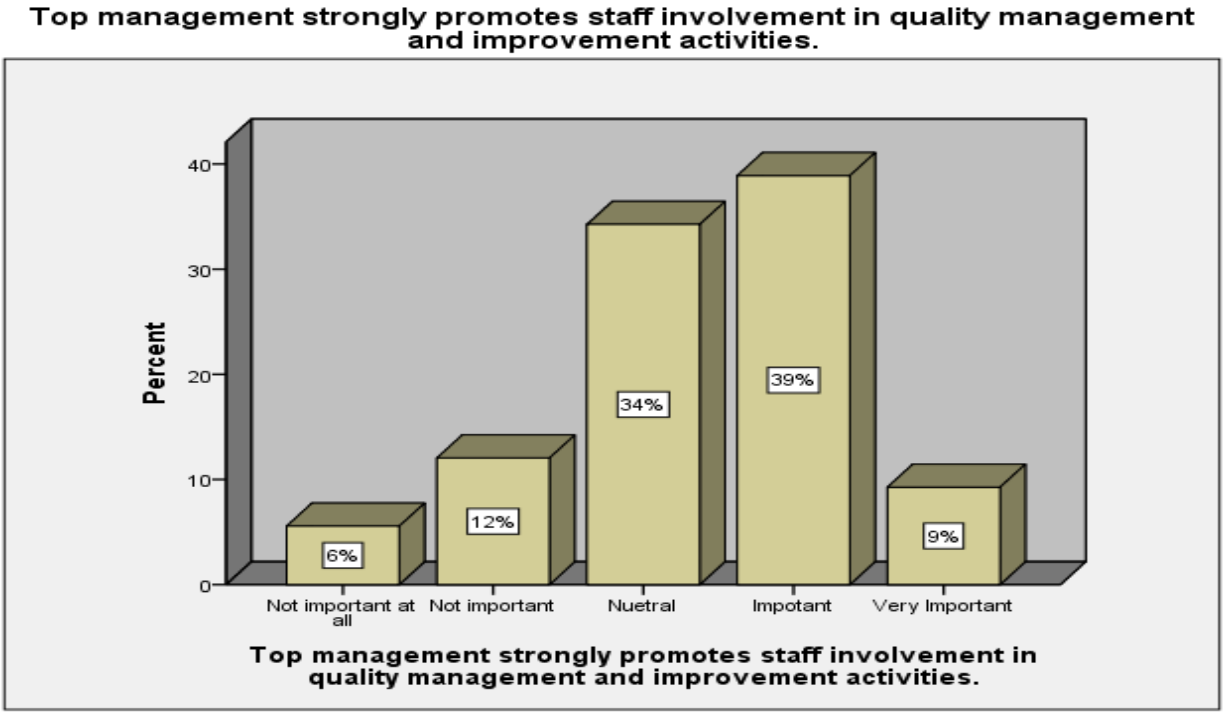
Source: **Author's work, 2016**

Table 4.10 indicates the importance of a leadership and top management commitment in an organisation. 4 (3.7%) of the respondent's view leadership and top management commitment as not important at all in an organisation. 17 (15.7%) of the respondents portrayed that organisation can survive without top management and leadership in place. But 34 (31.5%) of the respondents neither agreed nor disagree about the importance of leadership and top management commitment. 41 (38%) of the respondent's view leadership and top management as an important factor of the organisation.

Also, 12 (11.1%) view leadership and top management as the pillar of the organisational success. In chapter two of this dissertation, it was noted that the degree of commitment and support that a management takes are critical to the success of the TQM implementation. Furthermore, quality depends on a vision of excellence and that vision becomes a reality through excellent and compelling leadership. Therefore, it can be concluded that Feltex automotive need to ensure that it emphasis the role played by the management and improve the managerial commitment and leadership to ensure a proper implementation of TQM. Yet, from

the data collected the results of top management and leadership are not satisfactory, only (49.1%) of the respondent's view management commitment and leadership as a requirement for the organisation.

Figure 4.5 Involvement of employees in quality decisions.



Source: **Author's work, 2016**

Table 4.11 Top management strongly promotes staff involvement in quality management and improvement activities.

F1- Statement 2					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly disagree	6	5.6	5.6	5.6
	Disagree	13	12.0	12.0	17.6
	Neutral	37	34.3	34.3	51.9
	Agree	42	38.9	38.9	90.7
	Strongly agree	10	9.3	9.3	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.11 illustrated in figure 4.5 show the respondents' view on the promotion of staff involvement in quality management and improvement activities. 6 (5.6%) strongly disagree in the assertion that there were involved in any staff promotion activities and quality management

decisions. 13 (12%) of the respondents disagreed that there were any activities that involved employees to be promoted. 37 (34.2%) of the respondents neither agreed nor disagreed, they are unsure of the statement. However, 42 (38.9%) agreed that top management strongly promote staff involvement. Also, 10 (9.3%) of the respondents strongly agreed that top management strongly promotes staff involvement in quality management and improvement activities. Even though, the company is not doing well in promoting the staff, but if it becomes fully committed it can achieve a lot as 48.2% of the respondents agreed that they are involved in quality management and improvement activities.

