UNIVERSITY OF KWAZULU-NATAL

Quality Management Performance Modelling

for the

South African Contact Centre Industry

By

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A dissertation submitted in partial fulfilment of the requirements for the degree

of

Doctor of Business Administration

Graduate School of Business and Leadership
Faculty of Law and Management Studies

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August 2019

DECLARATION

This research has not been previously accepted for any degree and is not being currently considered for any other degree at any other university.

I declare that this Dissertation contains my own work except where specifically acknowledged.

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ACKNOWLEDGEMENTS

A project as intense as this study is not possible without the contribution of many people. While it is difficult to acknowledge all those who offered support, there are individuals without whom this project would not have reached completion, and to them go my special thanks and acknowledgement of their contributions.

I am grateful to my Supervisor Dr Rosemary Sibanda for guiding me through the academic process and providing vital checkpoints that helped steer the work efficiently.

I am also grateful to members of the Independent Contact Centre Consultants Association (ICCCA) that helped validate the content of the study, ensuring direct industry relevance. Mr Rod Jones is worthy of specific mention for his continuous support and publicising of the study through his prominence in the South African contact centre industry.

I would like to thank Mr Andy Quinan for facilitating the interface with the Trade Associations and assisting with the difficult task of adequate data collection.

I would also like to thank Mr Deepak Singh for his statistical support that afforded me the confidence to process the data independently.

This work has been edited by Mr YM Devraj to whom I am grateful.

Finally, I owe an eternal gratitude to my wife Simmi and son Yasthiel for their loving encouragement, support and patience throughout this journey.

GLOSSARY OF ACRONYMS

ANOVA	Analysis of Variance
ASGISA	Accelerated and Shared Growth Initiative for South Africa
ASQ	American Society for Quality
BPeSA	Business Process enabling South Africa
BPO	Business Process Outsourcing
BPO&O	Business Process Outsourcing and Offshoring
BPS	Business Process Services
CCMG	Contact Centre Management Group
CFA	Confirmatory Factor Analysis
DHE&T	Department of Higher Education and Training
DOL	Department of Labour
DTI	Department of Trade and Industry
EFA	Exploratory Factor Analysis
EFQM	European Foundation for Quality Management
EOA	European Outsourcing Association
EQA	European Quality Awards
GAS	Government Assistance and Support
GDP	Gross Domestic Product
GFI	Goodness of Fit Index
IA	Item Analysis
ICCCA	Independent Contact Centre Consultants Association
ILO	International Labour Organisation
IPAP	Industrial Policy Action Plan
ISO	International Standards Organisation
JUSE	Japanese Union of Scientists and Engineers
KMO	Kaiser-Meyer-Olkin
KPI	Key Performance Indicator
MBNQA	Malcolm Baldridge National Quality Awards
NOA	National Outsourcing Association

NPAR	Non-Parametric
NSF	National Skills Fund
PCA	Principal Component Analysis
QMS	Quality Management System
SABS	South African Bureau of Standards
SEM	Structural Equation Modelling
SLA	Service Level Agreement
STATSA	Statistics South Africa
TQM	Total Quality Management
UKZN	University of KwaZulu Natal
VIF	Variance Inflation Factor

ABSTRACT

Against the background of an extreme youth unemployment problem, South Africa seeks to identify and support industries that may offer substantial solutions. The employment potential of the contact centre industry was recognised by the South African government as far back as 2004. By capitalising on comparative advantages such as lower costs, South Africa has successfully claimed a place amongst the preferred international customer service destinations. While lower costs remain a key driver behind the outsourcing of services to offshore destinations like South Africa, a shift in focus towards the 'quality of service' is increasingly featured in outsourcing decisions. It follows that, in order to maintain the competitive momentum amidst intense international rivalry, it is imperative that contact centre managers understand the relationship between quality practices and business performance. While these relationships have been investigated across various industry sectors and in various locations globally from as far back as the early 90s, such relationships have not been empirically investigated in the contact centre environment and specifically not in the South African context. The primary objective of this study is to address this gap by developing a model that reveals the nature of the quality practice / performance relationships together with the moderating impact of contingency factors. This should serve as a valuable, context-specific, industry reference while academically contributing towards the development of quality management theory. Based on extensive academic and practice literature, a new industry-specific measurement instrument was developed that demonstrated very good reliability and validity. By initially exploring the extent and manner in which quality practices are deployed it was found that the South African contact centre industry are generally 'high users' of quality practices that are normally deployed as part of a more holistic quality program. The proposed quality practice / performance model was based on features of prominent models found in the literature where Path Analysis techniques were employed to test the relationships among variables. Regression analyses confirmed the importance of 'Top Management Support' where Leadership quality practices showed a strong, positive and significant impact on the deployment of 'Core quality practices' such as Customer, Human Resource, Operational, Infrastructure and Relationship practices. When the impact of each core group of quality practices was measured in isolation i.e. via directly related performance metrics, the results show that all groups have a strong, positive and significant impact on performance. Similar results were obtained when performance was measured at an organisational level for both operational and business performance. Further, synergistic value was found in the deployment of quality practices thus confirming the interdependent nature of such practices. The key implication is that although there are variations in the impact among the various quality practices, all contribute significantly to operational and business performance – thus supporting the deployment of full-blown quality programs. The results may however be used for piecemeal program implementations that focus on the practices that offer the highest impact on performance i.e. customer and human resource-related practices. Finally, the contingency factors that demonstrated the highest moderating impact on the practice / performance relationships included 'Management Knowledge', External Demand for Compliance' and 'Culture' while demographic factors had no significant impact. The result partially supports both the universal and context driven approaches to quality management. Path analyses revealed a good fit of the model to the data.

KEYWORDS

quality management; quality practice and performance modelling; quality performance measurement; contact centre industry

CONTENTS

CHAPTER 1 – GENERAL ORIENTATION

CHAPTER 2 – THE CONTACT CENTRE INDUSTRY

CHAPTER 3 – LITERATURE REVEIW

CHAPTER 4 – MODEL DEVELOPMENT

CHAPTER 5 – RESEARCH METHODOLOGY

CHAPTER 6 – PRESENTATION OF RESULTS

CHAPTER 7 – DISCUSSION,CONCLUSION AND RECOMMENDATIONS

REFERENCES

LIST OF TABLES

LIST OF FIGURES

APPENDICES

CHAPTER 1

GENERAL ORIENTATION

1.1 INTRODUCTION

The primary objective of this study is to develop a quality management practice / performance model for the South African contact centre industry. While contributing to the development of quality management theory, it is envisaged that the model would guide quality practitioners in their approach to quality management such that maximum return may be realised on resources invested. This chapter aims to provide a general orientation with respect to the study. Initially the background of the study is outlined, leading to the problem statement, aims, objectives and significance of the study. The research design is presented together with the delimitation of the study scope and the relevant assumptions. Finally, an elaboration of the thesis structure is provided before the chapter is summarised.

1.2 BACKGROUND OF STUDY

According to the International Labour Organisation's report entitled 'The World Employment and Social Outlook – Trends 2018' (International Labour Organization, 2018), South Africa is projected to have the 8th highest unemployment rate in the world – a situation not expected to change in the next 5 years. The youth unemployment ranking is even higher (6th globally) at a rate of 52.5%. Statistics SA's 'Quarterly Labour Force Survey' (Statistics SA, 2018) concurs. This predicament may be considered a significant threat to South Africa's future economic and social stability. Consequently, job creation has been highlighted among the government's primary objectives along with economic growth and transformation.

Industry sectors that could offer a significant mitigation of the youth unemployment problem need to at least satisfy certain fundamental requirements. These include being labour intensive; having relatively low barriers to entry in terms of education and training; being compatible with younger people/culture and offering an achievable path for growth and career development. The contact centre industry meets these fundamentals.

Based on figures provide by Holman et al (2007) and subsequent industry growth rates (Willcocks et al, 2012), it is estimated that contact centre employment exceeds 10 million internationally. The rapid growth of this service industry has been driven by a major uptake of an outsourcing culture where businesses are focusing on core functions while partnering with specialised outsource partners to manage back office and non-core functions, a practice known as Business Process Outsourcing (BPO). Emerging markets that tend to have lower labour costs have been

the major beneficiaries of this relatively recent business phenomenon. According to Lacity et al (2011:222) "the opportunities for the BPO market were still enormous, estimating that that only $68 billion of the Fortune 500's $1.3 trillion non-core cost base was outsourced".

In South Africa, BPO was identified as one of the top priority sectors as far back as 2004. In 2006 the 'Accelerated and Shared Growth Initiative for South Africa' (AsgiSA) (The Presidency Republic of South Africa, 2010) confirmed the potential of the sector and identified it as one of three AsgiSA priorities. After 2010, the government support of the sector was noted as a success, resulting in the renamed Business Process Services (BPS) being identified as a strategic key sector within the DTI's Industrial Policy Action Plan (IPAP 2) – 2012/13 – 2014/15 (Department of Trade and Industry, 2010). Significant elements of South Africa's value proposition include: - a favourable time zone; neutral accents (premium English voice quality); skilled and available labour force; lower cost of operations (including wages); tumbling telecoms costs; robust financial infrastructure and relative political stability. Supported by dedicated government initiatives, the South African contact centre industry has proven to be very successful, evidenced by its growth rate of 30% to 35% from 2009 to 2013 (Bloomberg, 2013). As the recipient of major international awards, South Africa is currently considered among the top international destinations for the provision of contact centres services.

Changing priorities in the rapidly expanding and highly competitive BPO environment have seen the emphasis move from mostly lower costs to a balance between lower cost and higher quality. According to the Site Selection Group (2016), many companies have re-shored work from the Philippines and other offshore destinations, seeking to improve service quality despite higher costs (Site Selection Group, LLC, 2016). Countries that offer a better balance between cost and quality, like South Africa, may find increased market opportunity in this environment.

Critical to maintaining competitive momentum is a contact centre's management understanding of the relationships between quality practices and company performance. In an effort to optimally realise the benefits of a cost-efficient quality management program, managers should focus on quality practices that have a significant impact on operational and business performance. While the relationships between quality practices and performance have been investigated across various industry sectors from as far back as the early 90s, such relationships have not been empirically investigated in the contact centre environment and specifically not in the South African context. The primary objective of this study will be to address this gap by developing a model that reveals the nature of the quality practice / performance relationships that should serve as a valuable context-specific industry reference while academically contributing to the development of quality management theory.

1.3 PROBLEM STATEMENT

Given the importance of understanding the quality practice / performance relationships together with no such investigation having been conducted in this specific industry environment, the problem statement for the current research is stated as :

How do quality management practices impact on operational and business performance in the South African Contact Centre Industry?

1.4 OBJECTIVES AND RESEARCH QUESTIONS

The problem is addressed by aiming to achieve the following research objectives:

Objective 1:

Explore the deployment of quality management practices in the South African Contact Centre Industry.

This objective will be met by answering the following research questions:

Research Question 1:	To what extent are quality practices deployed in the South African Contact Centre Industry?
Research Question 2:	Are quality management practices deployed in unison or as individual practices?

Objective 2:

Develop a Quality Practice / Performance Model for the South African Contact Centre Industry.

This objective will be met by answering the following research questions:

Research Question 3:	How do Leadership Quality Practices influence the deployment of Core Quality Practices?
Research Question 4:	How do Quality Practices impact on Quality Performance?
Research Question 5:	How do Quality Practices impact on Quality System Performance?
Research Question 6:	How do Quality Practices impact on Business Performance?
Research Question 7:	Is there synergistic value in the deployment of Quality Practices?

Definitions:

Core Quality Practices *include Customer Quality Practices, Human Resource Quality Practices, Operational Quality Practices, Infrastructure Quality Practices and Relationship Quality Practices (adapted from Wu, 2014)*

Quality Performance *is operational performance measured on a functional level i.e. via performance metrics directly related to each set of core quality practices (adapted from Kaynak, 2003 and Wu, 2014)*

Quality System Performance *is operational performance measured on an organisational level via metrics that capture the combined impact of the core quality practices (adapted from Kaynak, 2003)*

Objective 3:

Assess the moderating effect of contingency factors on the relationship between quality practices and performance.

This objective will be met by answering the following research question:

Research Question 8:	How do contingency factors moderate the relationship between quality practices and performance?

1.5 SIGNIFICANCE AND CONTRIBUTION OF THE STUDY

The significance of the study is viewed from both a practical and academic perspective.

