TOTAL QUALITY MANAGEMENT AND OPERATIONS PERFORMANCE AT A BAKERY FIRM IN THE CITY OF TSHWANE

By

Syria Sibongile Chauke

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Supervisor: Dr E. Edoun

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DECLARATION BY THE CANDIDATE

I, Syria Sibongile Chauke, hereby declare that this dissertation is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been referred to and used, they have been duly acknowledged. It is submitted in partial fulfillment of requirements for the degree of Master of Technology in Operations Management in the Department of Quality and Operations Management at the University of Johannesburg.

Signature:

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Date:

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DEDICATION

To my beautiful children, Kulani, Zinhle and my unborn child Oratilwe thank you for your love. You are my inspiration and I love you so much. As a token of my gratitude I dedicate this dissertation to you and I hope it will be an inspiration to you too in the future.

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First of all, thank you for your interest in this research. With this dissertation I complete my degree of Master of Technology in Operations Management in the Department of Quality and Operations Management at the University of Johannesburg.

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ABSTRACT

In recent times, the South African bakery industry has gone under intense competition that threatens the survival of players within the sector. An identified bakery firm located in the City of Tshwane is not immune to the problem. Faced with fierce competition from established bakery firms such as Albany, Sasko, Supreme, Blue Ribbon and retail own brands such as Shoprite, Spar and Pick n Pay, the bakery firm urgently need to rethink its strategy to secure its survival. An assessment of total quality management (TQM) on the operations of the bakery firm is a recommended strategy for continuous improvement and gaining a competitive edge. It is therefore important in this study to understand employees' perceptions of total quality management and establish its impact on operational performance. For the sake of bringing this study into operation, the researcher utilised a descriptive research design. Data was collected through a well-structured questionnaire from a sample of 110 employees working for the bakery firm. Analyses of data that include mean values, standard deviation, correlation and regression analyses was performed through the use of the Statistical Package for Social Sciences. Results showed that employees had a negative perception on total quality management factors that include leadership, knowledge management, supplier management, customer focus, employee involvement and process management. A significant positive relationship was also found between total quality management (leadership, knowledge management, supplier management, customer focus, employee involvement and process management) and operational performance. This study also provide recommendations to authorities within the bakery industry so as to improve total quality management and operational performances

***Key words**: Total quality management, operations performance.*

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CHAPTER 1

INTRODUCTION AND SCOPE OF THE RESEARCH

1.1 CHAPTER OVERVIEW

In this chapter, direction of the research is set. Firstly, an introduction of the study background is given. The introduction will also highlight the various gaps that existed leading to the commencement of this study. A brief literature review will be provided to introduce the major constructs and sub-constructs of the study. The literature review will lead to the introduction of the problem statement, research questions, objectives and the research methodology that was utilised.

1.2 INTRODUCTION

In recent times, the South African bakery industry has gone under intense competition that threatens the survival of players within the sector (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013, p 46). An identified bakery firm located in the City of Tshwane is not immune to the problem. Faced with fierce competition from established bakery firms such as Albany, Sasko, Supreme, Blue Ribbon and retail own brands such as Shoprite, Spar and Pick n Pay, the bakery firm urgently need to rethink its strategy to secure its survival. According to Sadikoglu and Olcay (2014), an assessment of total quality management (TQM) on the operations of the bakery firm is a recommended strategy for continuous improvement and gaining a competitive edge.

Operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts have led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence operations at a bakery firm in the City of Tshwane in South Africa.

1.3 TOTAL QUALITY MANAGEMENT

The aspect of Total Quality Management is defined as an approach that brings together and take care of all the critical areas of business that include the employees, machinery, the systems, management and external stakeholders (i.e. suppliers, customers, government) as advised by Evans (2011). Similarly to Evans, Sadikoglu and Olcay (2014) state that TQM is a philosophy that ensures a quality delivery of products, services and systems to the satisfaction of customers, employees, shareholders and other related stakeholders. The definitions of TQM provided by Sadikoglu and Olcay (2014) and Evans (2011) have a strong emphasises on the success of operational processes.

1.3.1 Total quality management practices

According to MacKelprang et al. (2012) and Phan et al. (2011), the practices of TQM are classified as top management influence, knowledge and process management, training, supplier quality management, customer focus and strategic quality planning. The TQM practices are described by Sadikoglu and Olcay (2014) in the context of the bakery industry as follows:

Top management influence refers to the support that is displayed by the bakery's leadership. According to Goetsch and Davis (2010) and Criado and Calvo-Mora (2009), top management support is seen through its promotion of employee development, establishment of an effective communication system with employees, managers and customers. Phan et al. (2011) also state that top management should encourage employee participation in decision making.

Previous studies (Kim et al., 2012; Parast and Adams, 2012) found a positive relationship between top management support and improvement in firm operations, inventory management performance, employee performance, innovation performance and customer results. Based on these findings it becomes crucial to carry out this present study that seeks to understand employees' perception of the current state of TQM at the bakery firm.

Knowledge management is defined by Sadikoglu and Zehir (2010) as a process that ensures that employees receive timely reliable, consistent, accurate and necessary data that they need to perform their work effectively and efficiently. On the other hand, process management is defined by Sadikoglu and Temur (2012) as an emphasis given on activities through a set of methodologies including preventative and proactive approaches.

A study by Bell and Omachonu (2011) and Chen (2008) found that knowledge and process management are important aspects towards a successful revitalisation of the operational processes of a firm. It is therefore critical for this proposed study to be carried out so as to find out the relationship between knowledge management and process performance in the context of the bakery firm.

Training is also an aspect that is considered closely related to TQM. According to Prajogo and Hong (2008), training refers to an act of improving the current skills and knowledge level of the firm's employees including managers and employees. Sadikoglu and Olcay (2014) state that training is critical in bringing success in the firm. A study carried out by Phan et al. (2011) also found that training is positively related to operational performance, inventory management performance, employee performance, innovation performance, customer results and financial performance. It is therefore important to assess training and operations performance within the bakery industry as proposed in this study.

The success of a bakery's operation heavily relies on the performance of its suppliers. According to Bell and Omachonu (2011), supply chain management in TQM implies developing relationship and strategic alliance with the suppliers. The relationship would also require the firm to involve its suppliers as early as possible from the product process development in order to take advantage of their expertise and knowledge. It is therefore important for this current proposed study to assess the state of supplier quality management at a bakery firm.

According to Phan et al. (2011), customer focus refers to the ability of the firm to fully understand its customers' expectations and offer them accordingly. It is

therefore important that the firm focus its effort towards the needs and wants of its customers while streamlining its operations towards an achievement of such needs. Customer satisfaction leads to the firm's performance. It is therefore important for this proposed study to assess employees' perception on the ability of the organisation to focus on its customers and improvement on the processes on the firm.

According to Sadikoglu and Olcay (2014), strategic quality planning involves the firm's vision, mission and values. A proper strategic quality plan should involve its employees (Phan et al., 2011). Previous studies such as Criado et al. (2009) and Chen (2008) found that strategic quality planning is positively associated with operational performance. It is therefore important for this proposed current study to carry out a similar study in the context of the bakery firm and assess the relationship between strategic quality planning and operational performance.

1.4 Operations performance

According to Sadikoglu and Olcay (2014), operational performance is measured on the efficiency and effectiveness of the operations that are responsible for the delivery of the products and services. Efficiency and effectiveness of the operations is realised through the ability to timely deliver products and services according to customer's expectations.

1.5 THE PROBLEM STATEMENT

As noted earlier in the background of the study, operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts has led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence operations at a bakery firm.

1.6 THE CONCEPTUAL MODEL

The conceptual theoretical model given in Figure 1.1 is grounded on the total quality management factor theory. It conceptualises the relationship between total quality management factors and operational performance. Operational performance is the dependent variable while total quality management factors (leadership, knowledge management, supplier management, customer focus, employee involvement and process management) are independent variables.

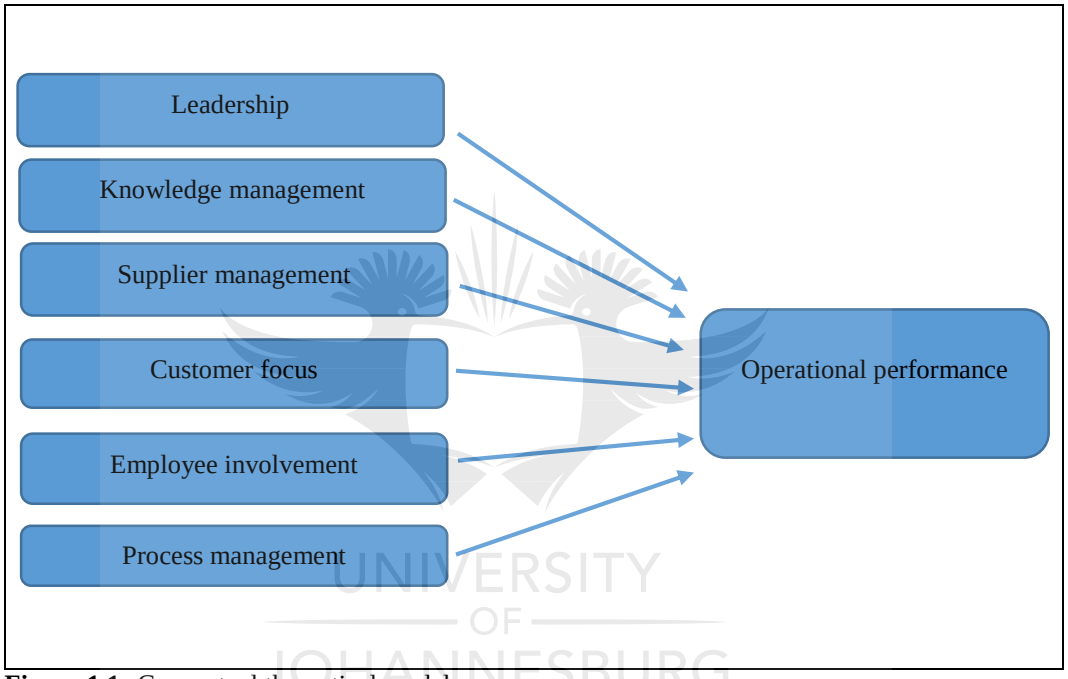

Figure 1.1: Conceptual theoretical model

The model illustrated in Figure 1.1 shows the conceptualised relationship between sub-constructs of total quality management and operational performance. According to the model, there are seven sub-constructs that forms the bases of this study. As already noted in this section, these sub-constructs are leadership, knowledge management, supplier management, customer focus, employee involvement, process management and operational performance. The first six sub-constructs are predictors of total quality management.

1.7 THE RESEARCH QUESTION AND OBJECTIVES

1.7.1 RESEARCH QUESTION

To what extend do employees' perception of total quality management influence operational performance at a bakery firm?

1.7.2 OBJECTIVES OF THE STUDY

The objectives of the study are to:

1. To assess employees' perception of the state of total quality management at a bakery firm.
2. To investigate the influence of total quality management practice towards operational performance at a bakery firm.

1.8 MATERIAL AND RESEARCH METHODOLOGY

Given that this present study concentrated on assessing the state of total quality management and understanding the influence of total quality management towards operational performance at a bakery firm, utilizing a conceptual framework developed from literature (Sadikoglu and Olcay, 2014), a descriptive quantitative methodology was conducted.

An instrument developed from literature (Sadikoglu and Olcay, 2014) was utilized to collect data. The developed self-completion questionnaire was used to gather data from a sample of employees working at the bakery firm. A pilot study was carried out from 10 employees of the bakery before the research was conducted so as to gauge if the questions are easy to understand. Research assistants assisted with distributing the questionnaire. Study respondents deposited the completed questionnaires in the boxes held by assistants.

The data was collected from the bakery firm in the City of Tshwane. The bakery firm had about 150 employees and a sample of 110 participate in the study. In order

to determine the sample size, the researcher utilised the Raosoft mechanism. Raosoft was useful in ensuring that the maximum margin of error is at 5 per cent while confidence level is 95 per cent (Raosoft, 2014). It was appropriate to utilize the convenience sampling technique considering that the sample was made of homogenous elements that were employees working at a single bakery firm (Calder, Phillips & Tybout, 1981:197-207).

This study made use of SPSS version 24 to conduct both descriptive and inferential analyses. Descriptive analysis was utilised to perform methods such as frequency tables, mean values and standard deviation. On the other hand, inferential analysis was useful to conduct reliability and validity test, correlation and regression analyses.

1.9 Validity and Reliability

In order to ensure the reliability and validity of the measurement tool, two methods were utilised. First, the research made use of reliability test through Cronbach's Alpha. Secondly, factor analysis was used to test the validity of the items utilised in the tool (Evanschitzky, Baumgarth, Hubbard, & Armstrong, 2007:411-415). The two methods were utilised after carrying out a pilot study and consultation with the supervisor to ensure that the ethical requirements prescribed by the University of Johannesburg are complied with.

1.10 ETHICAL CONSIDERATIONS

This study complied with the ethical requirements as stipulated by the University of Johannesburg Ethics Committee as follows:

Informed consent: Voluntary participation was obtained from the participants before data collection commenced.

Anonymity: The participants were assured of strictly confidentiality and anonymity of their participation in the study.

Free withdrawal: The right to free withdrawal without predijuce was explained and granted to the respondents

Group data: The information collected will be reported as group data and no reporting of individual information will be given out.

Research rules: The research followed the research rules provided by the University of Johannesburg and no misuse of position or personal power was permitted from the researcher.

No harm imposed: There was no harm permitted to the research participant or the businesses involved in the research process.

1.11 DISSERTATION CHAPTER OUTLINE

Chapter 1: This chapter will provide a general overview of the study. It will also give out the study research question, objectives, methodology and the proposed conceptual model.

Chapter 2: In this chapter there will be a provision of both theoretical and empirical literature review related to the concept of total quality management and operational performance.

Chapter 3: In chapter 3, the research methods that were utilised to operationalise this study are provided. The discussed research methodology will include the utilised research paradigm, research design, data collection methods and the various descriptive and inferential data analysis mechanisms.

Chapter 4: The analysis of data will be presented in chapter 4. The analysis of data will be in coordination to the research questions and the study objectives.

Chapter 5: Chapter 5 is the final chapter. It provides the conclusions to the research objectives, summary of findings, implications for both theory and practice. In

addition, this chapter will provide the limitations of the study as well as the direction for future research before a final summary of the study is provided.

1.12 LIMITATIONS OF SCOPE

This study is limited to the assessment of employees' perceptions of total quality management at a bakery firm. The findings in this study cannot be generalised to every manufacturing firm in South Africa, Africa and in the world. It is therefore important to realise that the study has major theoretical and practical implications within the manufacturing firms and many other industries.

1.13 DEFINITION OF TERMS

Leadership: Leadership is defined by Al-Damen (2017) as the degree of acceptance of quality responsibility by top management and participation in quality improvement efforts as well as being able to monitor the process.

Knowledge management: Knowledge management is defined by Sadikoglu and Zehir (2010) as a process that ensures that employees receive timely reliable, consistent, accurate and necessary data that they need to perform their work effectively and efficiently.

Supplier management: According to Phan et al. (2011), supplier management involve the reduction and streamlining of a supplier base so as to management supplier relationship and develop a strategic alliance.

Customer focus: According to Phan et al. (2011), customer focus refers to the ability of the firm to fully understand its customers' expectations and offer them accordingly.