Table 4.12 Communication between management and employees

F1- Statement constructed from 3 to 5.					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Not important at all	7	6.5	6.5	6.5
	Not important	19	17.6	17.6	24.1
	Neutral	42	38.9	38.9	63.0
	Important	29	26.9	26.9	89.8
	Very Important	11	10.2	10.2	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.12 shows the importance of the communication flow between employees and top management. These findings illustrate that 7 (6.5%) of the respondent's view communication between employees and top management as not important at all. 19 (17.6%) of the respondents sees communication as not important. On the other hand, 42 (38.9%) of the respondents are neutral about communication being important between employees and top management. But 29 (26.9%) of the respondents sees the need for communication between management and the employees. Also 11 (10.2%) view communication as manner to operate business, these respondents view communication as very important aspect of the organisation, the findings show that there is a lack of communication between the employees and management.

Table 4.13 Employee involvement in the TQM implementation.

F2- Statement 1, Employees involvement in quality decisions					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly disagree	3	2.8	2.8	2.8
	Disagree	22	20.4	20.4	23.1
	Neutral	44	40.7	40.7	63.9
	Agree	35	32.4	32.4	96.3
	Strongly agree	4	3.7	3.7	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.13 shows respondents view of their involvement in quality decisions. 3 (2.8%) strongly disagree that there were involved in quality decisions. 22 (20.4%) also disagreed that they were involved in quality decisions. 44 (40.7%) also were neutral to the question. 35 (32%) Agreed that they were involved in quality decisions. 4 (3.7%) strongly agreed to the assertion that they were involved in quality decisions. This shows that close to half of the staff are not involved in quality decisions process, such instances make it difficult to own the decisions and work with them. This can also affect the implementation phase of TQM.

Table 4.14 Employees are given tools they need to do the job effectively.

F2- Statement 2 to 4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	2.8	2.8	2.8
	Disagree	21	19.4	19.4	22.2
	Neutral	23	19.8	39.8	62.0
	Agree	55	52.4	32.4	94.4
	Strongly agree	6	5.6	5.6	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.14 shows the employees view on the tools offered to do jobs effectively. On the data collected, 3 (2.8%) strongly disagreed that they are given tools to do their jobs effectively. 21 (19.4%) disagree that they are given the tolls to do their jobs. 23 (19.8%) are neutral about the statement. 55 (52.4%) agreed that they are given tools to do their jobs effectively. 6 (5.6%) strongly agreed that they are given tools to do their jobs effectively. This table indicates that

majority of the respondents which is above 50% of the respondents agreed that there are offered tools to do their jobs effectively.

Customer satisfaction level are measured and monitored.

Table 4.15 Customer focus

F3- Statement 1					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly disagree	3	2.8	2.8	2.8
	Disagree	18	16.7	16.7	19.4
	Neutral	24	21.5	21.5	40.9
	Agree	51	48.0	48.0	98.9
	Strongly agree	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.15 shows that 63 (59.1%%) of the respondents were of the view that customer levels are measured and monitored. However, 24 (21.5%) of the respondents were neutral in the response and 21 (19.5%) disagreed that customer satisfaction level is measured and monitored. This indicates that the company is committed to customer satisfaction.

Table 4.16 Information on quality and customers are collected and analysed.

F3- Statement 2 to 4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.9	1.9	1.9
	Disagree	16	14.8	14.8	16.7
	Neutral	29	26.9	26.9	43.5
	Agree	37	34.3	34.3	77.8
	Strongly agree	24	22.2	22.2	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.16 shows that 18 (16.7%) of the respondents were against the statement that information on quality and customers are collected and analysed. 29 (26.9%) of the respondents were neutral. But, 61 (56.5%) of the respondents agreed that in the company the information

on quality and customers are collected and analysed. More than half of the respondents were of the view that information on quality and customers are collected and analysed. Therefore, it will be easy for the company to find errors on product before sent to the customers. Moreover, through analyses on information on quality and customers enables the company to close it gaps and improve products and customer services.

Table 4.17 Employee performance are measured and recognised.

F3-Statement 5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.9	1.9	1.9
	Disagree	21	19.4	19.4	21.3
	Neutral	37	34.3	34.3	55.6
	Agree	31	28.7	28.7	84.3
	Strongly agree	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.17 shows that 23 (21.3%) of the respondents disagreed that employee performance is measured and recognised. 37 (34.3%) of the respondents were neutral on their responds. However, 48 (44.4%) of the respondents were of the view that management has demonstrated commitment to the work of measuring and recognising the performance of the employees. According to measurement of employees helps ensure equitable treatment of employees because appraisals are based on results. Optimises operations in the organisation because goals and results are more closely aligned. Cultivates a change in perspective from activities to results. Table 4.17 indicates that management is not doing well in measuring the performance of the employees.

There is a quality improvement coordinating body (e.g. quality steering committee).

Table 4.18 Continuous improvement

F4-Statement 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	3.7	3.7	3.7
	Disagree	12	11.1	11.1	14.8
	Neutral	36	33.3	33.3	48.1
	Agree	38	35.2	35.2	83.3
	Strongly agree	18	16.7	16.7	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.18 shows that 16 (14.8%) of the respondents were against the view that there are quality coordination body. 36 (33.3%) of the respondents were neutral in their respondents. 56 (51.9%) of the respondents agreed with the statement that there is quality improvement coordinating body such as quality steering committee. This demonstrate that the company is committed to quality improvement.

Table 4.19 The importance of continuous improvement of all its products, services and processes.

F4-Statement 2 to 4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important at all	5	4.6	4.6	4.6
	Not important	12	11.1	11.1	15.7
	Neutral	32	29.6	29.6	45.4
	Important	33	30.6	30.6	75.9
	Very Important	26	24.1	24.1	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.19 illustrates that 17 (15.7%) of the respondents didn't view continuous improvement of products as important. 32 (29.6%) of the respondents were neutral. But 59 (54.7%) of the respondents agreed that it is important to always practice continuous improvement in every product, services, and processes of the organisation. These finding show that continuous improvement is viewed as important in the organisation.