1.5.1 PRACTICAL SIGNIFICANCE

The essential output of the study is a 'Quality Management Practice / Performance Model for the South African contact centre industry'. The model will help guide quality practitioners to focus their limited resources on quality practices that have empirically demonstrated the highest impact on performance. This is considered vital, given that the achievement of higher quality output needs to be balanced with the key objective of maintaining lower costs. Finding the correct balance between quality and cost will help maintain and grow South Africa's competitive position internationally. A point worth noting is that given the similarity of contact centres across the globe (Benner et al, 2007) this study could be considered internationally relevant.

Due to the comprehensive nature of the study both in terms of the field of quality management and its national industry reach, it is expected that this model will be considered a context-specific industry reference going forward. The credibility of the work is enhanced by the support obtained from the major national trade associations. Finally, South Africa is considered a leader in the area of 'Quality Standards for Contact Centres' - a position validated by the fact that the recent

development of the ISO Standards for Contact Centres was chaired in South Africa. This work would further bolster the country's leadership role in this field.

1.5.2 ACADEMIC SIGNIFICANCE

Efforts to develop a quality management theory have been ongoing for the past three decades. Early evidence of such work may be found in articles produced by Saraph et al (1989). These early efforts focused on developing reliable and valid measurement instruments that could be used for empirical studies. Inputs were derived from mostly prescriptive literature produced by prominent contributors such as Deming (1981), Juran (1986) and Crosby (1979). Since quality management was first introduced in the manufacturing industry, most of the earlier measurement instruments had a manufacturing bias (Flynn et al, 1995). Later attempts claimed to be applicable to most industries, including service industries (Zhang, 2000; Salaheldin, 2008). However, none were found to be suitable for the contact centre industry. It follows that the first major academic contribution of this study is the development of an instrument specific to the contact centre industry. It draws on inputs from early prescriptive literature, key academic studies, internationally recognised quality awards criteria, domestic and international quality standards and prominent industry reports.

Furthermore, the quality practice / performance relationships have been modelled in various industries and across many countries (details of which will be included in the literature review). This is the first such empirical study in the contact centre industry in South Africa or elsewhere (to the best of the researcher's knowledge). It will therefore add to the existing body of knowledge and further contribute to the development of quality management theory.

1.6 RESEARCH DESIGN

According to Charmaz (2003), cited in Sibanda (2011), "research design can be regarded as a blue print, a master plan that specifies the methods, techniques and procedures for collecting and analysing the needed information or simply a framework or plan of action for the research." He states that "it therefore refers to the structure of an enquiry that seeks to answer the research questions as unambiguously as possible" (Sibanda, 2011:65).

The following steps in the research process establishes the platform on which the design is based:

- A comprehensive review of the **research environment** that contextualises the research problem and the motivation behind the study.
- Concisely stating the **research problem** to understand the scope and delimits of the study.
- Determining the **objectives** and the **research questions** that form the functional threads to completion of the research process.

The research questions will be answered via the following processes:

- Conducting a **comprehensive literature** review of quality management, specifically in relation to the impact on performance. The literature review will focus on the dimensions of quality management, practice / performance relationship modelling and data analysis techniques.
- Grounded in the literature, the research questions will be translated into a set of **hypotheses** depicted in a quality practice / performance **model.** The model will illustrate the relationships to be tested.
- The elements in the model will then be operationalised by determining **measurement statements** that will form the basis of the measurement instrument.
- The **population** will be determined and profiled via trade association statistics and prominent industry reports. **Sample** size will be guided by the recommendations of several authors including Alreck and Settle (1995) and the Krejcie and Morgan formulation (1970).
- The draft measurement instrument will then be content validated in a **Pilot Phase** that will include consultation with **industry experts** and a **pre-test** at leading contact centres.
- The final instrument / questionnaire will be implemented on an online platform, specifically 'QuestionPro™' that is available for the study.
- The study will be **publicised** via the trade associations and industry experts / consultants and service providers.
- Collected **data will be prepared** for analysis via integrity, representivity / bias, normality and multicollinearity checks.
- **Reliability** analysis will be conducted using the internal consistency method. Cronbach's Alpha within acceptable thresholds will be calculated to assess the reliability of the instrument.
- Having already established **content validity** in the pilot phase, the instrument will then be tested for **criterion validity** via correlation analysis and **construct validity** using confirmatory factor analysis.
- Finally, the **hypotheses will be tested** using descriptive statistics, correlation analysis and , path analysis.

This systematic process should provide answers to the research questions thus leading to an understanding of the quality practice / performance relationships in the South African contact centre industry.

1.7 DELIMITATIONS OF THE SCOPE OF THE STUDY

The problem statement points to the following delimitations of the study:

- The research is confined to the domain of Quality Management
- The specific aspect of quality management is the impact on performance
- The industrial sector is limited to the Contact Centre Industry
- The geographical scope is limited to South Africa

1.8 LIMITATIONS OF THE STUDY

The following limitations of the research should be noted:

- Employing a survey method, this research is subject to a fundamental limitation inherent in survey designs i.e. questions may be subject to the respondent's interpretation without a researcher available (as in an interview) to provide clarity.
- The study utilises a cross-sectional sample at a point in time. While causal relationships may be inferred, it cannot be claimed that they persist in time. A longitudinal design would address this limitation to some extent.
- While perceptual data is acceptable in this type of research, it invites considerable subjectivity based on the respondent's perceptions. This may further be influenced by responding executives wanting to project a positive image of themselves and their organisations.

1.9 ASSUMPTIONS

The major assumptions made are as follows:

- Respondents trust the data privacy, confidentiality and anonymity assurances given in the study and therefore participate willingly.
- Statements in the measurement instrument are unambiguous and terminology used is generally understood in the contact centre environment.
- Respondents provide accurate and informed responses to the measurement statements to affirm the integrity of the findings.

1.10 STRUCTURE OF THESIS

The structure and content of this thesis is as follows:

Chapter 1 serves as an introduction and orientation to the study. The background places the work within South Africa's socio-economic context leading to a description of the motivation behind

the study. The problem statement, objectives and research questions establish the platform for the research design. Details of the design are provided outlining the key processes that would lead to answering the research question. Finally, the delimits and limitations of the study are pointed out together with the assumptions made.

Chapter 2 provides an overview of the contact centre industry. The initial focus is on drivers behind the industry's growth, global trends, market size and potential, together with the positioning of major players. This leads to the South African industry, its characteristics and value proposition. The industry's increasing focus on service quality provides the link to the current study.

Chapter 3 undertakes the literature review of quality management and its impact on business performance. The initial focus is on defining the quality construct. The key literatures sources include prescriptive literatures from early authors, significant academic studies spanning the last three decades, international quality awards criteria, industry relevant quality standards (international and domestic) and prominent industry reports. The emphasis then moves to defining performance measures and relevant contingency factors. Literature on the modelling of the practice / performance relationships and the impact of quality practices on business performance concludes the chapter.

Chapter 4 covers the application of the theory and the development of a model for the study. A quality practice / performance model is proposed together with a comprehensive definition of the constructs. This is followed by the development of the eight hypotheses based on the research questions. The chapter concludes with the operationalising of the model constructs by proposing measurement statements, supported by the literature.

Chapter 5 details the research methodology i.e. all the methods, processes and techniques employed to arrive at answers to the research questions. The chapter recaps on aspects of the study covered in previous chapters to re-affirm the platform for the research design. Details are provided on the population and sampling method, followed by a full description of the measurement instrument. Data collection and preparation methods are described including integrity, representivity/bias, normality and multicollinearity checks. This is followed by reliability and validity analyses before detailing the data analysis / hypotheses testing methods. These include descriptive statistics, correlation analysis (including partial correlations) and path analysis.

Chapter 6 presents the results of the data analysis as described in chapter 5. A data integrity analysis is included as a starting point. This is followed by the demographic profile of the

respondents, descriptive statistics for all variables, pre-checks for normality, bias and collinearity before presenting the results of the hypotheses testing.

Chapter 7 comprises a discussion of the results and conclusions of the study. While the main aim of the study is to develop a quality practice / performance model for the South African contact centre industry, the two key antecedent outcomes are discussed first. These are the development of a new quality management measurement instrument and the exploration of the extent of quality practice deployment in the industry. The discussion based on the quality practice / performance model covers the importance of top management commitment, the impact of quality practices on functional and organisational performance, synergistic value in the deployment of quality practices and the impact on business performance. Finally, the impact of contingency factors on the quality practice / performance relationships are discussed. The chapter concludes with a summary and implications of the outcomes, the study significance and limitations, recommendations and possible directions for future related work.

1.11 CHAPTER SUMMARY

This chapter provided an introduction to, and orientation of the study. The background placed the work within South Africa's socio-economic context leading to the motivation behind the study. The problem statement, objectives and research questions established the platform for the research design. Details of the design were provided outlining the key processes that would lead to answering the research question. The delimits and limitations of the study were pointed out together with the assumptions made. The chapter concludes with a detailed description of the structure of the thesis.

The next chapter provides an overview of both the international and South African contact centre industries. The current trends and shifting focus towards improved quality sets the scene for the current research study.

CHAPTER 2

THE CONTACT CENTRE INDUSTRY

2.1 INTRODUCTION

Contact centres have evolved in tandem with the rising expectations of the modern consumer. Contemporary contact centres now aspire to offer a personalised, omnichannel experience via the integration of analytics and multiple digital channels. This chapter provides an overview of the contact centre industry.

The global trend in terms of Business Process Outsourcing (BPO) is examined together with the motivation for offshoring. Maintaining the international perspective, the market size and potential is presented, followed by an analysis of the positioning of major players in this space. The structure, characteristics and value proposition of the South African contact centre industry provides a perspective within the global context. The shift in focus from cost to quality provides the link to the current research.

2.2 THE SERVICE REVOLUTION AND THE CONTACT CENTRE

The turn of the century has ushered in an information and technological revolution that has profoundly altered the social landscape. The sheer volume and instant availability of information underpinned by ubiquitous internet connectivity and mobile technology have naturally shortened the attention span and hence loyalty of the modern consumer. Service expectation levels are rising and, given the myriad of options available, consumers are willing to seek out companies that meet this demand. A recent white paper (Calibrio, 2017) found that 90% of consumers polled have switched allegiances at least once in the previous 12 months. The negative impact of dissatisfied customers has been dramatically amplified by the unprecedented reach and pace of social media. NewVoice Media estimates that poor customer service costs U.S. companies about $41 billion a year (Calibrio, 2017).

Recognising the negative impact of inferior customer service, businesses across sectors are re-aligning their strategies to include customer service as a key competitive differentiator. Forrester (cited in Calibrio, 2017) found that “customer service is now second — behind sales — among strategic investments companies are making for the near future”. With a company’s contact centre being, at most times, the only point of contact with its customers, business leaders have embraced the strategic value of their contact centres as a key element in the drive to increase customer retention, attract new customers and achieve incremental revenue.

As they are able to service massive customer bases from a lower cost, consolidated environment, contact centres have become a significant part of the global economy. Contact centres exist in hundreds of industries, most prominently in financial services, telecommunications, and the travel industry (Benner, 2006). According to Russell (2008), "Contact centres have, over the past decade, become a central element in the way information services are produced and delivered to the public" and "since their appearance on the scene in the early 1990s, contact centres have become the most important source of customer contact in the developed information economies" (Russel, 2008:195). At the 2007 Inaugural Contact Centre Global Forum it was stated that "over 80% of all customer interactions happen through call centres and that the industry employs six million people worldwide"(Khuzwayo, 2007 cited in Banks and Roodt, 2011:2).

In 2007 Holman and Wood (cited in Banks and Roodt, 2011:2) defined a Call Centre as:

"A work environment in which the main business is mediated by computer and telephone-based technologies that enable the efficient distribution of incoming calls (or allocation of outgoing calls) to available staff, and permit customer-employee interaction simultaneously with the use of display screen equipment and the instant access to, and inputting of, information."

In the current (2019) environment, a seemingly minor adjustment of the above definition (i.e. replacing the word "calls" with the word "contacts") signifies a colossal shift in this service phenomenon. According to Dimension Data's '2016 Global Contact Centre Benchmarking Report', most centres now offer up to nine contact channels. These include the recent inclusion of digital channels such as social media, webchat and mobile (smartphone) applications. A key finding here was that "the volume of digital interactions was on track to exceed phone contacts by the end of 2016," (Dimension Data, 2016:5). This point brings into focus the forward-looking modern conceptualisation of contact centres as being "heterogeneous organisations taking a variety of forms and offering different types of service" (Bishop et al, 2003, cited in Panday & Rogerson, 2014:210).