Employee involvement: Employee involvement refers to the ability of the bakery firm to ensure that its employees are involved throughout its operations (Zahari & Zakuan, 2016).

Process management: According to Ngambi and Nkemkiafu (2015), process management includes ensuring that the machinery and methods of production utilised are up to date. Sadikoglu and Olcay (2014) further add that process management involves the utilization of material that is of quality as well as ensuring that people who are utilised in production department are well skilled and experienced.

Operations performance: According to Sadikoglu and Olcay (2014), operational performance is measured on the efficiency and effectiveness of the operations that are responsible for the delivery of the products and services.

1.14 CONCLUSION

This chapter provided a snap shot of the research. It gave a brief introduction of the literature relevant to this study. The chapter also provided the research objectives, study question, hypotheses and the conceptual framework. The chapter also hints on the research methodology that was utilised in this research. The next chapter will explore further on literature review that is relevant in this study.

CHAPTER 2

LITERATURE REVIEW

2.1 CHAPTER OVERVIEW

Chapter two presents theoretical and empirical evidence related total quality management and organizational performance constructs. In this study, these were explained in the context of a bakery industry. The progression of literature review assisted in identifying research gaps and creation of the study conceptual framework. The flow of literature is illustrated in Figure 2.1 as follows.

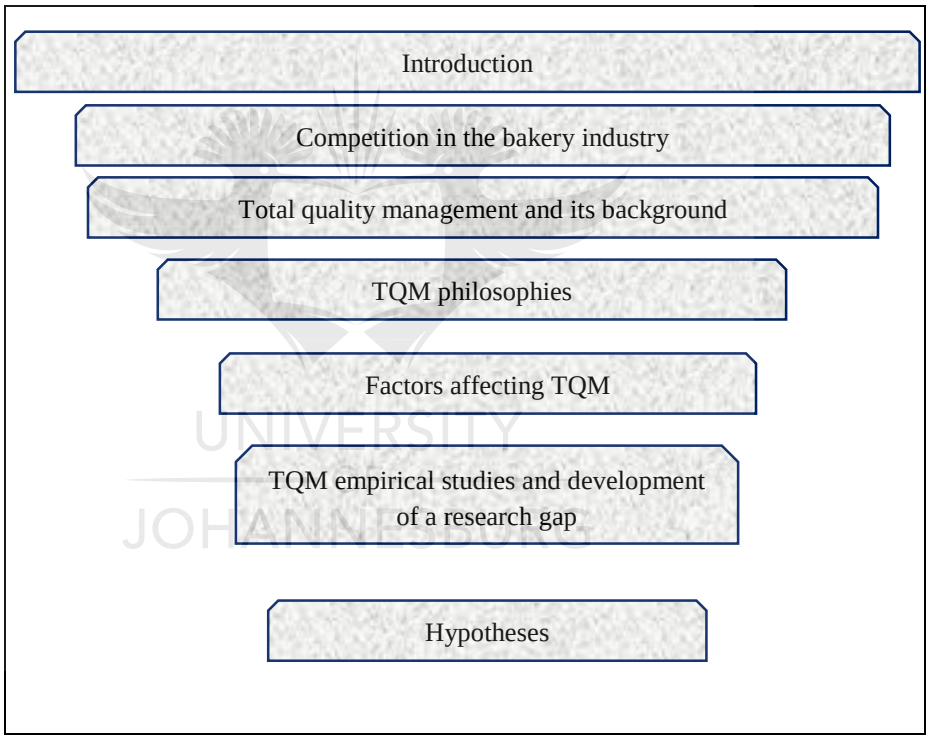

Figure 2.1: Literature review progression leading to the development of a conceptual framework and hypotheses

2.2 INTRODUCTION

As already mentioned in chapter 1, the South African bakery industry has gone under intense competition that threatens the survival of players within the sector (Gharakhani *et al*., 2013, p 46). The rise in competition came as a result of deregulation of the bakery industry that came into effect in 1991 (South African Chamber of Baking, 2017). A persistent increase in competition following the deregulation stance, has resulted in the closure of most industrial bakery firms as noted by the SA Chamber of Baking (2017). An identified bakery in the City of Tshwane is under threat due to a vast rise in competition in the industry. It is therefore crucial for the bakery firm urgently rethink its strategy in order to secure survival.

Quality management gurus including Hogan and Coote (2014); and Fernandez and Moldogaziev (2013) argue that a thorough inspection of the state of total quality management and its influence on organizational operations is one of the strategies that a bakery firm can adopt to remain competitive. Ahmad and Yusof (2010) also support that factors affecting total quality management need a constant check especially from an employee point of view. Thus opinions of employees involved on day to day operations need to be taken into consideration when devising operational strategies.

Operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts has led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence on operations at a bakery firm. The next section provided an overview of the state of competition within the bakery industry.

2.3 THE BAKERY INDUSTRY IN THE CITY OF TSHWANE

The City of Tshwane, capital city to South Africa hosts a highly competitive bakery industry. According to the SA Chamber of Baking (2017), the SA bakery industry is comprised of three main groups of players. These are the industrial bakery, the in-store bakery and the stand alone retail bakery (SA Chamber of Baking, 2017).

2.3.1 Description of different players in the bakery industry

Industrial bakeries refers to baking firms that are solely producing bread and confectioneries for sale to retail outlets, for example Albany bakery to Shoprite stores. On the other hand, in-store bakeries are retailers with an in-house bakery, for example supermarkets such as Spar and Pick n Pay who are producing own brand bread despite carrying bread and confectioneries from industrial bakeries (i.e. Sunbake, Blue Ribbon). Stand-alone bakeries are usually sole producers of bread and confectioneries for their own sale, for example Butterfields.

2.3.2 Competition in the bakery industry within the City of Tshwane

The number of bakeries in South Africa, especially in the City of Tshwane have drastically increased since 1991. As noted in the introductory section, rise in competition was aggravated by the deregulation of the bakery industry that came into effect towards the independence of South Africa (SA Chamber of Baking, 2017). With deregulation, opportunities were created to different types of players. Figure 2.2 and Table 2.1 illustrate the distribution bakeries within the City of Tshwane according to their category.

Figure 2.2: Distribution of bakery players in the City of Tshwane

Source: Report Linker (2017)

Table 2.1: List of industrial, in-store and stand-alone bakeries in the City of Tshwane

Source: Report Linker (2017)

	Industrial	In-store	Stand-alone retail
1	Sasko	Checkers	Dainty Delight Conture bakery
2	Supreme	Shoprite	Varsity
3	Blue Ribbon	Spar	Drienier
4	Sunbake	Pick n Pay	Cakes for Africa
5	Albany	U-save	Matrix Mobile
6	Premier	LM Supermarket	Cake studio
7		Saverite	Lucky bread
8		Superspar	Bread Basket
9		Ok Grocer	Chaly's cakes and delight
10		Zorba	Corner
11		Big save	Fournos
12		Cambridge	Hercules
13		Kit Kat	Belem confectioners
14		Foodzone	East Balt South Africa
15		Frontline	Butterfield
16		Advance	Divine delight
17		Freedom	Fournos
18		Savemor	Baked by Nataleen

19		Kwikspar	Elsa's
20		All save	Baking Bonanze

Figure 2.2 and Table 2.1 provide an illustration of the bakeries in the City of Tshwane. According to Report Linker (2017), there are over 40 bakeries competing for market share within City of Tshwane. The SA Chamber of Baking (2017) report that the number of in-store bakeries have increased. Almost every supermarket has grown to have its own in-store bakery. An increase of stand-alone retail bakeries has also surfaced, especially the franchised outlets.

However, the increase in the number of in-store and stand-alone bakeries has led to the decline of industrial bakeries. The number of industrial bakers in South Africa has declined to between 60 and 70 in 2017 from a record high of 200 in 1991. Despite the decline of industrial bakeries, they are known to be the most efficient producers of bread and confectioneries (SA Chamber of Baking, 2017). The plant bakeries produce 50 per cent of total production. Its efficiency is also illustrated by its capacity to employ 8 500 people. Hence, the fall of industrial bakery player should be worrisome for both management of industrial bakeries and the government considering its contribution to the economy.

It is therefore upon this background that this current study seeks to assess the state of total quality management and its influence on organizational operations. The next section introduces the concept of total quality management before moving on to look at its evolution since 1926.

2.4 TOTAL QUALITY MANAGEMENT

In a competitive bakery industry, the use of total quality management is critical in ensuring that a competitive advantaged in attained. Total quality management is defined as the systematic quality improvement approach adopted throughout the organization to ensure performance improvement in terms of procurement processes, quality of operational systems, production, customer satisfaction and profitability (Ghrakhani, Rahmati, Farrokhi & Farahmandian, 2013). Provided in this definition is an appreciation of the importance of all components of the supply

chain from inbound to outbound. Thus, it provides the significance of considering quality in terms of raw materials (procurement), transformational processes (operational and production) and outbound (customer satisfaction) as well as the attainment of organizational profits.

In support of the definition of total quality management as provided by Ghrakhani et al. (2013), Al-Damen (2017) adds that total quality management is about the creating a culture that is meant to achieve customer satisfaction. On the other hand, Alamri, Alharthi, Alharthi, Alhabashi and Hasan (2014) advocates for the optimization and integration of business functions as well as processes in order to ensure customer satisfaction.

Total quality management gurus such as Juran (1989) and Crosby (1979) provided their perspective in terms of quality. Crosby (1979) defined quality as conformance to specifications while Juran (1989) expresses quality as fitness for use. The ability of an organization to produce products and services that can be regarded fit for customer use (Crosby, 1979) while at the same time conforming to customer specifications (Juran, 1989), is critical for an organization especially the bakery firm that is faced with enormous competition in the City of Tshwane. Therefore it is important for this current study to thoroughly assess factors affecting total quality management and their influence on organizational operational performance. In the next section, the history of total quality management will be provided. It traces the beginning of total quality management in different parts of the world.

2.4.1 THE HISTORY OF TOTAL QUALITY MANAGEMENT AND ITS EVOLUTION

In this current study, it was important to understand the background of total quality management so as to appreciate the developments that took place since the inception of the quality management concept. Quality management began in 1926 when quality relied on inspection after production. Further tangible developments began emerging from the mid-1950s with Deming (1982) introducing the quality circles approach in the United States of America (USA). The quality circles involved the coordination of small groups of 4 to 15 that would meet to discuss

quality related matters and bring out solutions to solve quality related problems. However, the approach did not receive much attention in the USA so it was regarded as of no impact. Deming (1982) decided to export it to Japan.

After world war two, in July 1950, Edward Deming introduced the statistical quality control (SQC) techniques to the Japanese (Ngambi & Nkemkiafu, 2015). According to Deming (1982) the SQC techniques really had an impact to the Japanese firms. Japanese products became competitive on the world market.

Upon the realization of successful Japanese export products, the USA manufacturers scrambled to adopt quality techniques in their operations so that they could regain competitiveness. The Deming approach began to be recognized in the USA in the late 1970s and early 1980s (Evans, 2011). According to Ngambi and Nkemkiafu (2015), about 90 per cent of the fortune 500 companies began implementing quality circles between 1980 and 1981.

In the 1960s, a quality expert known as Feigenbaum (1960) came up with the concept referred to as total quality control (TQC). Zu, Fredendall and Douglas (2008) added that the TQC was seen as an effective tool to integrate the quality development, quality maintenance and quality improvements throughout different groups in the organization. However, the disadvantage of TQC was that of not including other management ideologies such as people empowerment, team work, supplier and customer relationship development that are in the total quality management philosophy.

According to Malik, Iqbal and Yong (2010), a Japanese quality expert by the name Kaoru Isikawa further shaped the TQC technique into the concept Companywide Quality Control (CWQC). The CWQC was introduced in Japan in 1968, thus ten years after Feigenbaum introduced the TQC. The CWQC emphasized the development, designing, producing, marketing and servicing of products and services at the minimum possible cost while ensuring that customer's needs and wants are addressed (Malik & Khan, 2011). Raja, Bodla and Malik (2011) added that Isikawa insisted on ensuring that all parts of the organization work together to ensure quality throughout the organization. As the evolution continued, total quality

management came into place and it showed collaboration and appreciation for organizational stakeholders such as suppliers, employees, management and the customers. The evolution of quality tools is further elaborated in the next section.

2.4.1.1 The evolution and development of quality management tools

The importance of acknowledging the evolution and development of quality tools have already been established in this study. This section continues with the appreciation of quality tools utilized since the 1920s. As already highlighted, the use of quality tools began in the early twentieth century. According to Ngambi and Nkemkiafu (2015) and Power (2013), quality management utilised mass inspection in the 1920s, statistical sampling in the 1940s, statistical process control in the 1960s and then progressed to improved designs in the 1980s and integrated design and manufacturing in the early 21st century. Figure 2.3 provides a snapshot of how quality management tools have evolved over the years.

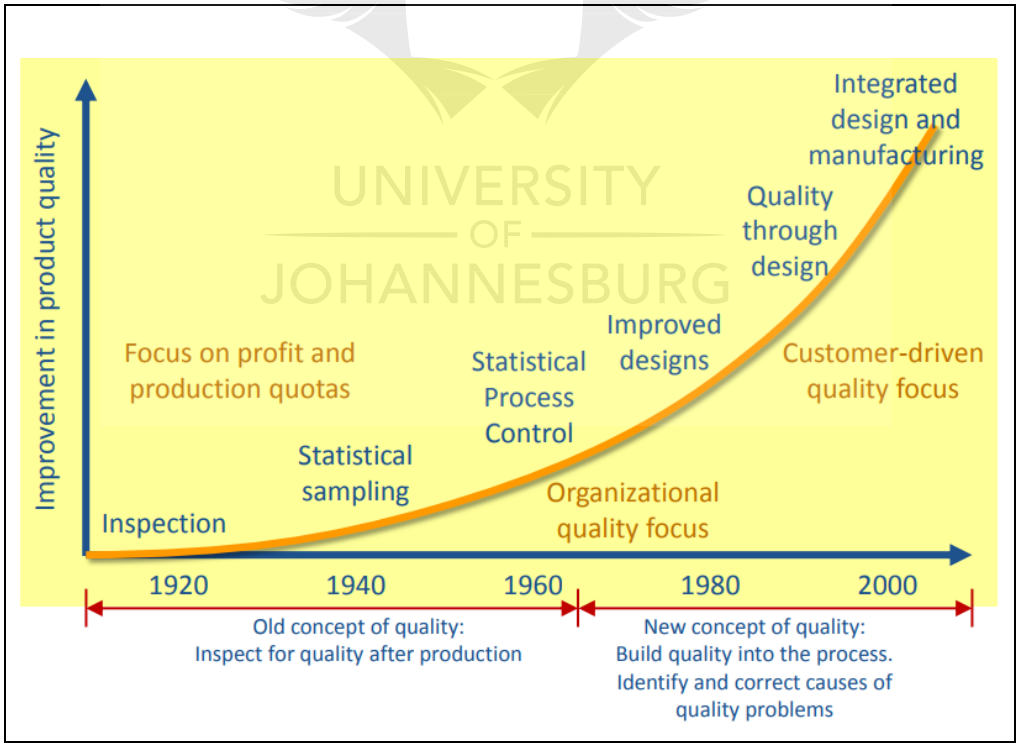

Figure 2.3: The evolution and development of quality management tools

Source: Power (2013)

As illustrated in Figure 2.3, in the early twentieth century quality management was conducted through inspection of systems and processes (Power, 2013). The

approach was a reactive approach rather than proactive since it relied on inspection of processes after production have already taken place. According to Zahari and Zakuan (2016), the statistical sampling approach succeeded the inspection approach. Statistical sampling occurred in the 1940s before it graduated to be known as statistical process control that became popular in the 1960s. These three approaches to quality (inspection, statistical sampling and statistical process control) had three main aspects in common and these were a focus on profits, production quotas and inspection of quality after production (Power, 2013).