Top management always updates their knowledge.

Table 4.20 Education and training

F5-Statement 1					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Not important at all	6	5.6	5.6	5.6
	Not important	12	11.1	11.1	16.7
	Neutral	39	36.1	36.1	52.8
	Important	39	36.1	36.1	88.9
	Very Important	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.20 shows the respondents view on the importance of the top management to always updates their knowledge on quality. 18 (16.7%) of the respondents didn't see the need of top management to always update their knowledge. 39 (36.1%) of the respondents were neutral about the top management to continual update their knowledge. However, most of the respondents which is 51 (47.2%) agreed that top management always update their knowledge on total quality management. This indicates that the respondents are working in departments which are effective or efficient since these departments are guided by the management to do things right the very first time. When this continues, it could improve the productivity and eventually improve the organisational profit. This could contribute to effective TMQ practices.

Table 4.21 Employees are trained for job related skills.

F5-Statement 2 to 3					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Not important at all	4	3.7	3.7	3.7
	Not important	16	14.8	14.8	18.5
	Neutral	32	29.6	29.6	48.1
	Important	41	38.0	38.0	86.1
	Very Important	15	13.9	13.9	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.21 shows the respondent's view on training received on the job. 67 (56.1% of respondents) were of the view that they had received training on the job. 16 (13.9% of

respondents) were of the view that they had received no training on the job. This indicates that the firm is doing well to train the valued staffs, which is a good practice of TQM.

Table 4.22 Cultural change

F6-Statement constructed from 1 to 4					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Not important at all	2	1.9	1.9	1.9
	Not important	14	13.0	13.0	14.8
	Neutral	34	31.5	31.5	46.3
	Important	37	34.3	34.3	80.6
	Very Important	21	19.4	19.4	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.22 shows respondent view on the importance of continuous learning through education and training. 16 (14.9%) of the respondents disagreed that continuous learning is provided through education and training. 34 (31.5%) of the respondents were neutral. But most of the respondents 58 (53.7%) strongly agreed that the company provides continuous learning through education and training. This indicate that the company understand the importance of continuous learning and this is part of the total quality management programme.

Company works closely with suppliers toward long-term partnership and improvement

Table 4.23 Teamwork

F7-Statement constructed from 1 to 6.					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly disagree	4	3.7	3.7	3.7
	Disagree	24	22.2	22.2	25.9
	Neutral	33	29.8	29.8	55.7

	Agree	41	38.7	38.7	94.4
	Strongly agree	6	5.6	5.6	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.23 shows respondents' view on the relationship that exists between them and the employer. 6 (5.6 %) of the respondents strongly agreed that the relationship was satisfactory. 41 (88.7%) of the respondents agreed that the relationship was satisfactory. 43 (39.8%) of respondents were neutral to the question. 33 (29.8%) of respondents disagreed that the relationship between them and the employer was satisfactory. 5 (3.7%) of the respondents strongly disagreed that the relationship between them and the employer was satisfactory. This indicates that majority of the staff (4.3%) are satisfied with their employer. This could imply that the company is doing something right with the human phase of the TQM practices. However, since it is not overwhelming majority of the respondents that held this view management could do more to make it more effective so that most of the respondents if not all should be satisfied.

Section C: Outcomes of TQM implementation.

Table 4.24 Operations effectiveness

Respondents view on the effectiveness of operation through TQM implementation					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Very low	3	2.8	2.8	2.8
	Low	19	17.6	17.6	20.4
	Moderate	22	28.9	28.9	59.3
	High	50	47.8	47.8	87.0
	Very high	14	13.0	13.0	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.24 shows the views of the respondents on whether the implementation of TQM has results to effective operation. 21(20.4%) of the respondents said the effectiveness of operations is low. 22 (28.9%) of the respondents were moderated. However, the majority 64 (60.8) of the respondents were of the view that the implementation of TQM leads to effective operation in the organisation. Based on the data findings, it shows that effectiveness when producing is achieved in the organisation, but, through the understanding of TQM the company can do much better than they are doing.

Table 4.25 Employee satisfaction

Has the implementation of TQM improved the employees' satisfaction					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	5	4.6	4.6	4.6
	Low	23	21.3	21.3	25.9
	Moderate	38	35.2	35.2	61.1
	High	28	25.9	25.9	87.0
	Very high	14	13.0	13.0	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.25 shows respondent's view on the employee satisfaction through TQM implementation. 25 (25.9%) of the respondents feels that the satisfaction is low. 38 (35.2%) of the respondents were moderate. 42 (38.9%) of the respondents were on the view that the implementation of TQM improves employee satisfaction. The satisfaction of employees is not satisfactory therefore could affect the operations of the organisations and the satisfaction of the customers. These issues if not addressed could affect customer satisfaction and invariably weaken any bonds of customer loyalty, ultimately these issues could affect organisational performance.