The percentage of digital interactions is expected to increase due to digital channels such as social media and mobile applications being the preferred communication mediums of younger generations. Furthermore, Forrester research found that 95% of customers communicate with companies via more than one channel (Calibrio, 2017). In this environment, the modern consumer will increasingly expect a personalised, omnichannel experience which requires a seamless integration of multiple channels that provide a comprehensive picture of the consumer and interactions.

2.3 GLOBAL TREND – BUSINESS PROCESS OUTSOURCING (BPO)

A useful distinction in the contact centre environment defines a centre according to the client that it serves. 'Captive' centres are those that are part of a larger organisation and are setup specifically to service the needs of that organisation. 'Outsourced' centres, on the other hand, are specialised companies providing contact centre services to multiple clients based on some form of Service Level Agreement (SLA). This practice is commonly known as Business Process Outsourcing (BPO). According to Naidoo & Neville (2006:76), outsourcing is "the delegation of tasks or jobs from internal production to an external entity". In its broadest sense it refers to "the practice of hiring a third-party supplier to carry out some of the functions of an organisation" (Naidoo & Neville, 2006:76). Lacity et al (2011:231), in their study of BPO research, found "strong empirical support that what drove most outsourcing decisions was the desire to reduce costs, improve performance, and/or speed up delivery on what is viewed as a non-core business process better provided by suppliers with superior skills, expertise, and scalability".

2.3.1. THE OFFSHORING MOTIVATION

According to Panday & Rodgerson (2014), non-essential services were initially outsourced to deindustrialized regions within the same country. This is supported by Benner (2006), who found that in the 1990s most growth was in secondary cities in developed nations, such as Omaha, Tampa and Tucson in the USA, or Glasgow and Newcastle in the UK. However, increasingly, contact centre work has moved to lower cost locations offshore – known as 'Offshoring'. Bardhan and Kroll (2003) cited in Benner (2006) argued that as many as 14 million US jobs had the potential to be outsourced overseas. Vira & James (2011), cited in Panday & Rodgerson (2014:208), stated that "the offshoring of BPO is inseparable from broader processes of globalization whereby labour-intensive activities have increasingly shifted from countries in the global North, to the global South where labour is considered relatively cheaper and more widely available". Aziz (2013, cited in Panday and Rodgerson, 2014:208) indicated that "intense competitive pressures to reduce costs between multinational enterprises has prompted a host of organisations to offshore and relocate their non-core operations to low cost destinations, such as India and the Philippines".

Naidoo &Neville (2006:5) found that "the factors driving the international industry include the existence of a strong skills base in low-cost developing countries; access to a low-cost global communications and computing infrastructure; overpricing of scarce skills in developed countries; globalization and global competition; the need to spread business risk across multiple geographies; and constraints to the further expansion by service providers in the current leading BPO locations". This is supported by the more general globalization of the world economy, making the movement of money and goods increasingly easier (Naidoo & Neville, 2006).

Holman et al (2007:4) observed that the international spread of contact centres were uneven and influenced by "historic language and cultural ties such as those between France and Morocco, Spain and Latin America, UK/US and English-speaking countries such as India, Ireland and South Africa".

Naidoo and Neville (2006) asserted that the characteristics of the industry closely match the needs of the region and the goals of government where "it is a non-extractive, labour intensive export-oriented service industry, capable of attracting inward investment, with a wide range of upstream benefits and potential economic multipliers" (Naidoo & Neville, 2006:5).

2.3.2. MARKET SIZE AND POTENTIAL

Developing countries have benefited significantly from the offshoring trend and will continue to do so. A recent research report compiled by Global Industry Analysts, Inc. (2016) states that "the global market for Call Centres is projected to reach US$407 billion by 2022, driven by the unrelenting focus of businesses across all sectors on delivering truly customer-centric services and the resulting need for call centres as a critical touch point for customer interactions." (Global Industry Analysts, Inc., 2016) According to IDC research, the "opportunities for the BPO market are still enormous, estimating that that only $68 billion of the Fortune 500's $1.3 trillion non-core cost base is currently outsourced" (Lacity et al, 2011:222). In line with these bullish estimates, Deloitte (2013) found that "77% of contact centres expect to maintain or grow in size in the next 12-24 months with expansion plans being driven by the need to improve service and/or to support business growth"(Deloitte, 2013:6). The London School of Economics (2012) synthesis of the reports from Everest, Gartner, NASSCOM and IDC suggested growth of BPO of "8-12% per annum, and subsumed within these, offshore outsourcing growing at an even faster annual rate"(Willcocks et al, 2012:5).

2.3.3. MAJOR BPO PLAYERS

India, with BPO revenues in excess of $68 billion leads the captive and offshore outsourcing market, followed by the Philippines with $11billion in revenues. According to the London School of Economics, "these countries now have major offshore industries and will use this base to accelerate their growth over the next five years. Indian providers are increasingly providing best-shoring models, mixing skills onshore (close to the customer), offshore and 'anyshore' in the search for optimal price points and labour skills pools" (Willcocks et al, 2012:24). The Business Trust (2009:4) pointed out that "India created 1 172 000 new jobs in the sector between 2005 and 2008 and the Philippines 271 465 during the same period".

India and the Philippines are known as the lowest cost, lower task-complexity destinations that are difficult to compete with, especially in terms of scale. Other significant BPO destinations tend to seek service niches to differentiate their offering. (Willcocks et al., 2012). These include:

- ✓ Sri Lanka which gets overflow work from India at a lower cost and gaining momentum in software development, accounting and legal processing.
- ✓ Morocco "nearshores" to Western Europe.
- ✓ Egypt capitalises on its favourable time zone with Europe and is growing in IT services.
- ✓ Malaysia markets its cost competitiveness with good English, technical skills and infrastructure.
- ✓ Poland targets nearshore work from Europe offering good technical and engineering skills.
- ✓ Northern Ireland looks to capitalises on being nearshore to Europe and links with the US.
- ✓ Kenya is seen as a start-up with potential in IT, voice and back office services.
- ✓ South Africa is seen as a rising BPO destination with a good balance between cost and service quality. Further elaboration on the South African case will follow.

Countries that offer the right mix of lower costs, reliable service and secure location may capitalise on opportunities presented in the highly competitive global services market. In their whitepaper, the Site Select Group, LLC (2016) concluded that finding the optimal location for expansion continues to be a complicated question and requires extensive analysis to figure out the right answer.

2.4 THE SOUTH AFRICAN CONTACT CENTRE INDUSTRY

The earliest contact centres in South Africa were established in the 1970s, gaining momentum in the 1980s via companies with high customer contact requirements, mainly in the financial sector. The industry established a foothold with prominent companies such as Sanlam, Old Mutual, Woolworths Financial Services and Discovery Health among others, commissioning captive contact centres to service their own client bases (Business Process Enabling South Africa, 2015). According to Benner (2006), cited in Panday & Rogerson (2014) further growth took place in the 90s and accelerated after the 1994 democratic transition. However, it was advances in computing technology and reduction of telecommunications costs in the late 90s that contributed to the rapid expansion of the industry. In 1998, Lufthansa became the first offshore operation to outsource to South Africa (Panday & Rogerson, 2014).

2.4.1. INDUSTRY STRUCTURE AND CHARACTERISTICS

Benner et al (2007:7) stated that "call centres in South Africa are broadly in-line with patterns across the rest of the globe in terms of size, the mix of in-house and outsourced firms, ratio of

inbound/outbound calls, and broadly similar patterns of work organisation and job design". They further noted "that the majority of call centres in South Africa serve a domestic market and employ only a few dozen workers with a median of 24 employees compared to the international median of 49" (Benner et al 2007:43). In terms of size, the best industry estimates suggest that there was a total of 185 call centres in 1997, increasing to 535 by 2002, and to 653 call centre operations by 2004 (Pandy & Rogerson, 2012). A national audit in 2007/2008 suggested that there were a total of 1,342 confirmed call centres across South Africa (C3 Africa Research 2008, cited in Pandy and Rogerson, 2012). Industry stakeholders estimate approximately 1,500 call centres were in operation in 2012 (Rogan et al, 2013) and today approx. 2000 centres - based on trade association statistics.

According to Business Process Enabling South Africa (2015), contact centres contributed approximately R50 billion to the country's Gross Domestic Product; employ approximately 215000 people with an estimated 26,700 servicing international markets. Captive centres account for 64.1% of the total market with outsourcers at 35.9%. From a vertical perspective, the financial services sector accounts for 50% of the total market. The UK market is responsible for 59.9% of offshore business in South Africa, with Australia the next largest market at 22.4% (Business Process Enabling South Africa, 2015).

2.4.2. GOVERNMENT SUPPORT

Given the industry's promising youth employment potential, in 2005 the South African government identified Business Process Outsourcing and Offshoring (BPO&O) as a priority sector, highlighting it as one of two sectors for specific support in the governments' 'Accelerated and Shared Growth Initiative for South Africa' (ASGISA) (The Presidency Republic of South Africa, 2010), the over-arching economic development strategy guiding South Africa's development since the 2004 election. As per the Minister of Trade and Industry, "a plan was developed to improve infrastructure, deepen the talent pool, create incentives, market South Africa's inherent strengths to the international community, strengthen the industry association and assure quality. By the end of 2006, Cabinet had approved a substantial Government Assistance and Support (GAS) Programme that would provide over R1 billion to stimulate this sector" (The Business Trust, 2009). The GAS incentive programme that ran from 2007 to 2010 resulted in 6000 new jobs and R303 million in direct investments (Department of Trade and Industry, 2010, cited in Rogan et al, 2013). Considered a success, the BPO sector, renamed Business Process Services (BPS) sector was then identified as a strategic key sector within the DTI"s Industrial Policy Action Plan (IPAP 2) – 2012/13 – 2014/15 (Department of Trade and Industry, 2010). Government support has been implemented via a BPS incentive scheme and the Monyetla Work Readiness Programme.

The incentive scheme has two main objectives. Firstly, it subsidises the cost of employment thus making South Africa compete more effectively with lower cost destinations such as India and the Philippines. Secondly, it offers an additional incentive for complex processes thereby promoting efforts to move up the value chain. Since 2011 the scheme has created over 16000 jobs and supported over 50 projects. Adding the jobs created by companies that have not accessed the scheme brings the total number of agents servicing offshore markets to approximately 26700 (Business Process Enabling South Africa, 2015).

The Monyetla Work Readiness Programme is a sector-specific initiative that aims to build a pool of talent from unemployed youth. The DTI in partnership with the Department of Higher Education and Training, and Department of Labour through the National Skills Fund (NSF), hoped that the programme will "contribute to accelerated job creation, economic growth and equity" (The Business Trust, 2009).

2.4.3. THE SOUTH AFRICAN VALUE PROPOSITION

The international BPS community increasingly recognises South Africa as a world class customer service destination. The country has been the recipient of many international awards including the 'Offshoring Destination of the year' in 2012 (National Outsourcing Association - NOA) and 2013 (European Outsourcing Association – EOA). Additionally, South Africa received the 2014 NOA Professional Awards, Skills Development Project of the Year and was nominated for best offshore destination of the year for the 2015. (Business Process Enabling South Africa, 2015).

According to the London School of Economics (Willcocks et al, 2012:30), the key reasons that organisations look to offshore to South Africa include "the need to scale to support business growth; lack of onshore capability or high attrition rates; need to match onshore customer experience at a lower price point; brand protection at lower price point and disillusion with customer service from another offshore location". Industry reports published by and Frost and Sullivan (2012) and Nelson Hall (2015) emphasised the following points that made the South African BPS offering attractive:

- ✓ Lower cost of operations largely due to exchange rate arbitrage and reduced labour costs.
- ✓ Excellent infrastructure, i.e. telecoms networks, transport, property and financial services.
- ✓ A large pool of articulate English-speaking agents with neutral accents.
- ✓ Cultural affinity with key markets such as the UK, US and Australia.
- ✓ A first world experience in terms of lifestyle.
- ✓ A service orientated culture that takes pride in servicing international clients.
- ✓ Lower attrition levels than onshore operations.
- ✓ Deep domain skills in Financial services and Legal Processing.

Everest (2011), cited in Willcocks et al (2012) reported that South Africa offers a 50-60% cost reduction compared to source destination and is 10-20% cheaper than Central and Eastern Europe. Government incentives and grants reduce costs by 15-20% enabling competition with low cost destinations such as Egypt, the Philippines and India.