As the evolution of quality management continued, new approaches to quality were born after 1960. Power (2013) argues that from 1960 onwards quality management was driven by a focus on organizational quality. According to Kim, Kumar and Kumar (2012) and Evans (2011), organisational quality included the establishment of quality through improved process and product designs. The approach became popular in the 1980s. The quality methodology through improved design gradually changed in the early 21st century to become a customer driven quality focus approach (Power, 2013). The customer driven quality approach was known as the integrated design and manufacturing approach which is also the total quality management applied in today's operations. The next sub-section explain the different total quality management philosophies contributed by different quality authorities.

2.4.2 THE TOTAL QUALITY MANAGEMENT PHILOSOPHIES

The value of total quality management and its applicability in creating a competitive advantage for bakery firm is strengthened by enormous effort that was put by quality management authorities. Power (2013) alluded that quality management gurus who contributed towards effectiveness of total quality management include Juran (1988), Shewhart (1986), Ishikawa (1985), Deming (1982) and Crosby (1979). The work of these authorities is briefly provided in table 2.2 as follows.

Table 2.2: Contributions by quality management gurus

Source: Power (2013)

Name	Contribution
Walter A. Shewhart	Understanding of process variability and developed concept of statistical control charts
W. Edwards Deming	Stressed management's responsibility for quality and developed 14 points to guide companies in quality improvement
Joseph M. Juran	Defined quality as fitness for use and developed the concept of cost of quality
Armand V. Feigenbaum	Introduced the concept of total quality control
Philip B. Crosby	Introduced the concept of quality is free and zero defects
Kaoru Ishikawa	Developed the cause and effect diagrams and identified the concept of internal customer.
Genichi Taguchi	Focused on product design quality and developed the loss function

2.4.2.1 The Shewhart Philosophy

The quality control charts were developed by Walter A. Shewhart. According to Shewhart (1986), variability exist in all manufacturing processes. Shewhart (1986) and Power (2013) added that the quality control philosophy led to the development of quality control charts and these were utilised to identify the cause of variability in manufacturing. According to Shewhart (1986), variability in manufacturing could be as a result of randomness or due to a specific causes for example knowledge and experience of operators as well as poor equipment.

2.4.2.2 The Deming Philosophy

The Deming philosophy propagated by E. Edward Deming was so critical in the transformation of quality management across different sectors. According to Evans (2011), Deming developed the system of profound knowledge. Almansour (2015) added that the system of profound knowledge consists of four points that are system appreciation, knowledge variation, knowledge theory and psychology knowledge. These are briefly described as follows in the context of the bakery industry.

i) Appreciation of systems

According to Power (2013) and Evans (2011), the system appreciation states that the bakery firm needs to fully understand its own processes and systems. It is important for both management and the employees to have a thorough understanding of how processes are arranged in the bakery firm. The competitiveness of an organisation is gained through fully understand factors that influences processes and systems of the organization, hence the need for this current study.

ii) Knowledge of variation

The knowledge of variation refers to the ability of a firm to comprehend its own variations and the reasons why such disparities occur. Measurement of systems and processes enable the organization to tell the existence of variations. Alamri et al. (2014) allude that statistical sampling tools are critical in the measurements of the variations as well as understanding their causes. Thus it is also important for a bakery firm to know factors that affect total quality management since they result in variations in processes and systems of the firm.

iii) Theory of knowledge

Having an understanding of theory that can be known is also another way of gaining competitive advantage (Criado & Calvo-Mora, 2009). It is therefore important for the bakery firm to have the theoretical knowledge of its operations. Understanding of the organizational theoretical knowledge provides full ability to control quality of operations and systems.

iv) Knowledge of psychology

The concepts of human nature is important in creating efficiency and effectiveness in the bakery organization. According to Goetsch and Davis (2010), the knowledge of psychology include an understanding of factors that affect employees. In addition, Gruman, and Saks (2011) state that knowledge of psychology refers to

issues such as employee empowerment, training and motivation. Knowledge of such factors is critical in achieving organization success. Concepts of human nature are also essential in developing total quality management systems.

Apart from the four points given in the theory of profound knowledge, Deming offered 14 management principles. These principles are given in Table 2.3 as follows.

Table 2.3: The 14 principles of management
Source: Evans (2011) and Deming (1982)

Principles of management		Description
1.	Management commitment	It refers to the overall obligation of the managers to create constant purpose for a continued improvement of product and service quality.
2.	Learning the new philosophies	It embraces the ability of the organization to learn new ways of conducting work.
3.	Understanding inspection	Inspection need to be carried out carefully so that information can be gathered.
4.	Avoid price tag decisions	This means that the organization should not only make its decision on the bases of cost. The use of inferior material and components result in further costs in future.
5.	Improve constantly	Continuous improvement is regarded a tool to ensure survival and in a highly competitive industry.
6.	Institute training	Training is a necessary tool to create an effective workforce with high morale.
7.	Institute leadership	The organizational leaders need to provide the organization with direction, guidance, coaching as well as promotion of teamwork.
8.	Drive out fear	It is important that all factors that leads to fear are driven out of the organization. The types of fear can include fear of failure, fear of the unknown and fear for change.
9.	Optimise team effort	It is important that employees work as a team as barriers between individuals and departments lead to poor quality products and services leading to an inability to meet customer needs.

10.	Eliminate exhortations	It has to be noted that motivation is better achieved through trust and good leadership than slogans.
11.	Eliminate quotas and management by objectives	While goals are important, numerical goals set without a specification of the methods that can be used to reach the goals leads to frustration and resentment.
12.	Remove barriers to pride in workmanship	The system of regarding employees as a commodity need to be avoided. Workers should not be given monotonous work, subjected to inferior tools and supervisors who do not understand the work.
13.	Institute Education	Firms have the responsibility to develop the value and self-worth of the employees.
14.	Take action	Cultural change in the organization begins with top management and the inclusion of employees.

The management principles that were put forward by Deming (1982) signifies that the factors that are critical in ensuring a total quality management system in the organization. Hence, this sub-section is important towards a development of a conceptual framework in this study. The coming sub-sections will provide further insight into philosophies of quality management.

2.4.2.3 The Juran Philosophy

The Juran philosophy is based on a concept called the trilogy of quality (Bell & Omachonu, 2011; Juran, 1989). According to Juran (1989), components within the trilogy of quality include quality planning, quality improvement and quality control. Bell (2010) states that quality planning refers to the process of formulating goals while understanding both internal and external environment.

The concept of quality improvement was further explained by Fotopoulos and Psomas (2010) as the ability of an organization to break through optimum performance achieved through the use of right employees, ability to diagnose causes of poor performance and developing remedies for poor performance. Quality control on the other hand was clarified by Hayati, Ali and Idris (2012) as the process for meeting quality goals during operations. Marin and Ruiz-Olalla (2011) further state that quality control involves determination of what to control thus an understanding of units of measurements so that data may be objectively evaluated.

The aspects brought by Juran (1989) were also instrumental in building a total quality management conceptual framework.

2.4.2.4 Feigenbaum Philosophy

The Feigenbaum philosophy came with the concept of total quality control that later became known as the total quality management (Zehir, Ertosunb, Zehir & Muceldilli, 2012). Feigenbaum philosophy conceptualized total quality management as a system to integrate quality development, quality maintenance and quality improvement. However, as stated by Sadikoglu and Olcay (2014) and already mentioned in the evolution of total quality management section in this study, Feigenbaum's philosophy lacked management philosophies such as people empowerment, team work and supplier development. According to Goetsch and Davis (2010), these aspects that were lacking within the total quality control philosophy were fully coordinated in the total quality management philosophy.

2.4.2.5 The Crosby Philosophy

The Crosby philosophy emphasizes five major aspects as alluded by Evans (2011). According to Crosby (1979), the first aspect within the Crosby philosophy is that quality means conformance to requirements and not elegance. Jaafreh and Al-abedallat (2013) argue that the second point made in the Crosby philosophy is that there is no such thing as quality problem since quality problems should be identified by those responsible for creating the problems. Furthermore, Evans (2011) added that there are accounting, manufacturing, design and front desk problems; and all emanate from functional departments.

The third point made by Crosby (1979) is that there is no such thing as the economies of quality because it is always cheaper to do the right first time. In this point is emphasized that the organization should always ensure that the right processes and systems are in place for quality to be achieved. According to Evans (2011), the fourth aspect made by the Crosby philosophy is that the only measurement is the cost of quality. Ngambi and Nkemkiafu (2015) further state that the cost of quality is the expense of non-conformance. The fifth point is that the

only performance standard is zero defects as elaborated by Evans (2011). These five points assist in elaborating towards factors that affect the achievement of a total quality management programme within the baking firm.

2.4.2.6 The Ishikawa Philosophy

The Ishikawa philosophy is best known as the cause and effect quality approach (Evans, 2011). Power (2013) also states that the Ishikawa is illustrated through the fish bone diagrams. According to Evans (2011), the Ishikawa philosophy is illustrated through the cause and effect since its main purpose is to find out the main reasons leading to the occurrence of problems. It also regarded to as a simplified statistical technique for quality control. Zahari and Zakuan (2016) allude that the Ishikawa philosophy emphasizes the implementation of company-wide quality control, quality circles and the company's shared vision.

Kim et al. (2012) state that quality does not only mean the quality of products but also the after sales service, quality of management and the treatment provided to employees. Ishikawa (1985) provided a set of causes of quality problems and these are described as 8 M's, 8 P's and 4 S's. According to Power (2013) and Ishikawa (1985), the 8 M's in manufacturing include the machine, method, materials, man power, mother-nature, measurement, maintenance and management. Power (2013) also state that the 8 P's in service refers to the price, promotion, process, place, policies, procedures and product. Lastly, the 4 S's in service include the surroundings, suppliers, systems and the skills (Power, 2013). The cause and effect is also an important philosophy is this study due to its contribution towards factors that affect total quality management in a bakery firm.

2.4.2.7 The Taguchi philosophy

The Taguchi philosophy is made up of three elements of quality (Power, 2013). The first element explains the loss that occurs due to poor quality. According to Phan, Abdallah and Matsui (2011), poor quality of products and services result in the creation of loss to both the organization and the society. Power (2013) added that while the organisation suffers from financial loss the society suffers from inferior

products. The second element is alluded by Parast and Adams (2012) as the off-line control and it states that it is important to design products that will be robust even outside the parameters of the engineers. In other words, it is important that the designed products are robust not only to the eyes of the designers but also to the customers and the society. The third element emphasizes the importance of innovations in the statistical design of products and processes. Thus, innovations need to be able to create value for the organization and the customers.

The philosophies that are provided in this sub-section are critical towards the identification of factors that affect total quality management. The philosophies include the Shewhart, Deming, Juran, Feigenbaum, Crosby, Ishikawa and Taguchi (Evans, 2011). This are quite instrumental in their contribution of factors affecting total quality management as presented in the next section.

2.4.3 FACTORS LEADING TO TOTAL QUALITY MANAGEMENT

In order to ensure a performance improvement in terms of procurement processes, quality of operational systems, production, customer satisfaction and profitability for a bakery firm in a competitive environment, the adoption of total quality management is needed (Ghrakhani, Rahmati, Farrokhi & Farahmandian, 2013). Quality management specialists such as Sadikoglu and Olcay (2014) advocate for the adoption of a total quality management approach which is achieved through factors such as leadership, knowledge management, suppliers, customer focus, employee involvement and process management. The total quality management factors are further explained in the context of a bakery firm in the next sub-sections.

2.4.3.1 Leadership

Leadership is defined by Al-Damen (2017) as the degree of acceptance of quality responsibility by top management and participation in quality improvement efforts as well as being able to monitor the process. Zahari and Zakuan (2016) also allude that a leader should understand the art of delegation, creation of employee ownership and responsibility. In addition, leaders are responsible for the communication of a clear vision, goals, objectives, values and policies of the

organization (Jaafreh & Al-abedallat, 2013). According to Criado and Calvo-Mora (2009), it is also the responsibility of leaders to create a supportive culture within the organization. Leadership is therefore an important attribute for total quality management within a bakery firm.

2.4.3.2 Knowledge management

Creation of a knowledgeable workforce is an important component of ensuring total quality management in the bakery firm. Zu, Fredendall and Gouglas (2008) argue that the organization should ensure timeously, reliable, accurate and consistent information to the employees. Ensuring that employees are knowledgeable is critical in ensuring effectiveness and efficiency in carrying of duties and responsibilities. Thus, according to Al-Damen (2017) knowledge management leads to a reduction in errors and mistakes in the processes.

2.4.3.3 Supplier management

According to Phan et al. (2011), supplier management involve the reduction and streamlining of a supplier base so as to management supplier relationship and develop a strategic alliance. Kim et al. (2012) also add that supplier management is done to ensure that organizational expectations are met. Authors in quality management (Evans, 2011; Phan et al. 2011) argue that the organisation should rely on a small group of suppliers while valuing a long term relationship which including taking into consideration supplier input. Good supplier management is achieved when suppliers are made to be aware of the organisation's vision.

2.4.3.4 Customer focus

The bakery firm should be in a position to create products and services that meet the needs and wants of its customers. According to Khanna, Sharma and Laroiya (2011), it is important that production is arranged according to the requirements of the customers. Joiner (2007) further states that a customer focus approach can be achieved when the organization make an effort to understand customer needs through taking customer complaints seriously. Stock, McFadden and Gowen (2007)

added that customers should be involved in the product design and development process. According to Kumar (2011), dedicated channels (i.e. telephone number, e-mail) should be put in place for customers to be able to contact the organization without difficult.

2.4.3.5 Employee involvement

The bakery firm should ensure that its employees are involved throughout its operations. According to Zahari and Zakuan (2016), employee involvement is achieved through the recognition of employee performance. Jaafreh and Al-abedallat (2013) also added that the organization shows its commitment to the employees through the provision of adequate training. In addition, Almansour (2015) states that it is important for the organization to empower its employees to make decisions.

2.4.3.6 Process management

The ability to effectively management organizational processes is critical in ensuring total quality management. According to Ngambi and Nkemkiafu (2015), process management includes ensuring that the machinery and methods of production utilised are up to date. Sadikoglu and Olcay (2014) further add that process management involves the utilization of material that is of quality as well as ensuring that people who are utilised in production department are well skilled and experienced.

An assessment of factors affecting total quality management and the proper utilization of such knowledge is a strategy to ensure operational performance. The next section will look at operational performance since it the desired outcome of instituting a total quality management programme. Operational performance is also an important sub-construct within this current that seeks to understand total quality management and operational performance in a bakery firm.