Table 4.26 Customer satisfaction

Customer satisfaction has shown improvement.					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly disagree	3	2.8	2.8	2.8
	Disagree	20	18.5	18.5	21.3
	Neutral	41	38.0	38.0	59.3
	Agree	29	26.9	26.9	86.1
	Strongly agree	15	13.9	13.9	100.0
	Total	108	100.0	100.0	

Source: **Author's work, 2016**

Table 4.26 shows the respondents view on pursuance of customer satisfaction in the organisation. 44 (40.8%) of the respondents believed customer satisfaction was improved. This

indicates that this percentage of respondents could be working to achieve customer satisfaction. However, 23 (30.3%) thought otherwise and 41 (38%) were neutral. Since customer satisfaction is key in the survival of any enterprise and central to TQM practices if this few respondents who don't agree to that assertion are right then this could affect the effectiveness of the practices of TQM.

4.7 Acceptance and rejection of hypothesis

The study reveals that from the first hypothesis we should reject $\mathbf{H_1}$ and accept $\mathbf{H_0}$ this was uncovered by the study that there is no universal uniform definition of TQM and that of Dr Demings is valid and should be accepted with the reference to the above findings.
The second hypothesis as revealed by the study we should accept as well $\mathbf{H_0}$ and reject $\mathbf{H_1}$**,** the study has revealed that there is significant relationship on TQM principles and the atual implementation of TQM.

The third hypothesis is very crucial and significant and the study reveals from the findings that we should accept $\mathbf{H_0}$ and reject $\mathbf{H_1}$ as the research findings are point that the adoption of TQM produces positive outcomes in automotive manufacturing industries in the form of quality products, customer satisfaction and elimination of defects.

4.8 Conclusion

This chapter dealt with the findings obtained on the effective operation through the implementation of TQM in the automotive manufacturing organisation. The findings were obtained through the distribution of questionnaires to employees at Feltex automotive manufacturing organisation. Descriptive statistics were used to present and analyse the demographic data. The categorical variables were presented in frequency distribution tables, bar graphs and pie charts. The formulated research questions were analysed in this chapter, utilising descriptive statistics. Specifically, Pearson's product moment correlation coefficient was used in the analysis of the research questions.

The statistical reliability and validity of the constructs or factors engaged in this dissertation were examined via IBM SPSS statistics version 24 and IBM SPSS. The results show that there is a significant relationship among TQM principles in the successful implementation of TQM in an automotive manufacturing organisation. This dissertation also revealed that team work is the most important element that construct all the other TQM elements to form a successful TQM implementation. The following chapter will summarises the analysis of the findings, provide recommendation and conclusion of the dissertation on the effective operation in the organisation through TQM implementation in an automotive manufacturing organisation.

CHAPTER 5
SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND FUTURE RESEARCH FOCUS

5.1 Introduction

This is the final chapter for this dissertation. This chapter summarises the whole dissertation, provide recommendation and give directions for a future research. The intention of this dissertation was to examine the operational effectiveness in the automotive manufacturing organisation through the implementation of TQM. This was achieved through giving account of TQM, examine the relationship among TQM principles and assess the outcomes obtained through TQM implementation in an automotive manufacturing organisation. This dissertation is based at Feltex automotive manufacturing organisation in Durban.

The primary data was obtained through questionnaires from a sample of 108 participants. With the cooperation between researcher, management, and the whole employees of Feltex automotive, the researcher managed to retrieve all the questionnaires from the participants that is 108. The objectives of the dissertation were firstly, to provide an understanding of the concept of TQM in the automotive manufacturing organisation. Secondly, to examine the relationship among the principles of TQM. Lastly, to determine the outcomes obtained through TQM implementation in an automotive manufacturing organisation.

5.2 Summary of the objectives and analysis

The aim of this summary is to give an overview of the process of how the dissertation realised all its objectives. The objectives are all summarised below:

5.1.1 To give an account of TQM making use of Dr. Deming's theory

In the field of total quality management, confusion arose worldwide with the scope of TQM concept and the effects of TQM implementation. The aim of this objective was to provide a combined understanding of TQM. To obtain this, one should understand how the concept of quality began before seek to understand TQM. To achieve this, it was important to thoroughly review different literature to obtain different views of authors about quality and the meaning of TQM. In this dissertation literature, it became clear that there is no single definition of TQM. TQM is defined, interpreted, and understood in numerous ways. While TQM is implemented

in many organisation, there is a little common understand of what TQM really means and does for the organisation. According to Walton (2013: 152), quality is one of the important and complex components of a business strategy and an element of production or services that keep customers satisfied. In the opinion of Peter (2015: 90) quality is determinant by the customer, the author view quality as a magic bullet that provides reduced costs, improved customer services and leads to higher margins. On the other hand, Walton (2013: 152), Metri (2016: 90) and (Crosby 2011: 52) share the same views that quality reduces cost, improve customer satisfaction, and leads to profit improvement. To summarise the definition of TQM, the following TQM definition was developed for this dissertation, which state that TQM is a management philosophy that focuses on continuous improvement of goods and services with the purpose of meeting or exceeding the internal and external customer's needs.

The definition involved the three basic principles of TQM that is teamwork, customer focus and continuous improvement. Continuous improvement means to constant examination of technical and administrative processes in search for better methods. Teaming with the suppliers and the customers provides benefits in terms of loyalty and synergy. The purpose of satisfying the customer is achieved by the attempt of the organisation to design and provide products that meets the customer needs. Moreover, to achieve the first objective Dr Deming's theory was utilised. According to theoretical essence of Deming, he believes firmly in the systematic nature of institutions and the requirement to eliminate variations in institutional processes. Deming management theory is focused on building an organisational system that emphasises cooperation and leaning for facilitating the implementation of management practices that leads to continuous improvement of processes, products and services which are important for customer satisfaction and organisation's survival.