Respondents to the Nelson Hall study (2015) cited benefits that include an equal or better customer experience than onshore equivalents. Such benefits have led to global BPS operators such as Aegis, Capita, CCI, EXL, Infosys, Merchants, Serco, Teleperformance, Webhelp and WNS setting up operations in South Africa. International brands such as Amazon, Asda, Bloomberg, British Gas, EE, Direct Line Group, iiNet, 02, Shell and Shop Direct have also chosen South Africa as a strategic customer service location (Business Process Enabling South Africa, 2015). As per Nelson Hall (2015:5) "Telecoms, ISPs, high tech companies, online retailing and home shopping were the dominant sectors serviced but insurance, financial services and media were increasingly being represented".

According to Frost and Sullivan (2012:5), "the South Africa BPO and contact centre market earned revenues of $1.3 billion in 2010. This was estimated to reach $3.06 billion in 2016, a compound annual growth rate (CAGR) of over 19% for this period".

2.4.4. THE SOUTH AFRICAN BPO SKILLS CHALLENGE

As pointed out by The London School of Economics (Willcocks et al, 2012:37), the "rising demand would, ironically, create problems from success". This statement was made in reference to the shortage of adequate skills to meet the demand – similar to the Indian experience. Here, the rapid demand led to a skills shortage that resulted in increased labour costs, ultimately eroding the country's cost-based competitive advantage. Respondents in this study further pointed to a specific problem with skills at the middle management level.

As far back as 2006, Benner asserted that if the South African government wanted to take advantage of the BPO opportunities, it needed to do more than simply market the country internationally. Instead, it needed to take a longer-term perspective and "embrace human capacity development as a central element of its strategy" (Benner, 2006).

Having acknowledge the accelerating rate of foreign investment into the South African BPS space, Business Process enabling South Africa (BPeSA), the industry body tasked with enabling the country's BPS industry, has shifted its focus from international marketing to skills development. This includes the institutionalising of the skills supply chain together with the development of sector-specific qualifications (Business Process Enabling South Africa, 2015). Addressing the skills challenge would contribute significantly to improved service quality.

2.5 A FOCUS ON QUALITY

Taylor and Bain (2005), cited in Russel (2008) argued that the decision on the location of call centres was primarily driven by the interrelated objectives of cost minimisation and profit maximisation. Accordingly, other objectives such as improved customer service remained secondary to this mandate. However, as pointed out by Benner (2006), the interactive element of the work brings in a wide range of cultural, linguistic, communicative and learning process factors that may be potentially more important than the cost consideration.

As per Teodoru (2008) cited in Banks and Roodt (2011:4), "The 2008 Contact Centre Satisfaction Index indicated that 95% of customers who had satisfying experiences with contact centre agents would do business with the company again". Banks and Roodt (2001:4) also cited Fornell el al (2006) quoting that "the American Customer Satisfaction Index concurred and illustrated a significant link between customer satisfaction and organisational profitability".

Nelson Hall (2015) found that emphasis on the quality of interaction is increasing mainly due to simpler tasks being handled by digital self-service channels while agents focus on more complex aspects of service interactions. This shift is driven further by companies now using customer service to drive sales and revenue protection. Deloitte (2013:6) revealed that "62% of organisations now view customer experience provided through contact centres as a competitive differentiator and 82% recognized 'accuracy and quality of information' as the most important customer experience attributes. Further, 56% of organizations believe that cost and quality management are equally important".

The increasing emphasis on quality is supported by the many highly publicised cases of outsourced work returning to the USA from India due to customer quality concerns (Benner, 2006). The Call Centre Location Trend Report (Site Selection Group, LLC, 2016:5) indicated an "expansion of onshore contact centre operations in the United States during 2015. As in previous years, many companies reshored operations from the Philippines and other offshore markets as they sought to improve quality levels despite higher costs". The report estimated that 281 contact centres opened or expanded within the United States in 2015.

Given the recent BPO trend of reshoring due to quality concerns, countries that offer a better balance between cost and quality, like South Africa, may find increased market opportunity. Nelson Hall (2015) stated that one of the key reasons clients considered South Africa was their disillusionment with other offshore destinations. The London School of Economics (Willcocks et al, 2012) found that even though India, the Philippines and Kenya ranked above South Africa in terms of cost, respondents stressed that while lower cost was necessary, it was an insufficient determinant of their outsourcing and offshore decisions. Clients consciously established a cost-

service trade-off at a higher cost point for superior service, due to the work being customer facing and critical to their business. Clients such as Mercedes Benz, Amazon, British Gas, etc. could not risk the customer experience and thus their brands when choosing offshore locations. Respondents in the study were in agreement that "service" was the "not so secret sauce" of South Africa's performance success thus far (Willcocks et al, 2012).

2.6 LINK TO CURRENT STUDY

While service has proven to be key to South African advancement in the international BPS space, cost pressures remain a fundamental driver. According to Russell (2008), "the quandary that managers face has become more diverse and complex with the 'two boss phenomenon' – efficiency demands from the company and quality demands from the customer". Centres thus operate with competing mandates commonly referred to as the quantity / quality trade-off. The task of contact centre management is to balance these priorities.

It follows that, in order to maintain the competitive momentum amidst intense international rivalry, it is imperative that lower operational costs be realised by focusing on quality practices that have the highest impact of business performance. While the relationship between quality practices and business performance has been investigated across various industry sectors from as far back as the early 90s (as will be detailed in the Chapter 3 of this study), such relationships have not been empirically investigated in the contact centre environment and specifically not in the South African context. The primary objective of this study is to address this gap by developing a model that reveals the nature of the quality practice / performance relationships that should serve as a valuable context-specific industry reference.

2.7 CHAPTER SUMMARY

This chapter provided an overview of the contact centre industry. In order to remain competitive contact centres must meet the rising expectations of the modern consumer. This includes offering personalisation and integration of the customer experience across multiple digital channels.

The global trend in terms of Business Process Outsourcing (BPO) was examined together with the motivation for offshoring. The global market size and potential was presented, followed by the positioning of major players in this space. The structure, characteristics and value proposition of the South African contact centre industry provided a perspective within the global context. The shift in focus from cost to quality led to the link with the current research.

The next chapter presents the literature review on quality management that establishes the foundation for a quality practice / performance model.

CHAPTER 3

LITERATURE REVIEW

3.1 INTRODUCTION

This chapter undertakes the literature review on quality management and its impact on performance. The initial focus is on defining the quality construct. The key literatures sources include prescriptive literatures from early authors, significant academic studies spanning the last three decades, international quality awards criteria, industry relevant quality standards and prominent industry reports. The emphasis then moves to defining performance measures and relevant contingency factors. Literature on the modelling of the quality practice / performance relationships and the impact of quality practices on performance concludes the chapter.

3.2 QUALITY MANAGEMENT

According to the American Society for Quality (ASQ), the concept of 'Quality Management' in business focuses on improving business performance via the elimination of errors in the production of goods and services, in an effort to optimally satisfy the needs of customers. A Quality Management System (QMS) is a formal system that documents processes, procedures and responsibilities for achieving the quality objectives, i.e. meeting customer needs while continuously improving effectiveness and efficiency (American Society for Quality (ASQ), 2016). It aims to instil a corporate culture where every contributor is mindful of, and motivated by, the set standards and goals throughout the life cycle of a product or service.

Attempting to identify the exact origins of quality management is a difficult task. According to Powell (1995), the Union of Japanese Scientists and Engineers (JUSE) formed an association of engineers and officials in 1949 to improve manufacturing productivity as a means of enhancing the quality of life in Japan after the Second World War. Deming, however, refers to Dr Shewhart's work on statistical processes in the 1930's (Walton, 1986 cited in Dow et al, 1999). Nevertheless, the quality movement gained momentum in the 50s through 80s and to a large extent was credited with the success of Japanese industry. Key quality innovations included techniques such as quality circles, supplier partnerships and cellular manufacturing (Powell, 1995).

In the 1980s, American firms started taking serious notice of quality programmes only after losing significant market share to Japanese companies. They realised that living off past successes would relegate the US to second-tier economic status with world trade being dominated by Japan and other Asian economies (Grayson and O'Dell, 1988, cited in Powell, 1995). Early, high-profile US adopters of quality programmes included Ford, Xerox and Motorola. Their highly-publicised

successes led to a large portion of US manufacturers adopting programmes such as Total Quality Management (TQM) by the end of the 1980s (Little, 1992). According to Adam Jr. (1994), by 1986, the top three manufacturing strategies were all quality-related. TQM advocates claimed that benefits such as improved products, reduced costs, satisfied customers and employees and improved financial performance could be realised in any organisation including manufacturing, service, non-profit or government (Walton, 1986 cited in Powell, 1995).

3.3 DEFINING THE QUALITY CONSTRUCT

In order to successfully achieve the fundamental objective of this research, i.e. to understand the impact of quality practices on business performance in the South African contact centre industry, it is essential that the meaning of 'Quality' is clearly defined and understood. According to Sluti (1992:7), "Dictionary definitions of quality have many connotations of meaning. Quality can mean (1) an essential or distinctive character or property or attribute; (2) a character or nature, as belonging to or distinguishing a thing; (3) a character with respect to fineness or grade of excellence; (4) high grade, superiority, or excellence; and so on." The multiple meanings result in confusion when the term is used. In the following paragraphs the various streams via which the quality construct has gained definition will be considered.

3.3.1 EARLY CONTRIBUTORS

The first four decades of Quality Management literature (approx. 1950 to 1990) focused almost exclusively on quality management practice (prescriptive literature) developed by authors who worked either as consultants, researchers or managers across various organisations. The most prominent of these authors include Deming (1981, 1982, 1986), Juran (1970, 1986) and Crosby (1979), who prescribed steps for organisational quality improvement (Saraph et al, 1989).

Deming initially approached quality management from a statistical point of view using control techniques in the manufacturing environment. His theories rests upon his system of 'profound knowledge', his 14 principles of quality management, and the Deming Cycle (Deming, 1981).

Deming's system of profound knowledge, forming the basis of his quality principles, includes the concepts of ***System Appreciation*** where role players must have a clear understanding of the way in which the company's systems and processes work; ***Variation Knowledge*** i.e. an understanding of the variations that occur and the causes of the variations; ***Knowledge Theory*** which is an understanding of what can be known and ***Psychology Knowledge***, i.e. an understanding of human nature. Deming (1981) asserted that only when there is an awareness of these various types of company related knowledge, can quality be considered a topic of

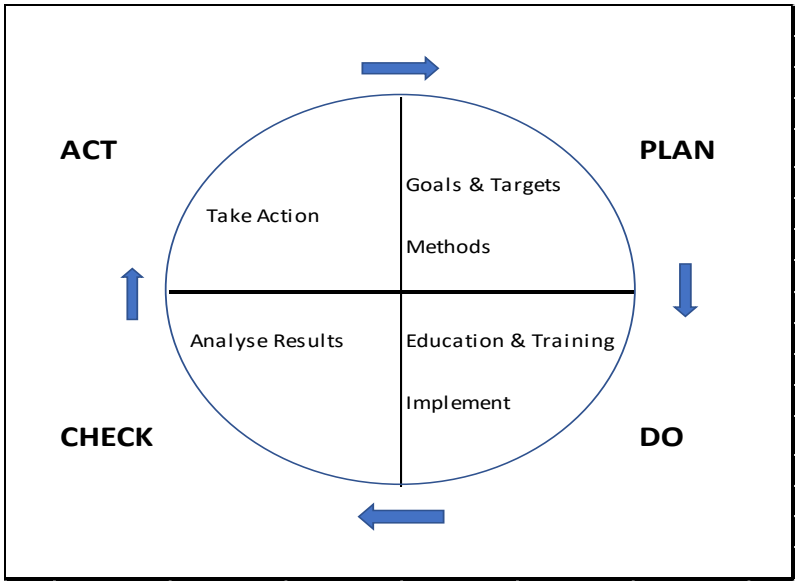
discussion - for quality management includes the manipulation of processes based of the broader organisation-wide knowledge.