2.5 OPERATIONAL PERFORMANCE

The achievement of operational performance should be the objective of every organization including a bakery firm. Quality management specialists including Almansour (2015); and Jaafreh and Al-abedallat (2013) argue that total quality management is one of the useful tools to achieve customer satisfaction, production of quality products and services, increased production capacity, employee performance and quality work life. Operational performance can further be explained in the next sub-sections as follows:

2.5.1 Efficiency of production systems and process

The efficiency of production systems and process is an important aspect that reflect operational performance. According to Zu et al. (2008), total quality management enables the organization to constantly monitor the performance of its machinery such that breakdowns do not occur. Breakdown of machinery leads to interruption of the production process and it is undesirable as it leads to employee demotivation.

2.5.2 Employee motivation

Employee motivation is a sign for operational performance. When operations are performing well they result in improved employee morale, motivated and highly engaged employees. Mackelprang, Jayaram and Xu (2012) argue that employee motivation leads to increased productivity. Thus operational performance need to be the focus of the bakery firm since it leads to improved employee motivation.

2.5.3 Increased productivity

Increased productivity refers to an increase in the quality and number of units produced. According to Zahari and Zakuan (2016) the production of products that meet the quantity and quality requirements of customers is an important aspect to entrench in every organizational operations. It is therefore critical that operations of organisations are streamlined to produce products and services in the right quality and quality according to customer expectations.

2.5.4 Customer satisfaction

It is important that the organization is able to meet the needs and wants of its customers. Sadikoglu and Zehir (2010) state that effective and efficient operations lead to customer satisfaction. It is also important to realize that customer satisfaction transforms to a health organizational financial performance.

2.5.5 Increased financial performance

The performance attained from the operations of an organization is critical in producing health financial performance. According to Khanna et al. (2011), effective and efficient organizational operations result in the reduction of operational cost, increased sales level, improved sales margins and profits. It is therefore critical for an organization to consider factors that affect total quality management since it's a method to achieve operational performance.

This section presented the aspects that determine operational performance. The next section will look at empirical evidence related to factors affecting total quality management and operational performance. Empirical evidence assisted in identifying the possible research gaps that triggered this current research.

2.6 FACTORS AFFECTING TOTAL QUALITY MANAGEMENT, OPERATIONAL PERFORMANCE AND IDENTIFYING RESEARCH GAPS

With numerous studies have been conducted over the past years related to factors that affect total quality management and operational performance. These include studies by quality management authors such as Al-Damen (2017), Zahari and Zakuan (2016), Almansour (2015) and Alamri et al. (2014). The studies indicated a significant relationship between total quality management and operational performance. However, these studies did not fully address certain gaps critical gaps as indicated in this present study.

The study carried out by Zahari and Zakuan (2016) found that total quality management attributes such as leadership that include delegation, creation of employee ownership and responsibility is critical improving operational performance. The study further found a positive relationship to be existing between leadership and operational performance. On the other hand, Jaafreh and Al-abedallat (2013) found that similar leadership factors such as clear vision, goals, objectives, values and policies of the organization result in a total quality management system. However, it was found that employees had a negative perception towards these leadership attributes. It is therefore important for this study to assess the perceptions of employees in different environment, in this case a bakery firm so as find out the opinions of employees regarding leadership factors that are also considered important in creating a total quality management environment.

Considering that a positive relationship was found between leadership factors such as delegation, creation of employee ownership and responsibility, this present study seek to test similar factors but on a different environment. Hence, it is therefore upon this background that a hypothesis 1 is tested as follows:

H_1: There is a positive relationship between leadership and the overall operations performance of a bakery firm.

In a recent study carried out by Al-Damen (2017) it was found that a knowledgeable workforce is an important component of ensuring total quality management. This study echoed the results of the study carried out by Zu, Fredendall and Gouglas (2008) that found that factors such as timeously, reliable, accurate and consistent information provided to the employees leads to a total quality management organisation. However, these two studies did not test the relationship between knowledge factors and operational performance. This study seek to close this gap in the body of knowledge. It is therefore an opportunity and hypotheses 2 in this study is presented as:

H_2: There is a positive relationship between knowledge management and the overall operations performance of a bakery firm.

Kim et al. (2012) and Phan et al. (2011) both carried out similar studies but with different dependent variables. Kim et al. (2012) tested the relationship between total quality management such as supplier management and innovation, while Phan et al. (2011) tested the relationship between quality management and competitive performance. This study seeks to understand the relationship between total quality management factor (supplier management) and operational performance. It is therefore upon this background that hypotheses 3 is presented as:

H_3: There is a positive relationship between supplier management and the overall operations performance of a bakery firm.

A study conducted by Khanna, Sharma and Laroiya (2011) found that the adoption of a customer focus approach is instrumental towards a development of a total quality management system. The study also found a positive relationship to be existing between customer focus and operational performance. It is however important to note that these findings were based in India within the manufacturing firms. In this current study the focus in on the South African bakery based in the City of Tshwane. Considering a difference that can occur between India and South Africa, it is important to carry out this study so as to find out the relationship between customer focus and operational performance. It is therefore upon this background that hypotheses 4 is given as:

H_4: There is a positive relationship between customer focus and the overall operations performance of a bakery firm.

A study carried out by Zahari and Zakuan (2016) in the Malaysian manufacturing firms it was found that the involvement of employees is critical in creating a total quality management system. A research by Almansour (2015) also found that employee involvement is critical towards a development of a total quality management system. Since these studies were not conducted in South Africa, specifically within the City of Tshwane, it is therefore important to carry out this current study and establish the relationship between employee involvement and operational performance. Hypotheses 5 is given as:

H_5: There is a positive relationship between employee involvement and the overall operations performance of a bakery firm.

Ngambi and Nkemkiafu (2015)'s study found that the ability of an organization to effectively management organizational processes is critical in ensuring total quality management and organizational performance. Sadikoglu and Olcay (2014) further found that process management through the utilization of material that is of quality and utilization of well skilled employees result in an improved total quality management status of the organization. Considering that these studies were carried out to test the relationship between total quality management and organizational performance, this current study zoom close to the relationship between total quality management and operational performance. It is therefore upon this background that this current study test hypotheses 6 as:

H_6: There is a positive relationship between process management and the overall operations performance of a bakery firm.

Significant findings were brought forward by studies that were carried out by different authors in different regions. This current study identified the existence of gaps and these were explored in this study. The next section looks at the study problem statement.

2.7 THE PROBLEM STATEMENT

As noted earlier in the background of the study, operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts has led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence operations at a bakery firm in the City of Tshwane in South Africa.

2.8 THE RESEARCH QUESTION

To what extend do employees' perception of total quality management influence operational performance at a bakery firm in the City of Tshwane?

2.9 CONCLUSION

This chapter provides the background of the study as well as the related literature review. The literature review provided in this chapter starts from a much broad level touching on the beginning of quality management and the evolution that was involved. The build-up of literature resumes with a theoretical approach then transforms to empirical literature review. The justification of the study is provided throughout the literature review.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 CHAPTER OVERVIEW

A discussion of literature relevant to this present study has been exhausted in the previous chapter. It necessitated the identification of a research and development of the conceptual framework, research questions, study objectives and hypotheses. This present chapter described the research methodology that was utilised to operationalize the research objectives, test hypotheses and answer the research question. This chapter justifies the research methodology that was utilised by this present study. Apart from the justification of the methodology, it provides an explanation of the sampling strategy that was employed in the research. The mechanism used to ensure validity and reliability of the data collection tool is also explained.

3.2 INTRODUCTION

As previously noted, the discussion of literature that is theoretical and empirical in nature led to the development of the research gap. Thus from the research gap, a conceptual framework is stipulated. The research gap identified was with respect to employees' perceptions towards total quality management and its influence towards operational performance at a bakery firm. The next section explained the research paradigm that was utilised in this study.

3.3 THE RESEARCH PARADIGM

In this particular research, it was made sense to make use of positivism research paradigm. This was due to the advantages that comes with the approach. The use of positivism is supported by authors including Malhotra (2010:46) who states that within the positivist approach the role of the researcher is limited to observation of phenomena. The researcher does not alter the research environment but his or her role is only limited to that of data collection and interpretation of results that are numerical and quantifiable (Blumberg, Cooper & Schindler, 2011:55).

It was meaningful for the researcher to make use of positivism approach given that the research was quantitative in nature. Saunders et al. (2012) and Malhotra and Birks (2007:87) advises that positivism allow the collection of data that can be subjected to statistical analysis. It was therefore critical to utilise positivism that allowed the procession to statistical analysis such as mean, standard deviation, correlation and regression analysis.

In order for this research to make sense it was critical that the researcher to rely on the respondents' past experience. Relying on the respondents' past experience made it possible for the researcher to fully understand the research construct (total quality management). According to Stangor (2011:86), positivists advocate the use of respondents' past experience to understand the research phenomena. Positivism was therefore utilised since it allowed the research to make conclusions out of the respondents' past experience.

In addition, the use of positivism approach was regarded free from the researcher's emotional interference. It was therefore an advantage to make use of positivism approach that did not provide an opportunity to the researcher's emotions to interfere with the findings (Saunders et al., 2012:71). Respondents provide feedback objectively without being manipulated by the feelings of the researcher when the positivism approach is utilised.

Through the positivism research paradigm data was collected. In particular, the descriptive research design was utilised to allow the collection of data. Self-completion questionnaires were utilised such that the responses could be subjected to quantitative statistical analysis. The next section justifies the use of quantitative research.

3.4 MOTIVATION FOR QUANTITATIVE RESEARCH

Quantitative is a term that refers to numbers. Quantitative research design is therefore an approach that makes use of numerical data to make meaning out of the research (Saunders et al., 2012:89). According to Malhotra (2010:67), in the

quantitative approach the responses are numerically coded so that suitable analysis can be made. Taking into considering Malhotra's (2010:67) contribution, the most appropriate analysis in this research ranged from simple to more complex quantitative analysis, for example mean, standard deviation, correlation and regression. Hence, quantitative research design was the most appropriate research method to utilise.

Malhotra (2010:71) states that quantitative research design is mostly suitable for studies that take the positivism research paradigm. In line with Malhotra (2010:71), this present research made use of quantitative research design because of the nature of research paradigm that was positivism. Apart from the nature of the research paradigm, quantitative research design is suitable for highly structured data collection (Saunders et al., 2012:81). The method utilised to collect data in this research was a highly structured questionnaire.

Quantitative research design is also most suitable for a research that tests the relationship between variables. In this research, the researcher seeks to understand the relationship between total quality management factors and operational performance at a bakery firm in the City of Tshwane. It was quite suitable to utilise correlation and regression approach which is quantitative in nature. Correlation and regression analysis are cross sectional quantitative research methods that allow the measurement of the relationship between two or more variables.

Quantitative research designs are known to work for researches that do not the alteration of the research environment. In this research there was no alteration of the research environment that was needed. The research only sought to understand employees' perception of total quality management and its influence towards operational performance.

3.5 CROSS SECTIONAL DESCRIPTIVE DESIGN

In consideration of the condition that this research was quantitative in nature it was appropriate to utilise a cross sectional descriptive research design. Cross sectional descriptive researches allows the collection of huge data that is needed for

quantitative research to take place. In this study meaning could be drawn through understanding the factors leading to total quality management at a bakery firm. It was therefore important to make use of descriptive research design. Apart from the advantage of collecting huge data, it was also appropriate to utilise a descriptive research design since it allows the description of the research phenomena involving total quality management and operational performance at the bakery firm.

This research was interested in assessing employees' perception of total quality management and how it influences the operational performance of a bakery firm. This was meant to assist the management of the bakery firm to come up with strategies for improving the effectiveness and efficiency within the operations of the firm. In order to achieve the objectives it was appropriate to make use of descriptive research design that allows a complete observation of the behaviour of respondents and subject the responses to statistical analysis (Stangor, 2011:87).

3.5.1 JUSTIFICATION OF THE RESEARCH DESIGN

It is imperative to remember that descriptive research design is much interested in studying phenomena related to social life. In this research, the focus was on employees' feelings towards the state of total quality management and how it is influential towards operational performance. Researchers such as Malhotra and Birks (2007:87) and Babbie and Mouton (2006:66) went on to state that descriptive research design is meant to understand the characteristics of the phenomena being studied. In order to further understand the characteristics of the phenomena, descriptive research supports the formulation of research questions and the hypotheses thereof. In this research, the research question and the hypotheses were tested through a large sample size of employees working in a bakery firm so as to understand the phenomena related to total quality management and operational performance.

A descriptive research design that was adopted in this case is more related to behavioural research. According to Stangor (2011:87), the fundamental principle of behavioural research is in understanding the feelings, behaviour and thoughts of the research respondents. In the case of this research, the research aimed at

understanding the thoughts and feelings of respondents who were employees of the bakery firm. In order to come up with meaning within this research, it was important to consider the feelings of the employees towards total quality management considering that they were constantly in touch with the activities of the firm. Hence, the research gave a snap shot of the feelings of the employees towards the phenomena and the research took the form of a descriptive research design.

3.5.2 JUSTIFICATION FOR SURVEY TECHNIQUE

The use of a survey was found to be appropriate. Surveys are suitable for researches that follows a positivism paradigm. This research adopted the positivism research paradigm and took a descriptive research design. Accrording to Gunduz et al. (2013:133), descriptive research design are also suitable for survey techniques. The use of a survey allows the researcher to gather huge quantity of data that is also suitable for a descriptive sort of research (Kikwasi, 2012:52). In this regard, interviews could not be permisable due to their inability to collect data from a large sample size. A large sample size was needed considering that the positivism paradigm and the descriptive research design were chosen as research mechanisms. It was therefore not suitable to utilise an interviews but a survey that permits the collection of large data with a structured quaestionnaire. The sample size in this research was 110 and data was collected with the use of a survey which made it easy to carry out the process.

3.6 POPULATION OF INTEREST

Given that the research was concerned with assessing the perceptions of employees towards total quality management and its influence on operational performance at a bakery firm in the City of Tshwane in South Africa, 130 employees working for the bakery firm made up the total population of the study. In order to give clarification on the population of interest, further description is given in terms of the time, sampling units and elements utilised in this study as advised by Malhotra (2010). An explanation of the sampling units, time of the study and elements is provided in the next section.

i) **The elements** in this research were employees working at a bakery firm within the City of Tshwane, South Africa. Employees were chosen as they were directly involved in the operational functions at the bakery firm in the City of Tshwane in South Africa.

ii) **Sampling unit** that was utilised in this study was convenience. Convenience sampling was found suitable since the required study respondents were employees of one bakery firm. It was also chosen for its advantage in easily collecting data without compromising its meaning (Calder et al., 1981:197).

iii) **The time** in which data was collected was September 2017. The data was collected over a month's period.

3.6.1 Sampling design and techniques

With the realisation of the common problems that affect most postgraduate studies including masters and doctoral studies such as limitation of resources (i.e. time and money), it was not feasible to collect data from every unit of the total population. This situation demanded the researcher to consider a representative sample of the total population. The representative sample was made up a convenient sample of employees working at the bakery firm in the City of Tshwane.

A representation was sought out through a convenient sample of employees who were working at the bakery firm in the City of Tshwane during the time of data collection. Thus, a convenient sampling method was utilised at the bakery firm in this study. The use of convenient sampling was regarded the most suitable especially for respondents sharing the same characteristics due their occupation within one firm (Calder et al., 1981:197).

3.6.2 Sample size and response rate determination

In the determination of the right sample size, three factors were considered. These included i) a minimum sample size with a capability of meaningful data analysis, ii) benchmarking with past researches and iii) availability of a suitable budget that

allows collection of sufficient data. These factors are further explained in the table 3.1 next.