This dissertation agrees on the philosophy that with proper implementation of TQM an organisation can benefit from operational effectiveness, customer satisfaction and employee satisfaction. Table 4.6presents that Feltex automotive has a close understanding of TQM with a variance of 0.34. According to Terziovski (2000: 289) a mean that is close to zero is good and present a close relationship or knowledge between variables. It should be noted that within the organisation not every respondent understood TQM. 48.1% in the organisation who heard about TQM but only 32.4% out of the 48.1% who fully understand TQM. The results from the dissertation shows that not everyone within the organisation fully understand TQM. Therefore, it will be of benefit if the top management and the organisation as a whole improves and spread

the important and knowledge of TQM implementation and application within the organisation. Black & Porter (2012, 96) encourages the implementation of TQM and further states that it reduces scraps and rework therefore, cut the costs within the organisation and improves customer satisfaction.

5.3 To examine the relationship among TQM principles.

This is the second objective of the dissertation. This section is about summarising the finding about the relationship amongst the TQM principles.

5.3.1 Top management commitment and leadership.

Rutherford & Holmes (2013: 115) asserted that the seven principles of TQM are the pillars of a successful TQM implement. Management commitment and leadership are considered as an important factor that is proved to be to be crucial for TQM implementation by (Soltani et al., 2016). Lack of commitment and support to quality by top management is found as a significant TQM implementation barrier in previous studies such as Salegna & Fazel (2012: 15) and Whalen & Rahim (2012). Table 4.11 represent the importance of top management and leadership in the organisation. The findings show that not much emphasis is put into place by the top management, this is proven by the majority (more than 40%) of the respondents of the dissertation who do not see the need of the top management commitment and leadership.

It can be concluded that the organisation still lack a lot of information and more education and training is needed. Moreover, from the dissertation point of view commitment on top management need to be emphasised and applied. According to (Angell & Corbett, 2010) it is impossible to implement TQM without top management commitment devoting the necessary resources to the effort. Researchers agree that the leadership and commitment of top management is the driver of TQM (Powell, 2015; Black & Porter, 2016 and Ahire et al., 2013). The importance of addressing this barrier for TQM implementation is emphasised by many researchers such as Gobadian & Gallear (2014); Flynn et al., (2015) and Hellsten, (2000). To summarise the heading in appendix A question 1 to 6, the respondents are more neutral about management commitment importance and application. The respondents feel that not everyone is involved in staff promotion and involvement in quality decisions and there is a lack of communication within the organisation.

5.3.2 Total involvement or employee involvement.

According to the results in table 4.14 the organisation does not fully involve the employees in decision making. Therefore, it will be complex for this organisation to fully enjoy the benefit of TQM implementation. The success of TQM requires full commitment from every member of the organisation. Total involvement is major success factor for many organisations in a different way. Employee involvement is a part of continuous improvement program in all the companies and introduced through some activities such as suggestion scheme and quality control circle. Employees must be emphasised to use their capabilities, utilise their latent innovativeness and creativity also be empowered to make isolate decisions in matters concerning their specific work and when successful, employees must be recognised for the achievement. Because, when there are no opportunities of employee's involvement and recognition employees might feel frustrated thereby leading to increased frequent turnover (Ngai & Cheng, 2011).

It is reasonable to argue therefore, that a focus on mobilising (empowering and involving) employees is a second critical requirement in Feltex Automotive manufacturing organisation, once the top management barriers have been sufficiently addressed. The respondent's result of Feltex table 4.12, further states that though they are not fully involved in every decision taken by the management. But tools to operate effectively are provided. This is a good decision taken by the organisation. However, it should also be noted that tools without proper information on how to use them, is merely a waste of time and resources. Therefore, it is suggested that the management put more emphasises on employees' involvement than the supply of tools.

5.3.3 Customer focus- customer satisfaction level is measured and monitored.

According to results in table 4.16, customer satisfaction is measured and monitored. In addition, 59.1% of the respondents agreed that customer satisfaction has improved since the implementation of TQM. The needs of customers and expectations requires continuous assessment, understanding also for every effort to be to be made not just to meet the requirements but to exceed them (Dean & Bowen, 2014: 262). This applies to both the internal and external customers. Customer focus is the key for Feltex automotive and the findings present that customer satisfaction is one of the significant outcomes of TQM. The company achieved the by using customer satisfaction survey, customer com

plain forms and measurement of customer services. They achieved this benefit by using customer satisfaction survey, customer complaint information and customer services. Table 4.15 presents the findings on the analysis of quality and customer information. The results show that most of 56.5% of the respondents agreed that information on quality are collected and analysed. Table 4.17 shows that not much attention is placed on measuring and analysing the performance of employees. Therefore, it is suggested that more focus is placed on measuring the performance of employees so that the company can strategical close the gaps or improve the performance where necessary.

5.3.4 Continuous improvement

Continuous improvement enables the management to form a strategic control that allows organisations to respond more proactively to fast demands in the diverse areas that influence the success of the organisation. Continuous improvement aim is to pursue incremental and innovative improvement of its process, products and services should be the driver to achieve improved quality. The purpose of continuous improvement is to reduce the deficiencies and must be practiced daily by all individuals and the organisational departments. The improvement sources include the ideas of employees, research and development, the input of customers and benchmarking. Referring to the data findings on table 4.19 and 4.18 that covers all the four questions on continuous improvement.