Deming is most widely known for his fourteen points for quality management (Deming, 1986). These points significantly influenced the work of researchers that followed by providing a basis for definition of quality practice constructs. The key construct indicators are highlighted within the fourteen points, as follows:

- *Create a constancy of purpose towards improvement of products and services*. A company's aims should be defined in terms of a mission statement and guiding principles. Innovation should be encouraged supported by the allocation of resources for **education and training**. Short-term reaction should be replaced with long-term planning.
- *Adopt the new philosophy*. **Management** should not merely articulate quality principles but actually demonstrate **commitment** through implementation i.e. walk the talk. Improvement efforts should be selected within the span of control.
- *Cease dependence on inspection to achieve quality*. The focus should be on **improving the process** to manage variations which should eliminate the need to inspect for defects.
- *Stop awarding business to suppliers based on price*. The quality programs of **suppliers** should be evaluated, and suppliers should be incorporated into the team thereby helping to design the process. There should be a move towards a single supplier for any one item given that multiple suppliers introduce the possibility of increased variations.
- *Improve constantly and forever every process for planning, production and service*. Quality must be built into the design stage supported by **teamwork** and test **methods** must be constantly improved aiming to constantly decreasing costs.
- *Institute training on the job*. Central to **training** is the need to understand variations. Management needs to be trained on company processes and provide the foundation for training of new employees. Adequately trained staff will work the same way thus reducing variations.
- *Adopt and institute leadership*. The job of management is not supervision but **leadership**. Leaders should be working on sources of improvement and not constantly supervising established processes.
- *Abolish fear from the company*. In the long-term, fear prevents employees from acting in the company's best interest. **Company goals** and results should be communicated, and employees should be encouraged to participate in setting goals for their own processes.
- *Deconstruct departmental barriers*. **Teaming** across departments should be encouraged while the goals of each group should be clearly understood and disseminated. Implement the concept of the 'internal customer' where each department serves other departments.

- *Eliminate slogans*. Recognise that it is not people that make the most mistakes – it's the processes within which they work. Management has the responsibility to constantly analyse and **improve the processes** in order to reduce employee mistakes.
- *Eliminate management by objectives*. Production targets encourage the delivery of poor-quality goods. The focus should be on **customer satisfaction** and quality and not quantity.
- *Remove barriers to pride of workmanship*. Management by number and not quality does not facilitate pride in one's work which reduces **employee satisfaction**.
- *Institute education and self-improvement for everyone*. Self-improvement encourages **employees to take responsibility** for themselves and their work. Harassing the workforce without encouraging improvement and responsibility is counter-productive.
- *Transformation is everyone's job*. Ensure that **all role players** understand that survival through transformation of the company is everyone's responsibility.

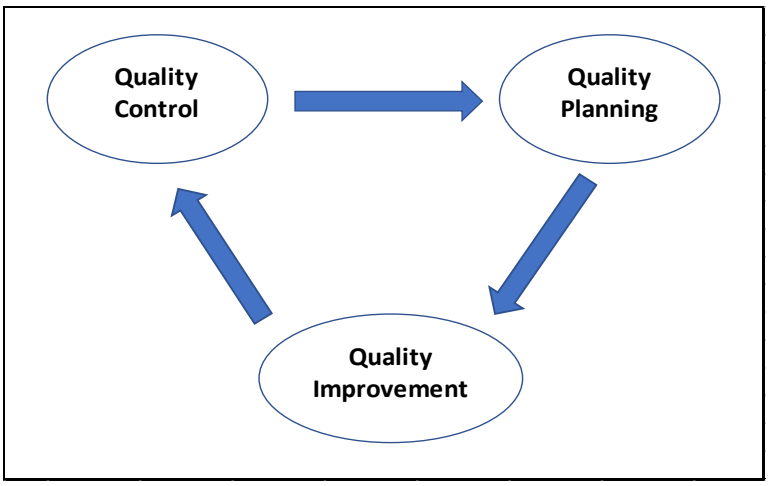
The 14 points are reinforced by the Deming Cycle (Deming, 1986), as shown in Figure 3.1. The model proposes a four-step iterative process that may be used by organisations for the control and continual improvement of products and processes. The steps include ***Plan*** which includes identifying a process that can be improved, establishing objectives i.e. the expected outputs and figuring out how to achieve the improvement (method); ***Do*** involving education and training that leads to enacting the plan set out in the previous stage - in order to maintain control, small changes are usually implemented to check for effectiveness; ***Check*** where data gathered from the implementation stage is checked / evaluated against the expected outcomes and ***Act*** – taking appropriate action to either adopt the change, abandon it, or correct issues and begin again.



Source : Deming (1986)

Figure 3-1: Deming Cycle (P-D-C-A)

Like Deming, Juran is considered an early leader in the field. His work focused on management and technical aspects of quality and culminated in his three basic processes that have become known as the 'Quality Trilogy'. As depicted in Figure 3.2, the quality trilogy consists of quality planning, quality control and quality improvement (Juran, 1986). Juran asserted that in order to achieve a successful quality improvement project, the improvement tasks must be carefully planned and controlled.



Source : Juran & Godfrey (1999)

Figure 3-2: Juran's Quality Trilogy

Definition of quality practice constructs may be extracted from Juran's basic processes, as highlighted below:

Quality planning is defined as a "structured process for designing products and service that meet new breakthrough goals and ensure that customer needs are met" (Juran & Godfrey, 1999:2.6). Steps involved are establishing the project, identifying the **customers** and their **needs**, developing the **product** and **process**, developing the **controls** and transferring to operations.

Quality control is defined as "a process for meeting the established goals by evaluating and comparing the actual performance and planned performance" (Juran & Godfrey, 1999:2.6). Steps include choosing the control subject, establishing the **measurement and performance standards**, measuring the actual performance, comparing to standards and taking action on the difference.

Quality improvement is defined as "a process for creating breakthrough levels of performance by eliminating wastes and defects to reduce the cost of poor quality" (Juran & Godfrey, 1999:2.6). Steps include proving the need for improvement, identifying the improvement project, establishing the **team** and enabling the team with **resources, training** and motivation to diagnose causes, stimulate remedies and establish controls to hold the gains.

Juran further stressed the 'fitness for use' principle advocating that quality begins with the 'who, how and why' customers will use it – in other words, **all improvement activities should be customer focused** (Juran & Godfrey, 1999). Specific strengths of Juran's contribution is the emphasis on interaction and communication between companies and their current and potential customers, emphasising a strategically planned, step by step process of quality improvement and rewards based on results.

In contrast to Deming and Juran, Crosby emphasised the cultural and behavioural aspects of quality management. His work was based on what he called the 'four absolutes of quality improvement'. These include : Quality means conformance to requirements, not goodness; Quality is achieved by prevention, not appraisal; Quality has a performance standard of 'Zero Defect', not acceptable quality levels and; Quality is measured by the price of nonconformance, not indexes Crosby (1979).

In his very successful book (Crosby, 1979), he set out his fourteen steps to creating quality. The details are include in Table 3.1, alongside Deming's and Juran's principles detailed earlier (Saraph et al, 1989).

Other significant early authors in the field include Ishikawa (1976), Mondon (1982) and Leonard and Sasser (1982). Details of their work may be found in the references.

Table 3-1: Early Contributors to Quality Management

Deming	Juran	Crosby
1. Constancy of Purpose	I. Quality Planning	1. Management commitment
2. Adopt the Philosophy	Set goals	2. Quality improvement teams
3. Don't rely on mass inspection	Identify customers and their needs	3. Quality measurement
4. Don't award business on price	Develop products and processes	4. Cost of quality evaluation
5. Constant improvement	II. Quality control	5. Quality awareness
6. Training	Evaluate performance	6. Corrective action
7. Leadership	Compare to goals and adapt	7. Zero-defects committee
8. Drive out fear	III. Quality improvement	8. Supervisor training
9. Break down barriers	Establish infrastructure	9. Zero-defects day
10. Eliminate slogans and exhortations	Identify projects and teams	10. Goal-setting
11. Eliminate quotas	Provide resources and training	11. Error cause removal
12. Pride of workmanship	Establish controls	12. Recognition
13. Education and retraining		13. Quality councils
14. Plan of action		14. Do it over again

Source: Powell, 1995

Given that most authors worked as industry consultants or managers, their emphasis of the various aspects of quality management was based on experience as opposed to rigorous empirical research.

3.3.2 EMPIRICAL STUDIES

The first known quality management empirical study was conducted by Garvin (1983). He developed a set of critical factors based on observations of air conditioner manufacturers in Japan and the United States. Later, Saraph et al. (1989) extracted 120 prescriptions (based on the prescriptive literature mentioned in the previous section) that were consolidated into eight factors. Using generally accepted psychological principles they developed the first quality management measurement instrument that was shown to be both reliable and valid. The almost three decades that followed (until present day) saw innumerable authors investigate the impact of quality practices on business performance across various industries in various locations.

The profiles of some of the key studies are shown in Table 3-2.

Table 3-2: Profiles of prominent Empirical Research on Quality Management

Study	Study Profile		
	Industry	**Location**	**Sample Size**
1989 Saraph et al.	Manufacturing / Service	USA (Minneapolis)	20
1991 Benson et al.	Manufacturing / Service	USA (Minneapolis)	20
1992 Sluti	Manufacturing	New Zealand	184
1994 Flynn et al.	Manufacturing (Transport / Electronics)	USA	42
1994 / 1995 Anderson et al.	Manufacturing (Transport / Electronics)	USA	41
1995 Powell	Manufacturing / Service	USA (northeast)	36
1995 Flynn et al.	Manufacturing (Transport / Electronics)	USA	45
1996 Ahire et al.	Manufacturing (Automotive)	USA	371
1997 Mersha	Various	Sub Saharan Africa	N/a
1999 Dow et al.	Manufacturing	Australia/New Zealand	698
2000 Das et al.	Manufacturing	USA (50 States)	290
2000 Zhang	Manufacturing	Netherlands	10
2001 Fynes and Voss	Manufacturing (Electronics)	Ireland	200
2001 Douglas and Judge	Service (Hospital)	USA	193
2003 Kaynak	Manufacturing / Service (85/15)	USA (38 States)	214
2006 Joiner	Manufacturing (Automotive)	Australia	80
2006 Yeung et al.	Manufacturing (Electronics)	Honk Kong	225

2006 Nair	Various	Various	N/a
2007 Sila	Manufacturing	USA	286
2008 Salaheldin	SME	Qatar	139
2010 Jayaram et al.	Manufacturing	USA	394
2012 Zhang et al.	Manufacturing	8 Countries	238
2013 Fening et al.	Manufacturing	Ghana	101
2014 Wu	Manufacturing	China	397
2016 Abubakar & Mahmood	SME	Nigeria	212
2016 McAdam et al.	SME	UK	5
2016 Basu and Bhola	Services (IT)	India	20

Table 3-3 includes the common quality management dimensions that emerge from these studies.

Table 3-3: Quality Management Dimensions based on Empirical Research

Quality Management Dimension	Support
Top Management Support / Visionary Leadership	Saraph et al (1989), Flynn et al (1994) , Powell (1995), Flynn et al (1995), Anderson et al (1995), Ahire et al (1996), Zhang (2000), Fynes et al (2001), Douglas and Judge (2001), Kaynak (2003), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Fening et al (2013), Wu (2014), Basu and Bhola (2016)
Quality Department	Saraph et al (1989), Ahire et al (1996)
Training / Quality Training	Saraph et al (1989), Powell (1995), Dow et al (1999), Das et al (2000), Zhang (2000), Douglas and Judge (2001), Kaynak (2003), Salaheldin (2008), Jayaram et al (2010), Zhang et al (2012, Fening et al (2013), Wu (2014), Basu and Bhola (2016)
Product / Service Design	Saraph et al (1989), Flynn et al (1994), Flynn et al (1995), Ahire et al (1996), Zhang (2000), Fynes et al 2001, Kaynak (2003), Nair (2006), Salaheldin (2008), Jayaram et al (2010), Basu and Bhola (2016)
Supplier Quality Management / Supplier Relationships / Supply Chain Management Practices	Saraph et al (1989), Flynn et al (1994), Powell (1995), Flynn et al (1995), Ahire et al (1996), Dow et al (1999), Das et al (2000), Zhang (2000), Fynes et al 2001, Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010) , Fening et al (2013), Wu (2014), Abubakar et al (2016), Basu and Bhola (2016)
Process Management / Ops Procedures / Improve Cycle Time / Reduce Waste	Saraph et al (1989), Flynn et al (1994), Anderson et al (1995), Flynn et al (1995) , Zhang (2000), Fynes et al 2001, Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Zhang et al (2012, Fening et al (2013), Abubakar et al (2016), Basu and Bhola (2016)
Quality data and reporting / Statistical Control and Feedback / Management	Saraph et al (1989), Flynn et al (1994), Powell (1995), Flynn et al (1995) , Ahire et al (1996), Fynes et al 2001, Douglas and Judge (2001), Kaynak