Table 3.1: The determination of sample size

	Sample size criteria	**Explanation**
i)	The least sample size for meaningful data analysis	In a quantitative research, the minimum sample size need to be at least 100 for factor analysis to be meaningful (Dancey & Reidy, 2002:76). In addition to this condition at a minimum of 100 respondents, authors such as Field further prescribed that a minimum sample size is determined by the number of items (questions) in the research instrument multiply by 5. It is interesting to note that both these conditions were well met in this study.
ii)	Past research sample sizes	Another important consideration is the minimum sample size utilised in past similar researches. This can be regarded as the benchmarking method. In this study Al-Damen (2017) who utilised 103 respondents served as a point of benchmark.
iii)	Resource constraints	As already mentioned in section 3.6.1 first paragraph, resources are a huge challenge in most masters and doctoral studies. In this study, the same challenge was imposed and the researcher could only collect usable data from 110 respondents.

The conditions set in table 3.1 were satisfied. They allowed the collection of data from 110 respondents. The survey method utilised allowed the distribution of questionnaires to 110 employees at a bakery firm in the City of Tshwane. The 110 usable questionnaires resulted in the achievement of an 84 per cent response rate. The high response rate was attributed by the format of questionnaire that was well structured such that respondents could easily understand the research questions (Sitzia & Wood, 1998:73). The high response rate was also as a result of the pilot study that assisted in developing a tool that was understandable.

3.7 MESUREMENT ITEMS

The nature of this research that involved testing of relationship between two factors needed the existence of dependant and independent sub-constructs. These sub-constructs were only suitable for answering the research question and test the hypotheses. The summary of sub-constructs utilised is provided in table 3.2 as follows (Southard, 2006):

Table 3.2: Constructs investigated in this study

Sub-construct	Type of sub-construct	Measurement	Number of items
Leadership	Independent	Continuous	5
Knowledge management	Independent	Continuous	5
Suppliers	Independent	Continuous	4
Customer focus	Independent	Continuous	4
Employee involvement	Independent	Continuous	4
Process management	Independent	Continuous	5
Operational performance	Dependent	Continuous	4
Total continuous constructs			31

Source: Sadikoglu and Olcay (2014)

The dependent (operational performance) sub-construct as listed was tested with six independent sub-constructs (Leadership, knowledge management, suppliers, customer focus, employee involvement, process management), since the study sought to assess employees' perception of total quality management and operational performance at bakery firm.

3.8 QUESTIONNAIRE DEVELOPMENT

A questionnaire was chosen as the most appropriate method of data collection. The choice of a questionnaire was influenced by the decision to utilise a descriptive and quantitative research design. Authors including Mouton (2001:113) and Taylor-Powell (1998:78) state that questionnaire are suitable for survey studies. In addition, the Industrial Research Institute (2010:116) and Walliman (2006:117) allude that the use of questionnaire has several advantages. These are briefly illustrated as follows: i) They are quite economical to utilise, ii) They also bring uniformity among researchers and their assistance, iii) There is no personal influence that is permitted from a researcher to interfere with the feedback given by the respondents, iv) Respondents have enough time to think about their responses and makes the research tool to obtain facts, v) It is also presented in a much structured format and this is important in enhancing the respondents' level of understanding, vi) The structure of the tool is also advantageous as it enables the researcher to easily proceed with data analysis.

The research tool utilised in this research (questionnaire) was structured according to the constructs of the study. Section A, had components related to demographic information of the respondents. In the second section, that's in B, there were constructs related to aspects of total quality management and operational performance. Total quality management questions were sub-divided and grouped together while operational performance was provided as the last sub-section. According to Zikmund (2003), the questionnaire was also meant to achieve four broad goals as follows:

i) It was meant to be reliable and validity. Reliability and validity of the research instrument was seen as an important aspect that would allow the questionnaire to consistent and accurate when it is utilised. Thus reliability and validity was achieved through cronbach's alpha and factor analysis.

ii) The full participation of the respondents was also of paramount importance. In order to achieve a higher response rate, it was important to carry out a pilot study. This made it easy to create a research tool that is easily understood.

iii) The research tool had to be in such a way that it encourages easily collection of data, analysis and interpretation. This was achieved due to the good structure of the questionnaire.

iv) It was also important to have a research tool that minimised measurement errors. Minimisation of measurement errors was important for the sake of obtaining accurate results. In addition, it was therefore important to decide the sample size using Raosoft's sample size calculator and obtain data from a large sample size.

3.8.1 Pilot study and pretesting the questionnaire

The research made use of a pilot study in order to finalise the suitability of the research instrument. Before the questionnaire was rolled out for final data collection, ten respondents were utilised to give responses to the questionnaire. The purpose of the exercise was to gauge the suitability of the research instrument before it is taken to the field. Respondents were given 10 to 15 minutes to provide their responses. As the process was taking place, the researcher encouraged respondents to raise queries towards those questions that lacked clarity. The identified questions were rephrased in a way that was easy to understand. The questionnaire was also tested for its sequencing to ensure that it was not confusing to the respondents. The questionnaire was tested over again until it was finalised.

The pilot study was an important step to take that resulted in creation of a questionnaire that could be well understood and obtain data that is reliable and accurate (Bowden et al., 2002:71). The questionnaire was adjusted according to the recommendations of the respondents. It was sent to the language editor for further corrections before it was utilised to collect data related to employees' perceptions of total quality management and operational performance.

The data collection tool that was utilised in this study had two sections, thus A and B. The questionnaire adapted a tool from Sadikoglu and Olcay (2014). The tool was further adjusted to suit the needs of this study. The full description of the questionnaire is provided in table 3.3.

Table 3.3: Data collection instrument

Section	Questions	Source	Hypotheses
A	Demographics	Developed for the study	
B	Leadership	Sadikoglu and Olcay (2014)	H_1
	Knowledge management	Sadikoglu and Olcay (2014)	H_2
	Suppliers	Sadikoglu and Olcay (2014)	H_3
	Customer focus	Sadikoglu and Olcay (2014)	H_4
	Employee involvement	Sadikoglu and Olcay (2014)	H_5
	Process management	Sadikoglu and Olcay (2014)	H_6
	Operational performance	Sadikoglu and Olcay (2014)	H_1 H_2 H_3 H_4 H_5 H_6

Source: Researcher's own construct

The questionnaire had two sections as already highlighted. Section A, had demographic related questions while section B was made of questions related to the sub-constructs of the study. The responses in section B were in the form of a likert scale thus from strongly agree to strongly disagree. The questionnaire was accompanied by an informed consent leaflet that provided the respondents with the information about the study.

3.9 DATA ANALYSIS

In order to operationalise the study, SPSS V24 was utilised. Specific methods related to both descriptive and inferential analyses were put to use. These techniques involved mean values, standard deviation, reliability and factor

analyses, correlation and regression analyses. The data analyses methods are further explained as follws:

- *Descriptive statistics* was utilised to explain the demographics of the sample. Apart from the demographics, descriptive analysis was also utilised to calculate mean values and standard deviation that was important in operationalizing objective 1.
- *Factor analysis* was useful in determining the validity of the research instrument.
- *Reliability analysis* was put to use in establishing the reliability of the research instrument.
- *Correlation and regression* were utilised in order to determine the relationship between independent variable (total quality management) and dependent variable (operational performance) as well as testing the proposed hypotheses.

3.10 CONCLUSION

In this chapter, the research methodology that was utilised has been explained. The chapter clarified the use of positivism as the research paradigm. Further explanation has been given regarding the utilisation of descriptive research design and quantitative research method. Consistently with the research methods utilised, the use of a survey is also justified. The process that was used to develop the questionnaire is provided and this includes the methods that were utilised to ensure reliability and validity of the questionnaire. Lastly, the researcher provided the different quantitative methods that were used to analyse the data. The next chapter provides findings from analysis of data.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 CHAPTER OVERVIEW

This chapter will provide the data analyses that was carried out for this study. The chapter commences with the analysis on the demographic profile of the study sample respondents. Secondly, the chapter migrates to provide the analysis conducted on the perception of employees on the state of total quality management. Thirdly, the results on reliability and validity analyses is provided before inferential analysis is started. Fourthly, major inferential analyses are conducted through correlation and regression analyses respectively. Finally, the chapter closes with a conclusion to summary the contents of the chapter.

4.2 DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

In this section, the researcher will provide analysis on the demographic profile of the respondents. The analysis will be based on the section A of the questionnaire. Thus section A was made of questions related to age, gender, education, experience level and the work department. Table 4.1 provides a brief description of the demographic picture among the sample respondents.

Table 4.1: Demographic profile of respondents (n = 110)

Demographic characteristics		Frequency	Per cent
Age	26 - 35	48	44
	36 - 45	46	42
	46 +	16	14
Gender	Male	62	56
	Female	48	44
Education	Matric or less	96	87
	Diploma / Degree	14	13
Experience	One year or less	16	15
	Two years	29	26
	Three years	57	52
	Four years	6	5
	Five	2	2
Department	Purchase and supply	9	8
	Production (baking)	85	77
	Marketing and sales	6	5
	Finance	6	5
	Human resources	4	4

4.2.1 Age distribution

The age distribution in this study showed that 44 per cent of respondents were within the age category 26 to 35 years, 42 per cent in 36 to 45 years and 14 per cent in 46 years and more. The majority of respondents were in the age group 26 to 35 years followed by 36 to 45 years and 46 years and more. The age distribution is further emphasised in figure 4.1.

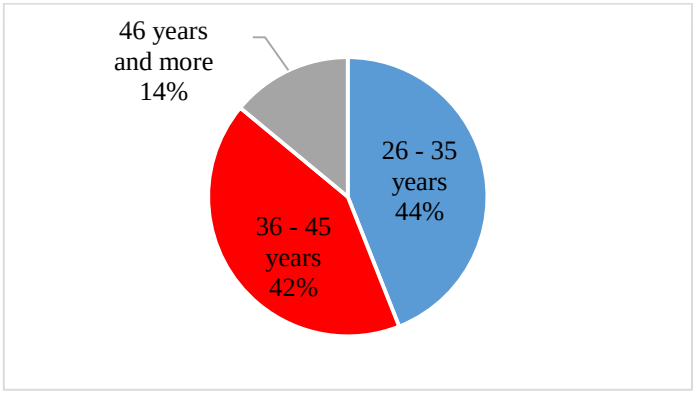

Figure 4.1: Age distribution

The age distribution signifies that majority of employees who were sampled in this study were belonging to the generation Y. Generation Y employees were born in the 1980s and early 1990s.

4.2.2 Gender distribution

In terms of gender distribution, 56 per cent of respondents were male while 44 per cent were female. It is an indication that at the time of data collection the sample showed that majority of respondents were male. In this study it is also indicated that both male and female are having fair opportunity of employment. Figure 4.2 illustrates gender distribution.

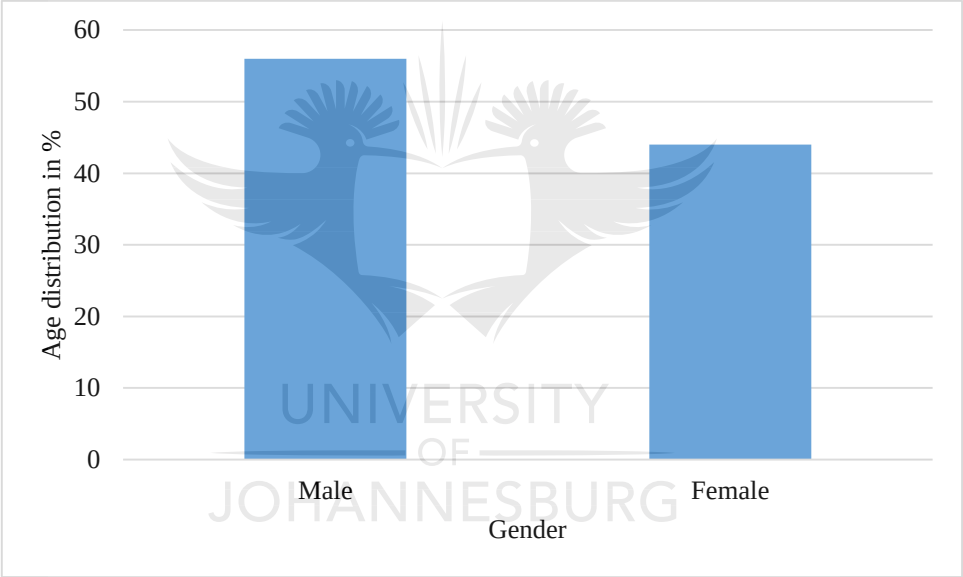

Figure 4.2: Gender distribution

The distribution of female respondents that is closely matching that of the male is a sign of affirmative actions initiated within the organisations. Thus women are getting a fair chance to take roles within the industry.

4.2.3 Education distribution

When looking at education distribution, descriptive results showed that 87 per cent were in possession of matric or less qualifications. The results also showed that 13

per cent were either having a diploma or degree. Figure 4.3 illustrates educational distribution among respondents.

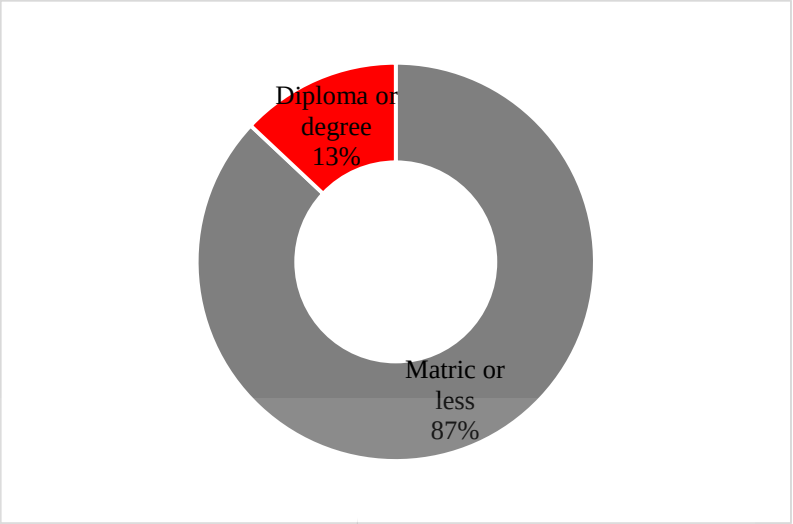

Figure 4.3: Educational distribution

The distribution provided in Figure 4.3 shows that majority of the sampled respondents were holding qualifications at matric level or less. Most of the employees working for the bakery are engaged in the core operations of baking. It is therefore why majority of respondents were holding a matric qualification or less.

4.2.4 Experience level distribution

In terms of experience level, 15 per cent of respondents had experience at one year or less, 26 per cent had an experience level at two years, 52 per cent at three years, five per cent of respondents had an experience of four years while two per cent had five years or more. The experience level distribution is shown in Figure 4.4.