The respondents agreed that the organisation practice continuous improvement which is one of the important elements of TQM principles that enables customer satisfaction and operation effectiveness when applied effectively. In summary, the company is doing well in ensuring continuous improvement in the car components supplied by the organisation. Therefore, has opportunities of enjoying the benefit of TQM implementation that are operation effectiveness and employee satisfaction. Continuous improvement improves the value to the customers through improved services by reducing errors, waste, and cycle time improvement.

5.3.5 Education and training

Education and training is one of the principles that results to continue improvement and customer satisfaction with the organisation. Successful TQM requires a continuous training within the organisation. A successful training would include group dynamics, problem solving and task skills training. The finding on table 4.20 and table 4.21 that construct statement 1 to 5

under education and training agreed that the organisation provides education and training in the organisation. This was the response of more than half of the participants that means the organisation is doing well in educating and training the employees.

5.3.6 Cultural change

Cultural change can be referred to the shared theories, values and assumptions that combines an organisation together. The cultural change reveals psychological qualities of organisational agreement, how to deal with decisions and problems in the organisation and provides guidance on how things should be done in the organisation. The major feature of TQM is the idea of culture being grafted into management theory and practice. The aim is to change management and employees' attitude towards quality control. The cultural change enables the organisation to plan for daily production. As per the findings on table 4.19 on cultural change question one to four the table present that the organisation is doing well on the cultural change side.

5.3.7 Team-work

Even though, the individual effort is recognised in TQM, but the focus is on working on a team. The success of TQM calls for cooperation within and outside the organisation. Hence, the workers must be trained in a group to become team players. The purpose of team work is to develop a sense of interdependence and a sense of shared purpose. In the organisation team work is emphasised for improvement incremental which results into a significant impact in the whole organisation. For this dissertation, the findings show that Team work has the major influence in the success of TQM. This was measured using the correlation and got r = 671 which was the first highest correlation. Followed by education and training r = 656 and ended by customer focus with an r = 461. This means that on the effective operation in the automotive manufacturing organisation, the teamwork is the most important element or has the major influence on the operation effectiveness, customer satisfaction and employees' satisfaction. Communication as one of the TQM principles play a crucial role in delivering messages within and outside the organisation. According to the findings of this dissertation there is a proper communication within the organisation.

5.4 Outcomes of TQM implementation

This section summarises the outcomes findings on the TQM implementation of Feltex automotive. According to Yang (2014:122) a successful TQM implementation leads to

operation effectiveness, customer satisfaction and employee's satisfaction. Table 4.16 presents that since the company employed TQM implementation it has achieved operation effectiveness. Moreover, scrap, rework and cost savings are some of the elements that the organisation achieved through TQM implementation. 60.8 % of the respondents are on the view that since TQM implementation was introduced the effectiveness of operation has increased. This is in line with the statement of Yang, 2014 that the implementation of TQM results to operation effectiveness.

5.5 Employee satisfaction

Table 4.23 represent the finding on employee satisfaction, this table show that not every employee is happy about the implementation of TQM, only 38.9% of the employees were satisfactory the rest were not happy. This can be assumed that those who are not happy are those who do not understand and apply TQM. Therefore, the company is still lacking in making every employee happy within the organisation and these can affect the operation of the organisation.

5.6 Customer satisfaction

Customer satisfaction is the most important principle if TQM and the pillar of the organisational success. Table 4.24 present that majority of the respondents are on the view that after the implementation of TQM within the organisation, the service and appreciation of the customer has improved. The table show that 70.8% of the respondents feels that the customer satisfaction improved after the implementation of TQM. A happy customer calls for cooperation, loyalty, and improvement in the margins of the organisation.

5.7 Conclusions and recommendation

In overall, in response to the research questions and objectives on the effective operation through the implementation of TQM in an automotive manufacturing organisation at Feltex automotive. Drawing from the evidence of this research, the conclusion is reached that also serve as recommendations in this dissertation are identified.

TQM depends on the below:

- There must be more emphasises on the development of understanding in the concept of TQM in the organisation.
- Top management and leadership are required to fully commit and support the implementation of TQM at Feltex automotive manufacturing organisation.
- Top management and the organisation must commit on the development of TQM strategy that are customer driven to integrate with the organisation planning.
- The best way to improve organisational performance is by involving and empowering employees at all levels.
- The organisation and management need to align its needs with the needs of the customers
- It is recommended that the company provides adequate training to everyone so that not only certain people who understand TQM but the whole organisation. This will help the organisation to equally grow and improved quality services, customer satisfaction and operations effectiveness.
- Is it recommended that the company encourages the management of processes establishes systems to pursue high levels of quality and operation performance.
- Proper communication and transfer of information can assist the organisation to obtain their quality goals.
- A commitment to customer satisfaction must be put into place so that the organisation will not only aim to satisfy the customer requirements but also plan to exceed.

5.8 Future research directions

The current dissertation has highlighted few issues for the future. Firstly, the current dissertation is descriptive in nature. More research in this area is still required to confirm the findings that automotive manufacturing organisations encourages more on the quality aspects and strengths of the management practice. Secondly, this dissertation was only focused on one automotive manufacturing organisation. It is suggested that future dissertation do not cover only the automotive organisation but also service organisations. Moreover, it is recommended to do research in more than one organisation and more than one industry in the future to ensure diverse information. This is because manufacturing and service organisations differs in operation. Service organisations are depended on people to manufacture and sell their products. But the manufacturing organisation produce and sell their products. Therefore, what believed

to be quality in the manufacturing organisations might not be what is seemed to be quality in the service organisations as they deal with intangible services.