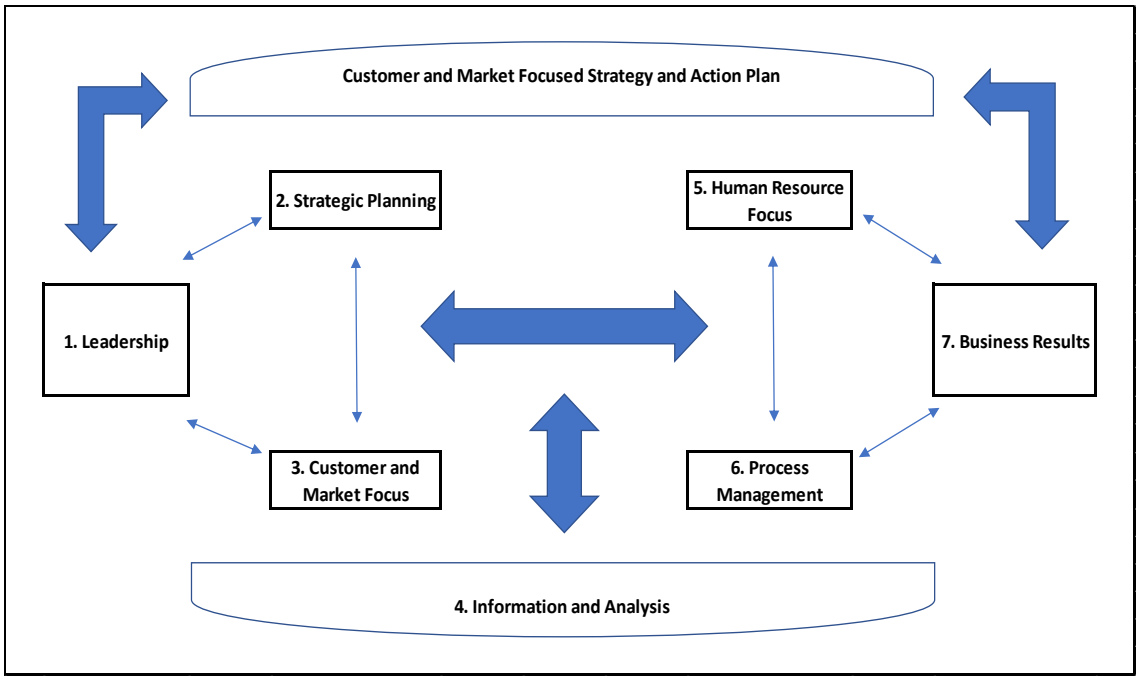
by Facts / Information and Analysis / Use of Information Technology	(2003), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Wu (2014), Basu and Bhola (2016)
Employee Relations / Workforce Management / Participation / Human Resource Management / Empowerment	Saraph et al (1989), Flynn et al (1994), Anderson et al (1995), Powell (1995), Flynn et al (1995), Ahire et al (1996), Zhang (2000), Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Fening et al (2013), Abubakar et al (2016), Basu and Bhola (2016)
Customer Involvement / Customer Focus / Customer Commitment	Flynn et al (1994), Powell (1995), Flynn et al (1995), Ahire et al (1996), Dow et al (1999), Das et al (2000), Zhang (2000), Fynes et al 2001, Douglas and Judge (2001), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Zhang et al (2012, Fening et al (2013), Wu (2014), Abubakar et al (2016), Basu and Bhola (2016)
Internal and External Cooperation	Anderson et al (1995)
Learning	Anderson et al (1995)
Continuous Improvement / Co-ordinate Quality Improvements	Anderson et al (1995), Powell (1995), Zhang (2000), Douglas and Judge (2001), Joiner (2006), Salaheldin (2008), Abubakar et al (2016), Basu and Bhola (2016)
Adopting the Philosophy	Powell (1995), Douglas and Judge (2001)
Benchmarking	Powell (1995), Ahire et al (1996), Dow et al (1999), Salaheldin (2008)
Open Organisation	Powell (1995)
Zero defect mentality / Work Attitudes / Workforce Commitment / Trust	Powell (1995), Flynn et al (1995), Dow et al (1999), Jayaram et al (2010)
Flexible manufacturing / Advanced Manufacturing Systems / Just in Time Principles	Powell (1995), Dow et al (1999)
Shared Vision / Vision and Plan Statement / Involve functional departments in Strategy	Dow et al (1999), Zhang (2000) , Joiner (2006), Abubakar et al (2016)
Use of Teams	Dow et al (1999), Fynes et al 2001, Salaheldin (2008), Zhang et al (2012, Wu (2014), Basu and Bhola (2016)
Quality Resources & Evaluation	Das et al (2000) , Zhang (2000), Salaheldin (2008)
Recognition and Reward	Zhang (2000), Fynes et al 2001
Total Quality Methods / Quality System Procedures / Quality Goals and Policies	Douglas and Judge (2001), Yeung et al (2006), Salaheldin (2008), Basu and Bhola (2016)
Strategic Planning	Sila (2007), Basu and Bhola (2016)
Communication	Fening et al (2013)
Service Reporting	Basu and Bhola (2016)
Content Management	Basu and Bhola (2016)
Service-Level Management	Basu and Bhola (2016)
Information and Security Management	Basu and Bhola (2016)

While at face value there seems to be little consensus on the dimensionality of the quality construct – as evidenced in Flynn et al's (1994) seven core dimensions, Saraph et al's (1989) eight core dimensions or Powell's (1995) twelve variables – there is a core focus that includes **Leadership Involvement, Customer Focus, Human Resources, Supplier Management, Process and Information Management.**

3.3.3 QUALITY AWARDS

A TQM strategy emphasises quality in every aspect of the business, aligned with business objectives and based on customer requirements. Considered a rather abstract philosophy, initially there was widespread confusion regarding its elements and the implementation thereof. The introduction of "Quality Award Models" offered a resolution to the problem (Hongyi et al, 2004). Companies began to look to these awards not just with the intention of applying to participate but also as guides for implementing proven performance excellence initiatives (Vokurka et al, 2000). The most prominent of these is the Malcolm Baldridge National Quality Awards (MBNQA) (USA), the European Foundation for Quality Management (EFQM) Excellence Model and the Deming Prize (Japan) (Vaxevanidis et al, 2006).

Developed by the US Congress in 1987, the purpose of the MBNQA is to promote the awareness of quality together with recognising quality achievements and publicising successful quality management strategies. The model, as depicted in Figure 3.3, focuses on leadership and results within a customer and market focused strategy, supported by information and analysis.



Source : Vokurka et al. (2000)

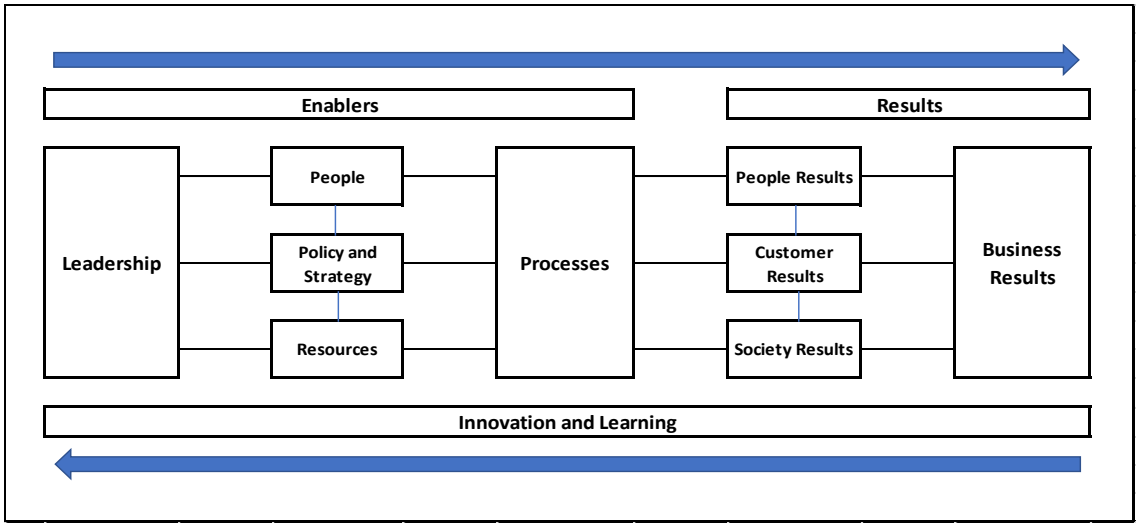
Figure 3-3: Malcolm Baldridge National Quality Awards (MBNQA) Criteria

As per Figure 3.3. the criteria used to asses applicants include a leadership triad (leadership, strategic planning, customer and market focus) and a results triad (human resources, process management and business results). These groups of categories fall under the umbrella of customer and market focus strategies while the entire model is supported by information and analysis.

As per Vokurka et al, (2000) the key areas considered in the MBNQA model include:

- *Leadership* : Senior executive leadership, management for quality and public responsibility.
- *Strategic Planning* : Strategic quality and company performance planning process together with quality and performance plans.
- *Customer and market focus* : Customer relationship management, commitment to customers, customer satisfaction determination, customer satisfaction results, customer satisfaction comparison and future requirement and expectations of customers.
- *Information and analysis* : Scope and management of quality and performance data, competitive comparisons and benchmarks, analysis and use of company level data.
- *Human resource focus* : Human resource management, employee involvement, employee employment and training, employee performance and recognition, well-being and morale.
- *Process management* : Design and introduction of quality products and services, product and service production and delivery processes, business process and support services, supplier quality and quality assessments.
- *Business results* : Product and service quality results, company operational results, business process and support services results and supplier quality results.

Figure 3.4 depicts the EFQM Excellence Model that was introduced in 1992 to assess organisations for the European Quality Award (EQA).



Source : Vokurka et al. (2000)

Figure 3-4: European Foundation for Quality Management (EFQM) Excellence Model

EFQM is currently the most widely used TQM framework in Europe based on the recognition that processes are the means via which an organisation harnesses and releases the talents of its people to produce results. The processes are 'Enablers' i.e. what the organisation does and 'Results' are what the organisation achieves, where the enablers cause the results and feedback from the results help improve the enablers (Vokurka et al, 2000). Here customer results, people results, and society results are achieved through leadership driving policy and strategy, people and resources ultimately leading to business results.

The enabler criteria assessed are :

- Leadership – how leadership actions support the culture of excellence
- Policy and Strategy - how policy and strategy are formulated and deployed as actions
- People – how the organisation realises the potential of its people
- Resources – how resources are managed efficiently and effectively
- Processes – how processes are managed and improved

The results criteria include:

- Customer Results – what are customer perceptions of the organisation
- People Results – what are the employee perceptions of the organisation
- Society Results – what are the community perceptions of the organisation
- Business Results – what has been achieved in relation to planned performance

The Deming Prize was established in Japan in 1951 by the JUSE to honour companies for the successful implementation of quality practices (Vokurka et al, 2000). The evaluation includes ten equally weighted criteria as shown in Table 3.4 alongside MBNQA and EFQM criteria.

Table 3-4: Quality Awards Criteria

MBNQA	EFQM	DEMING
1. Leadership	1. Leadership	1. Policies (Hoshin)
2. Strategic Planning	2. Policy and Strategy	2. Organisation
3. Customer and Market focus	3. People Management	3. Information
4. Information and Analysis	4. Resources	4. Standardisation
5. Human Resource Focus	5. Processes	5. Human Resources
6. Process Management	6. Customer Satisfaction	6. Quality Assurance
7. Business Results	7.People satisfaction	7. Maintenance
	8. Impact on Society	8. Improvement
	9. Business Results	9. Effects
		10. Future Plans

Source: Vokurka et al (2000)

All of the quality awards focus on continuous improvement and organisation-wide quality management. In the main, they advocate **leadership, customer focused planning, human resource development, streamlined processes and product design**.

Worthy of note is the emphasis on business results, which is recognised as the true test of the effectiveness of quality programs – a point well aligned with the main objective of this current research in the contact centre environment.

3.3.4 QUALITY STANDARDS

The following paragraphs will cover relevant quality standards both in the international and South African contact centre environments from the perspective of identifying industry-specific quality management dimensions.

International Standards

Quality Standards have helped define quality management practices across almost every industry. Among the more popular is the ISO 9000 series of standards that was created by the International Organisation of Standards (ISO) which is made up of 132 national standards bodies. The original standards (1987) and the 1994 revision only required that an organisation had a documented, verifiable quality system in place. It lacked elements of continuous improvement, process orientation, use of system data and customer satisfaction (Vaxevanidis et al, 2006). ISO 9004:2009 however, advocates eight quality management principles that are significantly more aligned with those espoused in TQM approaches. These principles are included in Table 3-5.