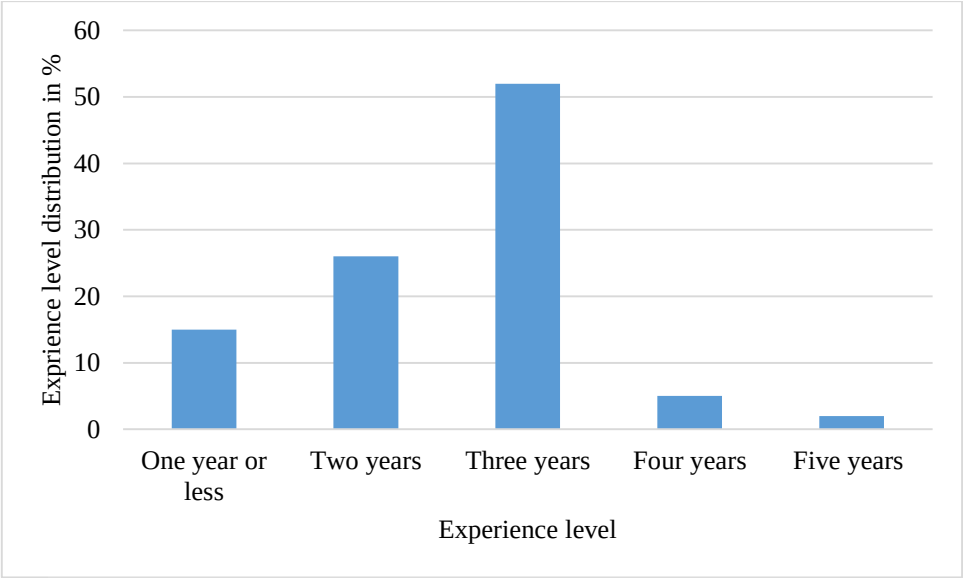

Figure 4.4: Experience distribution

In terms of work experience, majority of respondents had worked for only two to three years. Results also show that few respondents in worked for four or more years.

4.2.5 Work department distribution

In terms of work department, eight per cent of respondents were working in the purchase and supply department, 77 per cent within the production, five per cent within the marketing and sales department. In addition, another five per cent were working within the Finance department while four per cent were within the human resources.

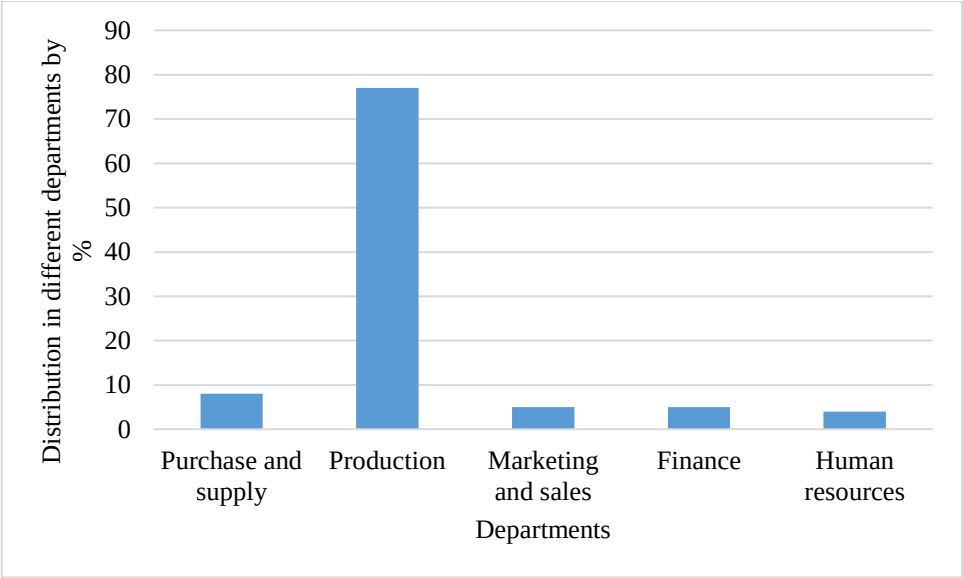

Figure 4.5: Work department distribution

The majority of respondents in this study were within the production department, hence exposed to core operational activities within the firm. The distribution of majority of employees in the production department is consistent with educational qualification distribution provided in section 4.2.3. The next section looks at descriptive statistics on employees' perception of total quality management.

4.3 DESCRIPTIVE STATISTICS ON EMPLOYEES' PERCEPTION OF TOTAL QUALITY MANAGEMENT

In addressing objective one that seeks to assess employees' perception of the state of total quality management at a bakery firm in the City of Tshwane descriptive statistics through mean and standard deviation was utilised. Table 4.2 presents findings relating to employees' perception towards total quality management on each of the 27 items and each of the six dimensions of total quality management. A five-point Likert scale with 1 = 'Strongly agree' and 5 = 'Strongly disagree' was used to measure each item relating to dimensions of total quality management. Perceptions on each of the six dimensions were calculated as a summated average of the items used under each dimension. It is important to note that in this study a scale of 1.0 to 2.0 indicate represents positive perception, while 2.1 to 5.0 indicates a negative perception. In order to ensure suitability of the data for descriptive analysis, it was also important to test the normality of the data through kurtosis and

skewness. According to Saunders, Lewis and Thornhill (2009), normal data suitable for descriptive analysis should achieve kurtosis and skewness between + 2 and – 2. Table 4.2 shows the results of descriptive analysis found in this study.

Table 4.2: The perception on total quality management on all respondents – descriptive (n = 110).

	Dimensions and items	**Mean**	**Standard deviation**	**Kurtosis**	**Skewness**
	Leadership	2.44	1.02	0.06	0.55
L1	Leaders communicate a clear vision of the organisation	2.10	0.92	0.82	.88
L2	Goals and objectives of the organisation are clearly communicated	2.45	1.01	-.32	.42
L3	Leaders clearly communicate the values of the organisation	2.41	1.04	.02	.64
L4	Leaders clearly communicate the policies of the organisation	2.44	1.04	.19	.55
L5	Leaders provide a supportive culture within the organisation	2.80	1.12	-.39	.29
	Knowledge management	2.69	0.98	-.22	0.33
K1	Information is disseminated timeously in the organisation	2.77	1.14	-.79	.38
K2	The information provided in the organisation is reliable	2.71	.92	.00	.33
K3	Accurate information is provided in the organisation	2.54	.88	.36	.49
K4	The information provided to the organisation is consistent	2.80	1.05	-.66	.27
K5	Information regarding performance of the organisation is provided	2.66	.91	-.02	.20
	Suppliers	2.78	1.11	-.68	0.26
S1	Organisation rely on a small group of suppliers	2.72	1.11	-.46	.42
S2	Organisation values long term relationships with suppliers	2.70	1.15	-.85	.28
S3	Organisation takes into consideration input from suppliers	2.76	1.11	-.80	.15
S4	Organisation communicate its vision to the suppliers	2.95	1.08	-.63	.20
	Customer focus	2.64	0.98	-.29	0.6
C1	The organisation make an effort to understand customer needs	2.57	1.03	-.28	.63
C2	Production is set according to the needs and wants of customers	2.61	.97	-.16	.49
C3	Customer complaints are taken seriously in the organisation	2.56	.96	-.01	.54
C4	A dedicated channels are in place for customers to contact the organisation (i.e. telephone number, e-mail)	2.85	.98	-.74	.74
	Employee involvement	3.02	1.02	0.61	-0.5
E1	Employee performance is recognized	3.25	1.17	-.16	-1.01

E2	Employee team work is promoted	2.96	.75	3.29	-.86
E3	Employees are provided with sufficient training	2.80	1.19	-1.42	.20
E4	Employees are empowered to make decisions	3.08	.98	.75	-.65
	Process management	2.69	0.98	-1.11	0.33
PM1	The machinery utilized is up to date	2.77	1.14	-.79	.38
PM2	The methods of production utilised are up to date	2.71	.92	.00	.33
PM3	The organisation utilises material that is of quality	2.54	.88	.36	.49
PM4	People utilised in production department are well skilled and experienced	2.80	1.05	-.66	.27
PM5	The tools utilised are up to date	2.66	.91	-.02	.20
	Operational performance	2.60	1.05	-.47	0.54
OP1	The organization has created a reputation of customer satisfaction	2.70	1.15	-.85	.28
OP2	The organisation has managed to reduce employee turnover	2.85	.98	-.74	.74
OP3	Sales level is increasing	2.54	.88	.36	.49
OP4	Production level is increasing	2.33	1.22	-.65	.67

In this study, kurtosis ranged between 1.97 and -1.51 while skewness ranged between 0.59 and -0.97. After having established acceptable values of Kurtosis and skewness within an acceptable range of 2 to -2, it was satisfactory to proceed to further descriptive analysis which was critical for the purpose of achieving objective 1 that seeks to assess employees' perception of total quality management.

Results from descriptive analysis shown in Table 4.2 shows perceptions of employees towards total quality management. The findings are described at two levels, thus at sub-dimension and items level. Further explanation on these results will be provided in the coming sub-sections 4.3.1 and 4.3.2.

4.3.1 Employees' perceptions towards sub-dimensions representing total quality management

At the sub dimensional level, Table 4.2 shows that all six sub-dimensions representing total quality management (leadership (L), knowledge management (K), suppliers (S), customer focus (C), employee involvement (E) and process management (PM)) were perceived negative by employees sampled in this study. This was deduced from the mean values of the five sub-dimensions that were L (2.44), K (2.69), S (2.78), C (2.64), E (3.02) and PM (2.69) that were above mean

value 2.1. Figure 4.6 illustrate the negative perception of employees towards the six sub-dimensions that represent total quality management.

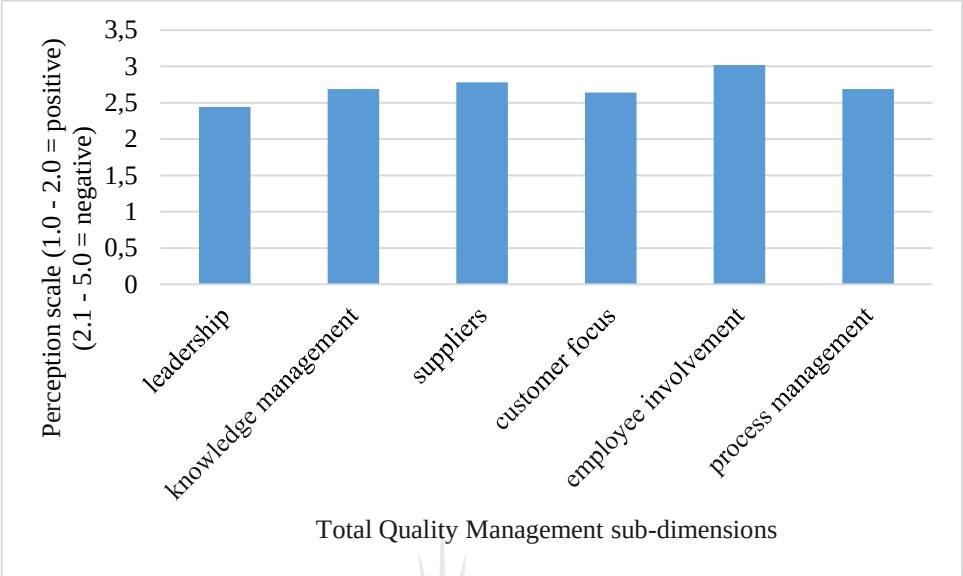

Figure 4.6: Employees' perceptions on total quality management sub-dimensions

Figure 4.1 shows that all sub-dimensions for total quality management tested in this study were perceived as negative. This was evidenced by the mean values L (2.44), K (2.69), S (2.78), C (2.64), E (3.02) and PM (2.69). The highest negative perception was with employee involvement at (3.02), followed by suppliers at (2.78), process management at (2.69), knowledge management at (2.69), customer focus at (2.64) and leadership at (2.44).

4.3.2 Employees' perception towards items representing total quality management

This study tested 27 items representing sub-dimensions for total quality management and all the items representing sub-dimensions for total quality management were perceived negative by employees who were sampled in this study. This section will show the nine items that were found to be having the worst employee negative perception. The nine items with the worst negative perception were E1 (employee performance is recognized), E4 (employees are empowered to make decisions), E2 (employee team work is promoted), S4 (organisation communicate its vision to the suppliers), C4 (a dedicated channels are in place for

customers to contact the organisation (i.e. telephone number, e-mail)), L5 (leaders provide a supportive culture within the organisation), K4 (the information provided to the organisation is consistent), E3 (employees are provided with sufficient training) and PM4 (people utilised in production department are well skilled and experienced). Figure 4.7 illustrate the items with the worst perception.

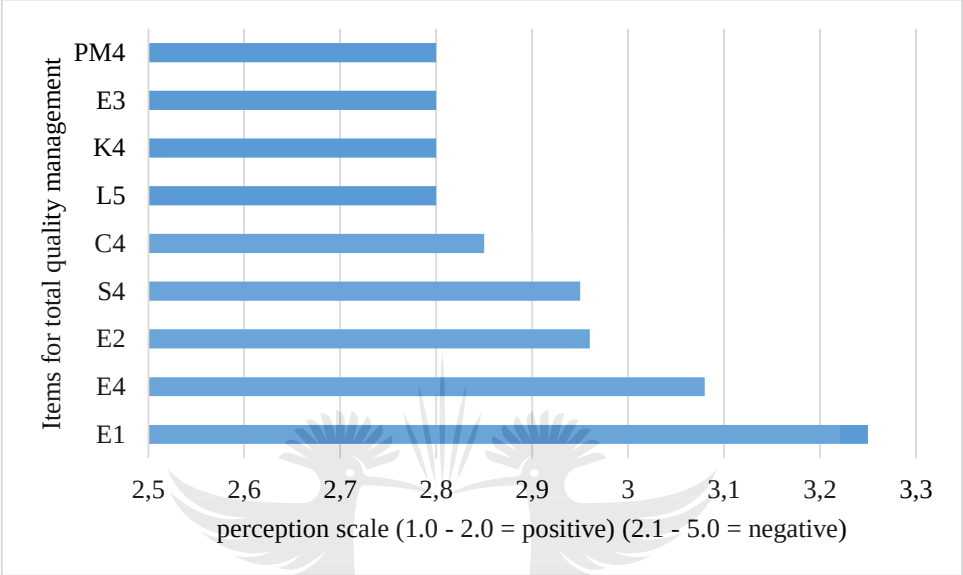

Figure 4.7: Employees' perception of items for total quality management

Since the study found that all sub-dimensions and items representing total quality management had a bad perception. Recommendations were provided in the succeeding chapter. The next section presents results on reliability and validity test that was carried out before correlation and regression analysis were carried out.

4.4 TESTS FOR RELIABILITY AND VALIDITY

It was important to determine the reliability and validity of the measurement items used to collect data, since the quality of any study relies on accurately measuring constructs under study. Research specialists including Blumberg et al. (2011), Malholtra (2010) and Shiu et al. (2009) demonstrate that measurement accuracy is a function of two things: (a) the extent to which the study measures what it sets out to measure, and (b) the precision with which the phenomena are measured. The former defines validity, and the latter reliability.

4.4.1 Construct validity

Blumberg et al. (2011:344) define construct validity as an instrument's "ability to accurately measure the phenomena it purports to measure". Construct validity is rooted in the interplay of two forms of validity – convergent and discriminant validity. To establish high levels of construct validity of the scale, factor analysis was employed to determine the validity of the independent variables. In particular, exploratory factor analysis, was performed to determine not only the loading of items to their factors, but also the inter-correlation of factors themselves (Mazzocchi, 2011). Requirements to proceed with exploratory factor analysis were determined via the sample size; ratio of cases to items, Kaiser-MeyerOlkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity (Shiu et al., 2009). The range of the KMO index falls between 0 and 1; ideally an index (> 0.6) is required for factor analysis. However, a scale with less than 5 items might have a lower index. Regardless, an index (> 0.55) is considered as the absolute minimum tolerance for proceeding with factor analysis. In this study KMO was at 0.82. Lastly, the Bartlett's test, in all cases, yielded highly significant p-values ($p < 0.05$).