Thirdly, the dissertation findings confirmed that more respondents were on the operational level. In the future research, it is recommended that the researcher try to balance the level of participants to get information from equal level of participation. Moreover, it will also be recommended that the respondents are grouped as their level of management so that when the information is obtained the researcher will be able to clarify on for example which level understand TQM less or better. This enables better understanding and more comprehensive opinion of how workers serve as a source of ideas and innovation.

Fourthly, for future dissertation, the research could be based on explorative in nature and focus on assessing the challenges that are faced by organisations when implementing TQM. Finally, the dissertation was focused on empirical studies and focused locally. For future studies, it is recommended to conduct the study and look at how international organisations view and implement TQM. Efforts to include companies in other part of country will certainly enhance the significance as well as the validity of the results.

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APPENDICES

Appendix A

Questionnaire

FELTEX AUTOMOTIVE
A Division of KAP Automotive (Pty) Ltd
291 Paisley Road
Jacobs, Durban, 4052
PO Box 13330, Jacobs, 4026

Tel: +27 31 460 4200
Fax: +27 31 460 4290
Website: www.feltex.co.za

EFFECTIVE OPERATION THROUGH TQM IN AN AUTOMOTIVE MANUFACTURING INDUSTRY

SURVEY QUESTIONAIRES

Introduction:

This survey is about addressing the effective operation obtained through the implementation of TQM in an automotive manufacturing industry. The information obtained will be used for research purposes only and no attempt will be made to identify any individual or organisations in any of the publications.

Instructions:

The questionnaire consists of two sections, section A contains biographical questions and section B are the TQM related questions. Please read the questions carefully before answering them.

Section A

The questionnaire examines the operation effectiveness through TQM implementation in the automotive organisation. Please provide the following biographical information required by marking the applicable block with a cross (x).

1. (A) Position

1. Top management		2. Middle management		3. Operational employee	

2. (A) what department are you based in?

□ Production department □ Quality Assurance/Control

□ Engineering Department □ Logistics department

□ Maintenance department □ others (Please specify) …….

3. (A) Qualification

1. Grd 10-12	2. Grd 12 to 3 years' diploma	3. Degree+

4. (A) Gender

1. Female		2. Male	

5. (A) Have you ever heard about TQM before.

□ Yes □ No

6. (A) Do you fully understand TQM.

□ Yes □ No

Section B, consists of Total Quality Management related questionnaires. Please circle the number of the response that best represents the level of agreement that indicates whether you:

1 = Strongly disagree 3 = Neutral 5 = Strongly agree

2 = Disagree 4 = Agree

STATEMENT	**DEGREE OF AGREEMENT**
1B Statement	
1. TQM is a management philosophy and practice to ensure effective and efficient use of all available resources.	1 2 3 4 5
2. TQM aims to make customer satisfaction as the focus of a business.	1 2 3 4 5

3. Teamwork and participation are important for achieving a continuous improvement culture.	1 2 3 4 5
4. Training and education are vital elements with respect to TQM implementation.	1 2 3 4 5
5. Management leadership, commitment and support determine the success of new change initiatives.	1 2 3 4 5
6. Quality related activities have a huge impact on the success of an organisation.	1 2 3 4 5
7. Quality and effective operation serve as a catalyst for improvement	1 2 3 4 5
8. implementation of TQM emphasis continuous improvement in an organisation	1 2 3 4 5
9. TQM ensures that standards are set, measures are followed and failure prevented	1 2 3 4 5
10. TQM focuses on the measurements of work performance	1 2 3 4 5
11. Customers are consulted about the level of and quality of service they receive and given opportunities to show their views.	1 2 3 4 5
12. TQM focuses on getting employees focused and motivated	1 2 3 4 5
13. TQM strategy focuses on satisfying internal and also external employees	1 2 3 4 5
14. TQM ensures that proper measures to produce goods and services are followed	1 2 3 4 5
15. TQM reduces costs of production	1 2 3 4 5
16. effective operation is achieved in the organisation	1 2 3 4 5
17. Operational personnel understand the interface between their task and the strategic plans and objectives of the organisation.	1 2 3 4 5
18. I feel fully responsible for the work that I do and believe that my work is important to the success of the organisation.	1 2 3 4 5
19. Employee work closely together as a team in order to coordinate work and improve quality.	1 2 3 4 5
20. Apart from my job specifications, I can also participate in other activities through teams to assist in achieving quality services.	1 2 3 4 5

This section attempts to determine the level of TQM implementation in the automotive manufacturing industry. Please circle your perception on the importance of each statement listed below and the extent practice in your organisation. Please use the following scales:

A. IMPORTANCE (The level of perceived importance of the factor):

1 = Not important at all 3 = Neutral important 5 = Very important

2 = Not important 4 = Important

B. PRACTICE (The extent or degree of practice in your organisation):

1 = Very low 2 = Low 3 = Moderate 4 = High 5 = Very high

For example: TQM is communicated to all employees.