Table 3-5: ISO 9004: 2009 Quality Management Principles

Principle 1	Customer focus
Principle 2	Leadership
Principle 3	Involvement of people
Principle 4	Process approach
Principle 5	System approach to management
Principle 6	Continual improvement
Principle 7	Factual approach to decision making
Principle 8	Mutually beneficial supplier relationships

Source: International Standards Organisation

In 2010 the International Standards Organisation conducted an international survey on contact centres. 82% of the respondents believed that there was a need or possible need for an International Standard or Guide to improve the quality of services provided by the industry (Clivio, 2010). This effort was to draw on standards existing in South Africa, Germany, European Union and the Republic of Korea. The project was launched in 2010 and initiated in 2013 with

South Africa being appointed as the Secretariat, positioning the South African Bureau of Standards (SABS) in a leading role in terms of the standards development. Subsequently the ISO 18295: 2017 Parts 1 (Requirements for Customer Contact Centres) (International Organization for Standardization, 2017) and Part 2 (Requirements for using the services of Customer Contact Centres) (International Organization for Standardization, 2017) were released in July 2017. Table 3-6 includes the focus areas covered in these standards.

Table 3-6: ISO 18295: 2017 Focus Areas

Customer Relationship Requirements
Communication of Information to Customers ; Measuring and Monitoring of Customer Experience; Complaints Handling; Customer Protection
Customer Focused Leadership
Customer Experience and Quality Focus ; Employee Engagement
Human Resources
Functions; Competencies; Training; Coaching; Communication of Information; Staff Satisfaction
Operational Processes
Customer Related Processes; Workforce Planning
Service Delivery Infrastructure
Handling Customer Contacts; Customer Data; Work Environment; Continuation of Service
Client Relationship

Source: International Standards Organisation

South African Standards

At a higher level, the South African plan to harness the potential of the BPS market included the improvement of infrastructure, deepening the talent pool, creating incentives, marketing South Africa's inherent strengths to the international community, strengthening the industry association and **assuring quality**. In 2005, the Department of Trade and Industry (DTI), The Business Trust and Business Process Enabling South Africa (BPeSA) embarked on the development of standards for the South African call centre industry. This effort culminated in the release of the SANS 990 series in October 2008 (South African Bureau of Standards, 2008). The three parts focus on Outbound, Inbound and Back-Office operations. These standards aim to provide the quality management framework for what needs to be in place to improve a company's probability of success. It details the approaches, processes and performance metrics that a company must implement to mitigate the risks inherent in the contact centre environment.

Table 3-7 outlines the SANS 990 standards.

Table 3-7: SANS 990 Series Focus Areas

Leadership and Customer Service Management
Organisational Focus; Operational Plans; Legislative Requirements; Industry Sector Requirements; Root Cause Analysis; Client Satisfaction; Customer Satisfaction; Risk Management
Human Resource Management
Management Structure; Code of Conduct; Staff Management Model; Recruitment and Selection of Staff; Skills Requirements; Skills Evaluation; Internal Communication; Performance Management; Training; Shift Management; Health and Environmental Management; Safety and Security; Reward and Recognition Programmes; Management of Staffing Agencies; Staff Satisfaction; Staff Development; Attrition
Operational Management Practices
Capabilities; Capacity Planning; Customer Related Process Management; Support Processes; Quality Assessments; Performance Reporting;
Technical Resource Management Practices
Data Security; Disaster Recovery; Management of Internal Technical Support; Management of Ext. Technical Support; Data Management; Management Information Systems; Fraud Risk Management; Security Procedures

Source: SANS 990

UK Standards

Given that approximately 50% of South Africa's offshore work originates from the UK (Business Process Enabling South Africa, 2015) the BS EN 15838:2009 UK standard (British Standards Institution, 2009) is justifiably considered a relevant input to this study. Table 3-8 provides the focus areas of this standard.

Table 3-8: BS EN 1538: 2009 Focus Areas

Management Strategy and Policy
Job descriptions; Operational roles and responsibilities; Human resources; Information and communication technology (ICT); Quality assurance; Training; Operations management function; Planning and control function; Client organization management function
Contact Centre agents
Tasks and functions with regard to agents; Requirements for agents; Communication and customer service; Technical skills; Specific skills and knowledge; Recruitment process; Training of agents; On-going training and coaching; Performance; Agents' satisfaction; Agents' privacy
Infrastructure
Communication channel; Contact management (hardware and software tools); Confidentiality and data protection; Working environment; Back-up systems
Processes
Agreement with client organization; Service statistics; Handling deviations; Monitoring process quality; Workforce management; Access channels; Complaint Handling - service; Privacy; Continuity
Customer satisfaction
Customer satisfaction survey; Results; Complaints analysis; Customer protection
Social responsibility

Source: BS EN 1538: 2009

Commercial Standards and Benchmark Reports

There are certain commercial standards and benchmark reports that are considered influential in the international contact centre space. These are addressed below.

Customer Operations Performance Centre (COPC)

COPC Inc. is a private organisation based in Florida USA with operations in Europe, The Middle East, Africa, Asia Pacific, Latin America, India and Japan. (Customer Operations Performance Center Inc., 2018). Their work is based on their COPC CX Standard (Customer Operations Performance Center Inc, 2018) which is a performance management system for operations that support the customer experience. The COPC CX standard was introduced to South African Contact Centres in 2005. Table 3-9 provides details on the focus areas of the 2016 revision of this standard.

Table 3-9: COPC CX Focus Areas

Leadership and Planning
Statement of Direction; Business Planning; Unassisted Channels; Target Setting; Reviewing Business Performance
Processes
Gathering and Analysing Customer Feedback; Design Key Customer Related Processes
Knowledge and Content Management
Quality Management; Forecasting and Capacity Planning; Scheduling and Real Time Management; Unassisted Channel Management; Corrective Action and Continuous Improvement; Managing Process Control; Data Privacy and Compliance; Vendor and Key Supplier Performance
Business Continuity
Implementation and Change Management; Reporting and Data Integrity; COPC CX Standard Review; OSP Sales Process; Responding to RFXs; On-Boarding of Clients, Programs and Services; Closing Client Relationships; Managing Client Relationships; Providing Client Reports; Invoicing Clients;
People
Defining Jobs; Recruiting and Hiring; Training and Development; Verifying Skills and Knowledge; CSS Monitoring and Coaching; Staff Performance Management; Managing Staff Feedback; Attrition / Absenteeism;
Performance
Measuring Customer Experience; Client Satisfaction and Dissatisfaction; Assisted Channel Performance; Unassisted Channel Performance; KSP Performance; Achieving Results

Source: COPC

Customer Contact Association (CCA) Global Standard

The CCA Global Standard was first adopted by companies in the UK that sought to increase the reliability and effectiveness of their customer contact operations. (Customer Contact Association, 2018). Table 3-10 includes the focus areas.

Table 3-10: CCA Global Standard Focus Areas

Customer Focus
Customer Satisfaction; Customer Feedback; Managing Complaints; Outbound Calling
CC Performance and Operational Effectiveness
Organisational Strategy; Measurement; Performance; Internal/External Relationships; Risk Assessment; Forecasting and Operational Planning
Employee Focus : Selection/Engagement Strategy
HR Policy; Attrition and Attendance; Benefit and Welfare; Entitlements; Schedules; Employees Views
Learning, Development and Employee Performance Man
Personal Development; Objectives; Competencies; Induction Training; Training Effectiveness; Career progression/opportunities; Continuous Professional Development
Legislation, Regulation and Policies
Requirements, Compliance, Breach
Third Party and Managed Relationships
Strategic Alignment; Contractually Defined Relationships; Governance; Performance Issues
Customer Information Security
Risk Assessment; Recruitment and Vetting; Security Awareness; Training and Quality; Performance and Quality Monitoring
Multi-media Channels and Associated Technology
Use, Purpose and Objectives, Implementation; Governance

Source: CCA Global Standard

Dimension Data Global Benchmarking Report

This is an annual benchmarking report that was launched in 1997 has gained international recognition in recent years. The 2016 edition includes data from 1320 contact centres and is supported by over 40 of the world's leading industry groups and associations (Dimension Data, 2016). The report focuses on the fast-changing customer service environment and the areas the contact centres need to focus onto survive in this rapidly evolving space.

Table 3-11 summarises the main focus areas.

Table 3-11: Dimension Data Benchmarking Report

Customer Experience (CX) Strategy and Innovation
Analytics
Digital Channels
Contact Centre Operations
Workforce Optimisation
Technology Solutions

Source: Dimension Data

The various inputs to the dimensionality of quality management outlined in this section i.e. prescriptive literature from prominent early contributors; empirical studies spanning the past three decades; internationally recognised quality awards and quality standards/reports relevant to the contact centre industry will form the basis of the quality practice / performance model developed in the next chapter.

3.4 THE MEASUREMENT OF PERFORMANCE

The value of any business practices is directly reflected in the outcomes of such practices. It is therefore imperative that the measures of performance be carefully considered such that they measure what was supposed to be measured. The paragraphs that follow outline the various approaches to performance measurement taken in the literature.

3.4.1 EARLY CONTRIBUTORS / PRESCRIPTIVE LITERATURE

While not explicitly listed in Deming's 14 prescriptions, Anderson et al (1994) elaborated on the constructs underlying the Deming Management Method. 'Employee Fulfilment' and 'Customer Satisfaction' are included as performance measures. Juran (1986) included 'Evaluation of Performance' and 'Comparison to Goals' as part of his Quality Control element and Crosby (1979) included 'Quality Measurement' as part of his 14 steps. Table 3-1 shows these elements.

3.4.2 EMPIRICAL STUDIES

Table 3-12 provides an overview of the performance measures considered in several key empirical studies.

Table 3-12: Performance measure considered in Empirical Studies

Study	Quality / Operational Performance	Business Performance
1989 Saraph et al.	Quality Performance Customer Satisfaction	
1994 / 1995 Anderson et al.	Customer Satisfaction	
1995 Powell	Productivity	Financial Performance

		Financial Performance rel to Competition Revenue Growth Revenue Growth rel to Competition Profitability rel to Competition
1995 Flynn et al.	Perceived Quality Market Outcomes % Passed final Inspection - No Rework	Competitive Advantage
1996 Ahire et al.	Product Quality Supplier Performance	
1999 Dow et al.	Percentage of defects in final assemble Cost of Warranty Claims The total cost of Quality Defect rate relative to competitors	
2000 Das et al.	Customer Satisfaction Customer Retention On-time Delivery	Firm performance rel to competition Market Share Return on Assets Market share increase
2000 Zhang	Processes Reducing defect rate Decreasing lead time Improving process capability Decreasing cost of quality Suppliers Improving supplier relationship Improving supplier performance Customers Increasing customer focus efforts Increasing customer satisfaction People Increasing Employee satisfaction Increasing Employee participation Improving Employee Skill levels Improving Employee communication Improving Employee Moral Increasing department communication	Increasing in Market Share Increasing Sales per Employee Establishing a ne Customer Base Increasing Export Market Improving Business Profitability
2001 Fynes et al.	Conformance Quality Design Quality External Quality in use Product Cost Time to Market Customer satisfaction	Growth in ROI Growth in Sales Growth in Earnings before Tax Growth in Market Share
2001 Douglas and Judge		Perceived Financial Performance Growth in Earning Growth in Revenue Changes in Market Share

		Return on Assets Long Run level of Profitability
2003 Kaynak	Inventory Management Performance Purchase Material Turnover Total inventory Turnover Quality Performance Product / Service Quality Productivity Cost of Scrap and rework Delivery lead time of purchased materials Delivery lead times to customer	Return on Investment Sales Growth Profit Growth Market Share Market Share Growth
2006 Yeung et al.	Time Based Efficiency Delivery Speed and Reliability Manufacturing Lead Time Inventory Turnover Rate Cost Related Efficiency Cost of Quality Engineering Change Rate Unit Cost of Manufacturing Customer satisfaction Customer returns Product Reliability Loss of Customers	Marketing Performance Sales Volume Market Share Profit Margin Financial Performance Return on Investment Overall Profitability
2006 Nair	Product Quality Operational Performance Customer Service	Financial Performance
2007 Sila	Human Resource Results Organisational Effectiveness Customer Results	Financial and Market Results
2008 Salaheldin	Cost Reduction Waste Reduction Improving the Quality of Products Improving Flexibility Improving Delivery Performance	Financial Revenue Growth Net Profit Profit to Revenue Ratio Return on Assets Non-Financial Investment in R&D Capacity to develop competitive portfolio New Products Development Market Development Market Orientation
2010 Jayaram et al.	Design Performance Process Quality Product Quality	

	Customer Satisfaction	
2012 Zhang et al.	Cost Quality Delivery Flexibility	
2013 Fening et al.	Productivity Quality of Product / Service	Market Share Sales Growth Profit Growth
2014 Wu	Quality Performance Conformance to Spec Product Capability and Performance	
2016 Abubakar et al.	Five Items from Powell 1995 One Item from Baker and Sinkula 1999	

As highlighted by Nair (2006), Table 3-12 shows the varied nature of quality/operational and business performance measures utilised in empirical studies over the past three decades. While some studies considered financial performance measures (Powell, 1995; Das et al, 2000; Kaynak, 2003), others considered operational performance measures (Flynn et al, 1995; Dow et al. 1999) while others looked at customer-oriented measures (Anderson et al, 1995; Adam et al, 1997). Further, one observes that performance was considered either as a single or multidimensional construct.