Having satisfied the requirements, the PCA was proceeded with for all seven sub-scales to test convergent validity against the hypothesised correlations among items within latent variables (or factors). Table 4.2 summarises the PCA results. The resultant factors were retained subject to satisfying the pre-conditions of attaining eigen values greater than 1, parallel analysis tests and screen plots tests (Mazzocchi, 2011; Pallant, 2010). The minimum cut-off loading for items within factors was set at 0.40 (Field, 2009). Thus, requirements of convergent validity were assessed and fully satisfied by the former. In the latter, the tests for discriminant validity were also satisfied. The factor structures for all scales loaded as expected and are explained in theory. Sub-scales loaded highly and distinctly within factors, thereby supporting the assumptions of construct validity (Blumberg et al., 2011).

4.4.2 Construct Reliability

Cronbach's alpha was used to measure the reliability of the multi-item scales of the questionnaire (Mazzocchi, 2011). Ensuring high levels of reliability was critical in

order to minimise bias and to provide a rigorous test for theory (in-theory falsification) (Calder et al., 1981). All scales were observed to have very high measures of reliability, exceeding 0.7 (Table 4.4).

Table 4.3: PCA Loadings of Variable Constructs

Variables	Factors retained	% variance
Independent		
Leadership	5	51
Knowledge management	5	56
Suppliers	4	46
Customer focus	4	28
Employee involvement	3	32
Process management	5	58
Dependent		
Operational performance	3	42

In all cases, the scales exceeded 0.5, which according to Malholtra (2010), Field (2009), Hair et al. (2010) and Kline (2000), should be considered as absolute minimums. Also, inter-item correlations of the items surpassed .4; thereby suggesting a satisfactory measure of internal consistency (Pallant, 2010). The positive nature of these inter-item correlation matrices indicates that the items are measuring the same underlying characteristic and confirming the internal consistency of the scales. Table 4.4 illustrates the Cronbach's alpha associated with each of the 7 scales comprising the questionnaire.

Table 4.4: Cronbach's Alpha for the Sub-scales

Variable	Cronbach's Alpha	Number of items
Leadership	.86	5
Knowledge management	.86	5
Suppliers	.84	4
Customer focus	.87	4
Employee involvement	.65	3
Process management	.86	5
Operational performance	.87	3

In all the seven sub-scales, the Cronbach's alpha met this threshold. After having established both the construct validity and reliability of the questionnaire, it was concluded that the items used to measure total quality management and operational

performance were indeed reliable. The next section proceeded with results on correlation and regression analysis.

4.5 CORRELATION AND REGRESSION ANALYSIS

The underlying assumptions of conducting correlation and regression analysis were well met in this study. Correlation and regression are most suitable for a study which seeks to test a relationship between variables. They are also appropriate for a large sample size, for example 110 respondents utilised in this research. Responses utilised in the questionnaire were continuous in nature since they were in the form of a five Likert scale. In order to test the hypothesised relationships between sub-dimensions of total quality management (leadership, knowledge management, suppliers, customer focus, employee involvement and process management) and overall operational performance depicted on Figure 2.4 in Chapter 2, correlation and regression analyses were performed.

Note that overall operational performance as a dependent variable was measured as a summated average of four items, namely 'The organization has created a reputation of customer satisfaction', 'The organisation has managed to reduce employee turnover', 'Sales level is increasing', and 'Production level is increasing'. The first three items were utilised for further analysis after reliability and validity analysis. A five-point Likert scale with 1 = 'Strongly agree' and 5 = 'Strongly disagree' was also used to measure items relating to operational performance.

4.5.1 Correlation analysis among sub-dimensions of total quality management and overall operational performance

Correlation analysis was used to measure the strength of relationships, i.e. the variables. Table 4.5 presents a summary of the results of the correlation analyses. The pearson correlation (r) indicates strength and direction (negative or positive) of the correlation, while the p-value indicates the probability that the given r-value is seen by chance.

Table 4.5: Correlation analysis

		1	2	3	4	5	6	7
1	Leadership	1						
2	Knowledge management	**.61***	1					
3	Suppliers	**.62 ***	**.68 ***	1				
4	Customer focus	**.71 ***	**.69 ***	**.78 ***	1			
5	Employee involvement	**.71 ***	**.72 ***	**.77 ***	**.84 ***	1		
6	Process management	**.61 ***	**1***	**.68 ***	**.69 ***	**.72 ***	1	
7	Operational performance	**.61***	**.75***	**.87***	**.82***	**.74***	**.75***	1

*p < .001

Studying Table 4.5 reveals that there is an existing strong to moderate positive relationship among all the total quality management sub-dimensions as well as with all of each of the total quality management sub-dimensions and overall operational performance.

4.5.2 REGRESSION ANALYSIS AND HYPOTHESES TEST

After having observed that the correlation of the six sub-dimensions of total quality management (i.e., leadership, knowledge management, suppliers, customer focus, employee involvement and process management) among themselves as well as to operational performance was moderate to high (Table 4.5), it was instructive to test how these variables influenced operational performance.

Based on the findings (Table 4.6), the hypotheses were tested as follows:

4.5.2.1 HYPOTHESIS 1

Based on regression results ($p < 0.001$, $r = 0.61$, $\beta = 0.61$), *hypothesis H_1 which states that there is a positive relationship between leadership and the overall operations performance can be accepted at $p < 0.001$ significant level.* From this

finding it can be noted that leadership can lead to overall operational performance. This finding is consistent with Zahari and Zakuan (2016) and Jaafreh and Al-abedallat (2013) studies, which confirms that the ability of a leader to provide clear direction through the vision of the organisation, goals and objectives is important in determining operational performance.

4.5.2.2 HYPOTHESIS 2

Based on results ($p < 0.001$, $r = 0.75$, $\beta = 0.75$), *hypothesis H_2 which states that there is a positive relationship between knowledge management and the overall operations performance can be accepted at $p < 0.001$ significant level.* Hence, it can be confirmed that knowledge management can lead to overall operational performance. This is in line with Al-Damen (2017) and Zu et al.'s (2008) findings that show that knowledge management items such as timeously, reliable, accuracy and consistency of information are significantly related to operational performance.

4.5.2.3 HYPOTHESIS 3

Based on results ($p < 0.001$, $r = 0.87$, $\beta = 0.87$), hypothesis H_3 *which states that there is a positive relationship between supplier management and the overall operations performance is accepted at $p < 0.001$ significant level.* It can be seen that improvement in supplier management can result to increased operational performance. This is consistent to Kim et al. (2012) and Phan et al.'s (2011) study that found attributes related to supplier management to be correlated to operational performance.

4.5.2.4 HYPOTHESIS 4

Based on results ($p < 0.001$, $r = 0.82$, $\beta = 0.82$), *hypothesis H_4 which states that there is a positive relationship between customer focus and the overall operations performance can be accepted at $p < 0.001$ significant level.* This means that the ability of the organisation to appropriately focus on customer's needs is important in creating operational performance. This finding is in line with that of Khanna,

Sharma and Laroiya (2011) who found that customer focus is significantly related to operational performance.

4.5.2.5 HYPOTHESIS 5

Based on results ($p < 0.01$, $r = 0.74$, $\beta = 0.74$), *hypothesis H_5 stating that there is a positive relationship between employee involvement and the overall operations performance is accepted at $p < 0.001$ significant level.* An increase in employee involvement will result in an increase in overall operational performance. This confirms Zahari and Zakuan (2016) and Almansour's (2015) results that found that aspects related to employee involvement are important in determining overall operational performance.

4.5.2.6 HYPOTHESIS 6

Based on results ($p < 0.001$, $r = 0.75$, $\beta = 0.75$), *hypothesis H_6 which states that there is a positive relationship between process management and the overall operations performance can be accepted at $p < 0.001$ significant level.* This means that the ability of the organisation to appropriately focus on its processes is important in creating operational performance. This finding is in line with that of Khanna, Sharma and Laroiya (2011) who found that management of operational processes is significantly related to operational performance.

The hypotheses above are based on results of regression analysis done as shown in Table 4.6. Table 4.6 contains alpha and regression coefficients, SEB which is the standard error of the coefficient of determination, β which is the standardised beta coefficient, and R^2 which is the coefficient of determination as used to measure the explanatory power of predictor variables (sub-dimensions of total quality management) to the dependent variable (operational performance).

Table 4.6: Regression analysis

Dependent variable: Overall operational performance

	B	SEB	β	t	Sig	R^2	Hypothesis
(Constant) Perceived leadership	3.20 .40	.64 .05	0.61	5.00 8.04	0.000*	0.37	Accept H1
(Constant) Perceived knowledge management	1.15 .51	.61 .04	0.75	1.89 11.87	0.000*	0.57	Accept H2
(Constant) Perceived supplier relationship	.98 .64	.41 .03	0.87	2.39 18.26	0.000*	0.76	Accept H3
(Constant) Perceived customer focus	1.02 .67	.49 .04	0.82	2.10 15.15	0.000*	0.68	Accept H4
(Constant) Perceived employee involvement	.27 leaders.88	.70 .08	0.74	.39 11.59	0.000*	0.74	Accept H5
(Constant) Perceived process management	1.15 .51	.61 .04	.75	1.89 11.87	0.000*	0.57	Accept H6

*p < 0.001

4.6 CONCLUSION

This chapter has directed its focus on the operationalization of the study. Provided in this chapter is the analysis that assisted in understanding the demographic profile of the sample respondents. The analyses further moved on to provide understanding of employees' perceptions through the use of descriptive analysis. Furthermore, inferential analysis is provided in this chapter in order to provide answers to the second objective of the study that seeks to understand the relationship between total quality management and operations performance.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 CHAPTER OVERVIEW

In the previous chapter an explanation on results from data analysis is presented. Descriptive statistics results are provided from the demographic distribution of the sampled population. Further results on descriptive analysis are provided to explain the perceptions of employees on total quality management of the bakery firm. Chapter four concludes with an elucidation of results on correlation and regression analysis to that measured the relationship between total quality management and operational performance. The focus in chapter five is centralized on providing conclusions to the objectives of the research. Furthermore, the chapter moves on to provide practical and theoretical implication provided by this study. In addition, existing study gaps are also enlightened to provide opportunities for further research.

5.2 INTRODUCTION

As highlighted in Chapter 1, the purpose of this study was two-fold, thus (a) *assessing employees' perception of the state of total quality management at a bakery firm in the City of Tshwane* and (b) *investigating the influence of total quality management practice towards operational performance*. An extensive review of the literature indicated a gap in the body of knowledge. This stems from the inability of authorities within the bakery firm in the City of Tshwane, South Africa to constantly assess and incorporate the views of employees when shaping total quality management strategies (Kibe & Wanjau, 2014). This study attempted to address this gap in the literature. In order to achieve the objectives, a research question was also formulated as follows: *To what extend do employees' perception of total quality management influence operational performance at a bakery firm in the City of Tshwane?* Furthermore, a conceptual framework was developed in Figure 2.4 of Chapter 2 to guide the collection of evidence necessary to test the

research question. From the conceptual framework, six hypotheses were formulated to assist in the answering of the research questions. These were as follows:

H_1: There is a positive relationship between leadership and the overall operations performance of a bakery firm.

H_2: There is a positive relationship between knowledge management and the overall operations performance of a bakery firm.

H_3: There is a positive relationship between supplier management and the overall operations performance of a bakery firm.

H_4: There is a positive relationship between customer focus and the overall operations performance of a bakery firm.

H_5: There is a positive relationship between employee involvement and the overall operations performance of a bakery firm.

H_6: There is a positive relationship between process management and the overall operations performance of a bakery firm.

This chapter, therefore outlines the conclusions based on the empirical evidence related to employees' perceptions on total quality management aspects (leadership, knowledge management, supplier management, customer focus, employee's involvement and process management) at a bakery firm within City of Tshwane, as well as the influence of these factors on the operational performance of the bakery firm.

5.3 CONCLUSION TO THE RESEARCH OBJECTIVES

This section provides the conclusions that were drawn in this study. In order to get to the conclusions analysis of data was conducted to come up with the findings of the study. The following conclusions of findings were derived from descriptive and inferential data analysis as presented in Chapter 4.

5.3.1 CONCLUSION ON OBJECTIVE 1

With regard to objective 1 which seeks to assess employees' perceptions on total quality management at a bakery firm, it can be concluded that employees had a negative perception towards factors that represent total quality management (leadership, knowledge management, suppliers, customer focus, employee involvement and process management). The conclusion that employees' had a negative perception on factors that determine total quality management was determined based on the mean values above 2.1. The mean values for leadership, knowledge management, suppliers, customer focus, employee involvement and process management were (2.44), (2.69), (2.78), (2.64), (3.02) and (2.69) respectively.

A conclusion is also drawn on the items representing sub-dimensions of total quality management. A total of 27 items were utilized in this study and it was found that employees had a negative perception on all the items for total quality management measured for this study. From the 27, nine items were perceived to be the worst. The nine items with the worst negative perception were E1 (employee performance is recognized), E4 (employees are empowered to make decisions), E2 (employee team work is promoted), S4 (organisation communicate its vision to the suppliers), C4 (a dedicated channels are in place for customers to contact the organisation (i.e. telephone number, e-mail)), L5 (leaders provide a supportive culture within the organisation), K4 (the information provided to the organisation is consistent), E3 (employees are provided with sufficient training) and PM4 (people utilised in production department are well skilled and experienced).

The conclusion drawn from this study that employees had a negative perception towards leadership, knowledge management, suppliers, customer focus, employee involvement and process management is similar to the findings in the study conducted by Fernandez and Moldogaziev (2013). However, a study by Gharakhani et al. (2013) found that employees had a positive perception towards organisational leadership as well as the involvement of suppliers and employees within the operations of the organisation.

The conclusion served to respond to the first objective of this study which was: (a) to *assess employees' perception of the state of total quality management.* It is therefore concluded that employees had a negative perceptions on total quality management factors within the bakery firm in the City of Tshwane. The factors with a negative perception were leadership, knowledge management, supplier management, customer focus, employee involvement and process management.

5.3.2 CONCLUSION ON OBJECTIVE 2

The conclusion on objective 2 that seeks to investigate the influence of total quality management practice towards operational performance is based on the findings of correlation and regression as given in section 4.5 of chapter 4. The results show that all dimensions of total quality management (leadership ($p < 0.001$, $r = 0.61$, $\beta = 0.61$), knowledge management ($p < 0.001$, $r = 0.75$, $\beta = 0.75$), supplier management ($p < 0.001$, $r = 0.87$, $\beta = 0.87$), customer focus ($p < 0.001$, $r = 0.82$, $\beta = 0.82$), employee involvement ($p < 0.001$, $r = 0.74$, $\beta = 0.74$) and process management ($p < 0.001$, $r = 0.75$, $\beta = 0.75$) were positively related to overall operational performance. Thus a positive correlation was found between total quality management factors and overall operational performance.