If importance = 4, this means you perceive it to be an important element for successful TQM and Practice = 5, this means it is very highly practiced

FACTORS	IMPORTANCE	PRACTICE
F1. Management Leadership		
1. Top management ensures that every employee knows the company mission and objectives of the business.	1 2 3 4 5	1 2 3 4 5
2. Top management strongly promotes staff involvement in quality management and improvement activities	1 2 3 4 5	1 2 3 4 5
3. Communication links are established between employees and top management.	1 2 3 4 5	1 2 3 4 5
4. Top management takes care of employee well-being (e.g. welfare, health and safety provision, etc.).	1 2 3 4 5	1 2 3 4 5
5. Company fulfils its social responsibilities (such as environment friendly operation, charity to school, etc.	1 2 3 4 5	1 2 3 4 5
F2. Employee involvement		
1. Human resource ability are considered in improvement activities.	1 2 3 4 5	1 2 3 4 5
2. Employees are offered information and training they need to do the job effectively.	1 2 3 4 5	1 2 3 4 5
3. Employees are given tools they need to do the job effectively.	1 2 3 4 5 1 2 3 4 5	1 2 3 4 5 1 2 3 4 5

4. Sufficient financial resources provided to support improvement activities. 5. Company manages its material	1 2 3 4 5	1 2 3 4 5
F3. Customer Focus 1. Customer satisfaction level are measured and monitored. 2. Information on quality and customers are collected and analysed. 3. Information on operational and financial performances are collected and analysed. 4. Employees views are listened to and acted upon. 5. Employee performance are measured and recognised	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
F4. Continuous Improvement 1. There is a quality improvement coordinating body (e.g. quality steering committee). 2. Improvement teams are active in all departments. 3. Quality improvement tools and techniques are widely used. 4. The company practices continuous improvement of all its products, services and processes.	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
F5. Education and Training 1. Top management always updates their knowledge. 2. Employees are trained for job related skills. 3. Employees are trained on total quality concepts. 4. Continuous learning is provided through education and training.	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
F6. Cultural Change 1. A pleasant environment exists in all working areas. 2. Positive values such as trust, honesty, hardworking, are fostered by management. 3. Teamwork and involvement are normal practices in the company. 4. The company adopts 'Employee satisfaction' initiatives (such as suggestion schemes, profit sharing, etc.).	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5	1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5

F7. Teamwork		
1. Company works closely with suppliers toward long-term partnership and improvement	1 2 3 4 5	1 2 3 4 5
2. Are employees involve in every in decision making	1 2 3 4 5	1 2 3 4 5
3. Do employees and managers work together to create procedures and policies	1 2 3 4 5	1 2 3 4 5
4. Are all the relevant stakeholders involved in the product design and development (customers, suppliers and managers)	1 2 3 4 5	1 2 3 4 5
5. Company ensures that suppliers can maintain high technical standards and meeting quality specifications.	1 2 3 4 5	1 2 3 4 5
6. Company regularly conducts suppliers' quality audits.	1 2 3 4 5	1 2 3 4 5

This section attempts to determine the outcomes of Feltex Automotive Manufacturing industry after implementation of TQM. Please circle the number of the response that best represents the level of agreement that your company has with the following statements.

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

STATEMENT		**DEGREE OF AGREEMENT**
Since the company began implementing a total quality management program:		
1. Customer satisfaction has shown improvement.		1 2 3 4 5
2. The numbers of products/service defects, errors, or failures found by the customer have decreased.		1 2 3 4 5
3. Our quality program has improved our business performance in general.		1 2 3 4 5
4. Employee satisfaction has increased.		1 2 3 4 5
5. Productivity has improved		1 2 3 4 5
6. Do you consider your TQM program successful?		□ Yes □ No
Justify		

Does the organisation provide the appropriate level of education and training to ensure that your skills and attitudes enhance continuous improvement? WHY	Yes	No

Suggestion

What do you think need to be improved or add to ensure that TQM in the organisation is always a success

THANKS A LOT FOR YOUR TIME

Appendix B

Gatekeeper's letter

FELTEX AUTOMOTIVE
A Division of KAP Automotive (Pty) Ltd
291 Paisley Road
Jacobs, Durban, 4052
PO Box 13330, Jacobs, 4026

Tel: +27 31 460 4200
Fax: +27 31 460 4290
Website: www.feltex.co.za

Permission to Conduct a Research Survey

27 April 2016

To whom it may concern

This letter is being produced in response to a request by Zamalunga Pamela Cele, student number 212530113 to conduct a research survey on the effective performance through TQM in an automotive manufacturing industry.

The student has indicated that UKZN require a letter from the company granting them permission to conduct the study. As Feltex Automotive manufacturing industry, we are pleased to give Zamalunga an access to conduct her research study in our organisation which is based in Jacobs.

Yours Sincerely

FELTEX AUTOMOTIVE TRIM
REG. No.: 1957/001891/07
P.O. BOX 12222
JACOBS, 4026
TEL.: 460 4200 FAX.: 460 4350

KAP Automotive (Pty) Ltd, Reg. No. 1957/001891/07. VAT No. 4130219829
Directors: M Balladon, GN Chaplin, UMG Frigerio, KJ Grové, JP Haveman, SP Lunga, FH Olivier, T Siyolo
Company Secretary: Steinhoff Africa Secretarial Services (Pty) Ltd

KAP
KAP GROUP COMPANY

Appendix C

Ethical clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

14 July 2016

Ms Zamalunga Pamela Cele
School of Management, IT and Governance
Westville Campus

Dear Ms Cele

Protocol reference number: HSS/1052/016M
Project Title: Effective operation through Total Quality Management: A case study of Feltex Automotive

Full Approval – Expedited Application

In response to your application received 12 July 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

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 discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

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

Yours faithfully

.....
Dr Shenuka Singh (Chair)
Humanitities & Social Scinces Research Ethics Committee

/pm

Cc Supervisor: Ms JR Gurayah
Cc. Academic Leader: Professor Brian McArthur
Cc School Administrator: Ms Angela Pearce

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

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100 YEARS OF ACADEMIC EXCELLENCE
Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

Appendix D

Turn-it-in report