It can also be concluded that total quality management factors influence the operational performance at varying levels. This is obtained from the explanatory power of each sub-dimension. In this research, supplier relationship with $R^2 = 0.76$ was found to be having a higher influence on operational performance than the rest. It was followed by employee involvement with $R^2 = 0.74$, customer focus $R^2 = 0.68$, knowledge management $R^2 = 0.57$, process management $R^2 = 0.57$, and leadership with $R^2 = 0.37$, respectively.

The conclusion drawn on objective 2 is closely matches the conclusion from studies such as Kibe and Wanjau (2014) and Fotopoulos and Psomas (2010) that found a positive relationship existing between total quality management factors and operational performance. These findings help to respond to the second objective which is: (b) investigating the influence of total quality management practice

towards operational performance at a bakery firm. The conclusion also provides an answer to the research question which is: to what extend do employees' perception of total quality management influence operational performance at a bakery firm in the City of Tshwane?

5.3.3 SUMMARY OF THE FINDINGS

The findings from descriptive statistics showed that the perceptions of employees on total quality management were negative to a greater extent. Results from correlation and regression analysis show that total quality management factors such as leadership, knowledge management, supplier management, customer focus, employee involvement and process management were positively related to the operational performance of the bakery firm. Table 5.1 summarises the hypotheses and major results.

Table 5.1: A summary of the hypotheses and major results

	Hypotheses	Results
H_1:	There is a positive relationship between leadership and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.61$, $\beta = 0.61$)
H_2:	There is a positive relationship between knowledge management and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.75$, $\beta = 0.75$)
H_3:	There is a positive relationship between supplier management and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.87$, $\beta = 0.87$)
H_4:	There is a positive relationship between customer focus and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.82$, $\beta = 0.82$)
H_5:	There is a positive relationship between employee involvement and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.74$, $\beta = 0.74$)
H_6:	There is a positive relationship between process management and the overall operations performance of a bakery firm.	Accept ($p < 0.001$, $r = 0.75$, $\beta = 0.75$)

At this point, the research question which states: "*To what extend do employees' perception of total quality management influence operational performance at a bakery firm in the City of Tshwane?"* can also be answered. The perception of employees on total quality management influence operational performance to a great extent, as evidenced by the tested hypotheses which showed a positive relationship between total quality management factors and operational performance.

5.4 IMPLICATIONS FOR THEORY

The second objective of this study was investigating the influence of total quality management practice towards operational performance. The sought to establish if there is a relationship between total quality management and operational performance. Total quality management was represented by factors such as leadership, knowledge management, supplier management, customer focus, employee involvement and process management. This study confirmed the existing theory through its findings.

Results showed a positive relationship existing between leadership and operational performance. Leadership style including the ability of leaders to clearly communicate the vision, objectives and policies of the organisation is important in influencing operational performance. The theoretical implication based on the relationship between leadership and operational performance is echoed in various previous studies. Zahari and Zakuan (2016) found that leadership attributes such as delegation, creation of employee ownership and responsibility are critical in improving operational performance. Similarly, Jaafreh and Al-abedallat (2013) found that leadership factors such as clear vision, goals, objectives, values and policies of the organization result in a total quality management system.

Furthermore, this study found a positive relationship between knowledge management and operational performance. The same results were also obtained by Zu et al. (2008) that found that factors such as timeous and reliable information that is provided to the employees is important in determining total quality management in the organisation. This study also found that similar attributes for knowledge

management that include accurate and consistent information are critical in determining operational performance. In a recent study, Al-Damen (2017) also found that a knowledgeable workforce is an important component of ensuring total quality management.

In addition to total quality management theory and operational performance, this study found that there is an existing relationship between supplier management and operational performance. In particular, aspects for supplier management such as the establishment of long term relationships with suppliers is critical in ensuring that operational performance is achieved. The positive relationship between supplier management and operational performance was also expressed in previous researches including Kim et al. (2012) and Phan et al. (2011). In both cases it was found that paying attention to supplier activities is one of the critical ways to bring organisational competitiveness.

This study also found that customer focus is also an important aspect that is related to operational performance. The ability of the organisation to understand customer's needs and wants transforms to operational performance. Thus customer complaints need to be handled effectively through providing a dedicated communication channel for example a telephone line and an e-mail address. Khanna et al. (2011) also found that the adoption of a customer focus approach is instrumental towards a development of a total quality management system.

A positive relationship was also found between employee involvement and operational performance. Thus the ability of the organisation to ensure that employees are recognised, team work is instilled and sufficient training is provided is crucial towards attainment of operational performance. This finding is consistent with the finding of Zahari and Zakuan (2016) and Almansour (2015) who found that involvement of employees is critical in creating a total quality management system.

In this study, the relationship between process management and operational performance was also found to be positive. Thus a correlation was found existing between process management and operational performance. Process management

aspects that were found to be critical towards total quality management and operational performance are the maintenance of up to date machinery, methods of production and utilisation of quality material as well as skilled and experienced workforce.

This study provided significant implication for theory. It echoed the impact of total quality management factors such leadership, knowledge management, supplier management, customer focus, employee involvement and process management on operational performance. The next section provides the implication for practice that came as a result of this study.

5.5 IMPLICATIONS FOR PRACTICE

Several implications for practice are identified from this study. These are recommendations for improving total quality management and operational performance within the manufacturing industry particularly bakery firms. This study suggests that opportunities for total quality management improvement include factors such as leadership, knowledge management, supplier management, customer focus, employee involvement and process management.

5.5.1 Recognise employee performance

Managers need to ensure that employees are encouraged to continuously improve their performance. Improvement of employees' performance can be achieved through consistent recognition of the good work performed by employees. The organization need to give recognition vouchers and gifts to outstanding employees. This method is one of the many ways that can be used to induce great performance from the employees.

5.5.2 Encourage employee team work

It is important that the organization encourages its employees to work in teams. It is critical that team goals are put in place and made known to employees. A reward

has to be given for employees who are able to achieve their team goals. Encouraging team work is a critical element for encouraging knowledge sharing.

5.5.3 Empower employees to make decision

Power should not be too centralized in the hands of management. It is important that employees are given a fair opportunity of making decision within their work station. Thus decentralization of roles that can equally be performed by the relevant employees is important. Employees who are empowered through authority to make decisions enjoy job satisfaction and work productivity.

5.5.4 Communicate the vision of the organization to the suppliers

The organization needs to inform the suppliers of its vision. Allowing suppliers to understand the vision of the organization is important as it allows the former to understand product and service specifications to be supplied to the organization. When the organization receives the right inputs in terms of quantity and quality it helps to produce products that would meet the needs and wants of customers.

5.5.5 Ensure that processes focus on customer's needs

It is important that the organization make processes around customer's needs. In order to understand customer's needs communication channels that links the organization and its customers should be made clear. Communication channels can be in the form of telephone lines and e-mails that are easily accessible. It is also critical that the organization respond to customer queries in the least possible time. The organization can adopt a policy that the telephone should not ring for more than three times before it is answered.

5.5.6 Institute a supportive culture within the organization

It is important that a culture that is supportive is installed in the organization. Thus support needs to be readily available to both employees and management. Various departments in the organization need to be supportive of each other. It has to be

noted that departments play the role of customer and supplier to each other, for example the finance department should be able to provide the much needed capital to the needing departments.

5.5.7 Continues provide employees with training

It is important that the organization continuously provide its training to its employees. The training given to employees depends on their various needs. Employees who are recently joining the organization should get training in the form of job orientation. On the other hand, employees who are already in the organization should get refresher training that keeps them on the loop of what is expected on them.

This section provided the various implications for practice. These implications are recommendations that can be adopted by players in the manufacturing organisations so as to induce total quality management and operational performance. Total quality management and operational performance are important for organizational competitiveness. The next section explains the limitations that embedded in this study.

5.6 LIMITATIONS OF THE STUDY

There are four limitations found in this study. Firstly, it has to be noted that this study was limited to a sample of employees working for the bakery firm in the City of Tshwane. Therefore it has to be noted that findings from this study cannot be generalised to all bakeries in South Africa and in other nations.

The collection of data was achieved within a month which is a short period of time. The short time frame utilised to collect data makes this study to be cross sectional. The responses captured in this study enables the organisation to have an understanding of employees' perception within a month and disregarding change of such perceptions that can occur as data collection is prolonged.

The research methodology utilised in this study is quantitative in nature. That is it allows the use of numbers to make sense of the data. However, the numerical approach has its own weaknesses. It does not give place for the respondents' comments. Respondents are limited to the respondents that are already given by the questionnaire, unlike interviews where the study respondents are able to respond.

This study is based on specified conceptual framework. The conceptual framework used in this study has six sub-dimensions representing total quality management. The sub-dimensions for total quality management are leadership, knowledge management, supplier management, customer focus, employee involvement and process management. These represented independent sub-dimensions. The dependent sub-dimension was represented by operational performance. There are other sub-dimensions that can be utilised to measure total quality management and operational performance that were not considered in this study.

5.7 DIRECTION FOR FUTURE RESEARCH

An opportunity for future research is existing in the sense that a replication study can be carried out on more than one bakery and employees in different towns and provinces. A further study can also be carried out from other manufacturing firms that are not in the form of bakeries. It is also desirable for a research that compares between a bakery firm and other non-bakery firms.

Since this study was carried out within a short period of time an alternative study can be replicated over an extended time. Thus a longitudinal study is quite desirable since it will allow the capture employees' opinions over a long period of time in order to note possible changes of the respondents' reaction. Thus a study can be carried out over a six months duration or more.

Further studies in the future can utilise qualitative research methods. Unlike the research mechanism utilised in this study, qualitative research approach allows the research to get an insight of what respondents think about the phenomena under study. Thus the study respondents will be able to provide comments in their own words making the research to be informative. It also has to be noted that other

factors that represent total quality management and operational performance can utilised apart from the sub-dimensions employed in this study.

5.8 CONCLUSION

The purpose of this research was to assess employees' perceptions on total quality management and investigate how total quality management factors influence operational performance. A review of the literature indicated a gap within the body of knowledge with respect to factors affecting total quality management and operational performance at the bakery firm within the context of the City of Tshwane, South Africa. In line with this gap within the body of knowledge, the research question and several hypotheses were formulated and presented in Chapter 1 and justified in Chapter 2. Chapter 3 discussed the methodology used to answer the research questions. Chapter 4 outlined the data analysis procedures and findings thereof. Conclusions of the findings, recommendations and suggestions for further research were highlighted in Chapter 5. The objective of the study was to investigate and attempt to answer the question: "*To what extend do employees' perception of total quality management influence operational performance at a bakery firm in the City of Tshwane?"*

The data analysis presented interesting findings. The perceptions of employees at the bakery firm were assessed. It was found that employees had a negative perception on factors for total quality management that are leadership, knowledge management, supplier management, customer focus, employee involvement and process management. The six sub-dimensions for total quality management that are leadership, knowledge management, supplier management, customer focus, employee involvement and process management (Sadikoglu & Olcay, 2014), were also tested as to whether they had any direct influence on operational performance. The results provided evidence that all six predictor variables influenced the operational performance at varying levels. Thus, a positive correlation was observed to directly influence the performance of operations.

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Appendix A

Dear Respondent

Thank you for participating in this research. This questionnaire is part of a study determined to assess the state of total quality management and investigate the influence of total quality management towards operational performance at private colleges in the City of Tshwane. Please note, this questionnaire is adapted from Sadikoglu and Olcay (2014) and adjusted to suit this present study. Please take note that your name is not required nor is it requested, hence confidentiality is assured. Also note that your decision to take part is entirely voluntary. The questionnaire will only take 10-15 minutes of your time. The answers from your questionnaire and others will be used as the main data set for the research project.

General Instructions

The following instructions and conditions must be understood by all respondents:

a) Specific instructions for each section are provided;
b) When evaluating the questions, please provide the answer from your own perspective;
c) Please complete all questions, do not leave any unanswered questions;
d) Please make use of the scale proved to you for each of the questions;
e) Please return the completed questionnaire by depositing it in the box placed at the administration desk.

Your cooperation will be much appreciated.

Thank you

Syria Sibongile Chauke

SECTION A: DEMOGRAPHICS

1.What is your age in years?

18-25	1
26-35	2
36-45	3
46 +	4

2. What is your gender?

Male	1
Female	2

3. What is your level of education?

Matric	1
Diploma / Degree	2
Postgraduate (Honours/ masters/ PhD)	3

4. What is your job experience level?

< one year	1
Two years	2
Three years	3
Fours years	4
Five and more years	5

4. Which department are you stationed?

Purchase and supply	1
Production (baking)	2
Marketing and sales	3
Finance	4
Human resources management	5

SECTION B: OPINIONS SOUGHT

In this section, please indicate the extent to which you agree or disagree with each of the following statements. You may indicate your answer by placing a cross (x) in your selected response, using the scale: (1) = Strongly Agree; (2) = Agree; (3) = Neutral; (4) = Disagree; (1) = Strongly Disagree

Leadership		**Strongly Agree (1)**	**Agree (2)**	**Neutral (3)**	**Disagree (4)**	**Strongly disagree (5)**
L1	Leaders communicate a clear vision of the organisation	1	1	3	4	5
L2	Goals and objectives of the organisation are clearly communicated	1	1	3	4	5
L3	Leaders clearly communicate the values of the organisation	1	1	3	4	5
L4	Leaders clearly communicate the policies of the organisation	1	1	3	4	5
L5	Leaders provide a supportive culture within the organisation	1	1	3	4	5

Knowledge management		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
K1	Information is disseminated timeously in the organisation	1	2	3	4	5
K2	The information provided in the organisation is reliable	1	2	3	4	5
K3	Accurate information is provided in the organisation	1	2	3	4	5
K4	The information provided to the organisation is consistent	1	2	3	4	5
K5	Information regarding performance of the organisation is provided	1	2	3	4	5

Suppliers		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
S1	Organisation rely on a small group of suppliers	1	2	3	4	5
S2	Organisation values long term relationships with suppliers	1	2	3	4	5
S3	Organisation takes into consideration input from suppliers	1	2	3	4	5
S4	Organisation communicate its vision to the suppliers	1	2	3	4	5

Customer focus		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
C1	The organisation make an effort to understand customer needs	1	2	3	4	5
C2	Production is set according to the needs and wants of customers	1	2	3	4	5
C3	Customer complaints are taken seriously in the organisation	1	2	3	4	5
C4	A dedicated channels are in place for customers to contact the organisation (i.e. telephone number, e-mail)	1	2	3	4	5

Employee involvement		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
E1	Employee performance is recognized	1	2	3	4	5
E2	Employee team work is promoted	1	2	3	4	5
E3	Employees are provided with sufficient training	1	2	3	4	5
E4	Employees are empowered to make decisions	1	2	3	4	5

Process management		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
PM1	The machinery utilized is up to date	1	2	3	4	5
PM2	The methods of production utilised are up to date	1	2	3	4	5
PM3	The organisation utilises material that is of quality	1	2	3	4	5
PM4	People utilised in production department are well skilled and experienced	1	2	3	4	5
PM5	The tools utilised are up to date	1	2	3	4	5

Operational performance						
OP1	The organization has created a reputation of customer satisfaction	1	2	3	4	5
OP2	The organisation has managed to reduce employee turnover	1	2	3	4	5
OP3	Sales level is increasing	1	2	3	4	5
OP4	Production level is increasing	1	2	3	4	5

THANK YOU