Powell (1995) indicated that subjective financial performance measures were widely accepted in organisational research and were preferred due to the varied nature of accounting practices. He further asserted that private companies would not divulge confidential financial information as a matter of policy.

3.4.3 QUALITY AWARDS

While the MBNQA includes "Business Results" as part of its seven elements, the EFQM Excellence Model is more comprehensive on performance measures. Include are "Customer Satisfaction", "People Satisfaction", 'Impact on Society' and "Business Results". The Deming Prize includes "Effects" in its ten criteria covering quality, business and social results. Table 3-4 includes these performance elements.

3.4.4 QUALITY STANDARDS

The quality standards considered in this study are specifically relevant to the contact centre industry. It follows that the performance measures identified are industry-specific as opposed to generic measures (such as those identified in the quality awards).

Table 3-13 presents the Mandatory and Optional performance measures identified in the recently released ISO 18295: 2017 standard.

Table 3-13: ISO18295: 2017 Performance Measures

Mandatory KPIs	Optional KPIs
Customer Satisfaction	Average handling Time
Interaction Quality	Agent Occupancy
Factual Accuracy	Absenteeism
Agent Attitude (empathy, politeness, listening, etc.)	Attrition
First Contact Resolution	Forecast Accuracy
Reporting Level	Schedule Accuracy
Abandonment Rate	Schedule Adherence
Repeat Caller Ratio	Contact back on time
Complaint Ratio	Opt-out Rate
Staff Satisfaction	Contactability (right party)
Client Satisfaction	Contactability of attempts

Table 3-14, 3-15 and 3-16 includes the performance measures found in the SANS 990 series, BS EN 1538: 2009 (UK) and COPC standards respectively.

Table 3-14: SANS 990: 2009 Performance Measures

Voice Contacts	**Management of Facilities**
List Backlog	Response/Resolution/Quality/Backlog/Volume
Volume Achieved	**Management of Technical Support**
Productivity	Response/Resolution/Quality/Backlog/Volume
Average Handling Time	**Data Management**
Abandonment Rate	On-time/Backlog/Quality
Escalations	**System Availability**
On-time/Backlog/Volume/Quality	**Client Satisfaction**
Electronic Interactions	Survey Scores / Ratio of Complaints
On-time/Backlog/Volume/Prod/HT/Quality	**Staff Satisfaction**
Escalations	**Cost of Failure**
On-time/Backlog/Volume/Quality	Percentage and cost of time on unusable data
Capacity Planning	**Staff Efficiency**
Management of Internal Support Department	Absenteeism
Response/Resolution/Quality/Backlog/Volume	Attrition
Management of External Suppliers	Utilisation
Response/Resolution/Quality/Backlog/Volume	Average Handling Time

Table 3-15: BS EN 1538: 2009 Performance Measures

Mandatory KPIs	**Recommended KPIs**
KPIs for agents	KPIs for client organization
KPIs for customers	KPIs for processes
KPIs for processes	KPIs for efficiency
KPIs for contact quality	KPIs for customer and/or client organization complaints
KPIs for infrastructure	

Table 3-16: COPC Performance Measures

Key Customer Related Processes	**Key Support Processes - Continued**
Speed of Answer	On-time / Accuracy
Abandonment Rate	Forecasting Volume and AHT
Escalation Rate / Accuracy	Staff / Volume and AHT forecasting accuracy
Customer/Business/Compliance Critical Error Accuracy	Recruiting / Hiring
Contact Resolution	On-time / Accuracy
Sales	Training
Volume	Quality
Agent Utilisation	Implementing new Programs
Average Handling Time	On-time
Agent Occupancy	Real Time Management
Key Support Processes	Attrition
IVR	Absenteeism
Abandonment Rate / Exit Rate / Routing Accuracy	Reporting Performance to Clients
Telecoms	On-time / Accuracy
Uptime / Blocked Transactions	Invoicing Clients
Managing Production Systems	On-time / Accuracy
Uptime	Responding to RFXs
Managing Content	Multi-channel Experience
On-time / Accuracy	Customer Satisfaction
Internal Helpdesk	Client Satisfaction

3.5 THE INFLUENCE OF CONTINGENCY FACTORS

Zhang et al, (2012) cited in Basu & Bhola, (2016:1192) stated that "a moderating effect occurs when a third variable changes the relationship between two related variables". In the current context the third variable would be contingency or contextual factors that would influence the relationship between quality practices and company performance. They further qualify that significance of this effect depends on the level of the contextual factors.

Sousa and Voss (2008) noted that the appearance in the literature of the impact of contingency factors on the relationship between quality practices and performance was also accompanied by a wide variation in the selection of these factors. These included factors such as corporate support, management knowledge, complexity of products, organisational uncertainty, industry, country, culture, product diversity, amongst other (Sitkin et al, 1994; Ahire et al, 1996; Sousa & Voss, 2001).

Table 3-17 presents the various contingency factors considered across a range of studies.

Table 3-17: Contingency Factors considered in Empirical Studies

Study	Contingency Factors
1991 Benson et al.	Managerial Knowledge Corporate support for Quality Marketplace Environment Product / Process Environment Past Quality Performance
1995 Powell	Entry Barriers ; Rivalry
1997 Mersha	Political Factors ; Cultural Factors ; Economic Factors ; Demographic Factors
2000 Das et al.	International Competition Competition from Japan
2001 Douglas and Judge	Structural Exploration Channels of Communication Management Principles Structural Control Operational Procedures Control of Operations Job Descriptions
2006 Joiner	Co-worker Support Four items from Zhou and George (2001) Organisation Support Four items from Zhou and George (2001)
2010 Jayaram et al.	Industry Type TQM Duration Firm Size Unionisation
2012 Zhang et al.	Quality Exploitation Quality Exploration Organisational Structure Environmental Uncertainty
2014 Wu	Quality Culture
2016 Abubakar and Mahmood	Firm Resource Advantage

	5 Items from Anderson and Eshima 2013
2016 McAdam et al.	Strategy Culture Customer Focus Lifecycle

Benson et al. (1991:1108) asserted that "while other organization-theory models or frameworks could be used to describe quality management, none features as prominently the role of external forces on the management of the organization". This was due to quality problems being driven by external factors such as customer demands, competitive pressures, and government regulation. Sitkin et al. (1994) proposed that a possible cause of failed quality programmes could be that approaches such as TQM were advocated as universally applicable with little or no attention paid to contextual factors such as uncertainty faced by organisations. Some studies such as Sila (2007) found no support for the argument that contextual factors have an impact on the quality practice-performance relationship while others did (Jayaram et al, 2010; Zhang et al, 2012, McAdam et al, 2016; Abubakar & Mahmood 2016).

3.6 MODELLING THE QUALITY PRACTICE / PERFORMANCE RELATIONSHIP

In pursuit of the development of quality management theory, many researchers have hypothesised on the relationship between quality practices and business performance. Based on a review of literature and experience or observations in certain industries, the hypotheses have been expressed as models of the quality practice / performance relationships. Such models were then tested using empirical data processed via statistical techniques. The section that follows provides an elaboration of a selection of key models found in the literature together with relevance to the current study.

3.6.1 KEY QUALITY PRACTICE / PERFORMANCE MODELS

Flynn et al (1994) established a framework for quality management research based on their assertion that the quality management literature was particularly weak in addressing issues of reliability and validity of measurement instruments. Employing a process definition, their work emphasised inputs i.e. quality management practices as opposed to outputs (quality performance). Figure 3.5 presents their model of the effects of quality management practices on competitive performance.

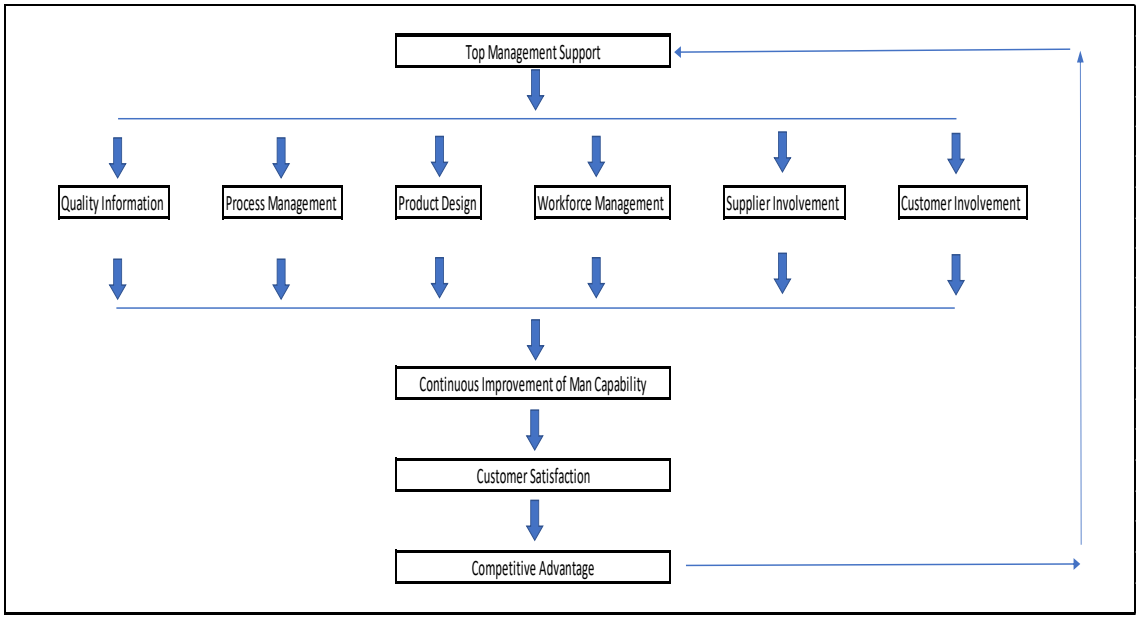


Figure 3-5: Flynn et al (1994) Quality Management Practice / Performance Model

In this model, top management creates an enabling environment that rewards quality related activities. They may do this by ensuring that quality improvement is central to the organisation's competitive strategy; be actively involved in quality related efforts; develop a company culture that emphasises quality; reward quality performance and communicate their commitment to quality. Top management support is considered the first dimension of quality management and provides the foundation for the practice of core quality activities. These include quality information systems, process management, product design, work force management, supplier involvement and customer involvement. These activities focus on continuous improvement of manufacturing capability which increases customer satisfaction, thus resulting in competitive advantage. Continuous assessment of competitive advantage feeds back into the company's strategy that informs top management's support for quality management (Flynn et al, 1994).

While the framework is considered useful from a quality dimensions point of view, the specific quality practices have a considerable manufacturing bias and therefore of limited use in the contact centre environment. The sample for this work included 42 plants in the USA in the transport components, machinery and electronics industry. A specific strength to be noted is that respondents were chosen from all levels of the organisations and not just quality mangers and general managers. The main focus of this research was to produce a reliable and valid instrument for measurement of quality management which serves a basis for work that may model the relationships between quality practices and performance – as is the case in the current research in the contact centre industry.

Later work by the same group of researchers (Flynn et al, 1995) involved the development of a model that sought to determine which quality management practices should be emphasised. As depicted in Figure 3.6, the model includes both infrastructure related practices that support the implementation of core quality practices, ultimately resulting in quality and business performance.

The work used the same data as their earlier work (Flynn et al, 1994) hence the manufacturing bias. Analysing the relationships via path analysis, where multiple regressions determined the path coefficients, it was found that important infrastructure components included top management support and workforce management. Further, it was found that external quality performance (i.e. perceived market outcomes) were mainly related to statistical control and feedback and the product design process. Internal measure of quality performance (i.e. % passed inspection without rework) was strongly related to process flow management. Finally, both measures of quality performance (i.e. internal and external) were related to a business outcome i.e. competitive advantage.

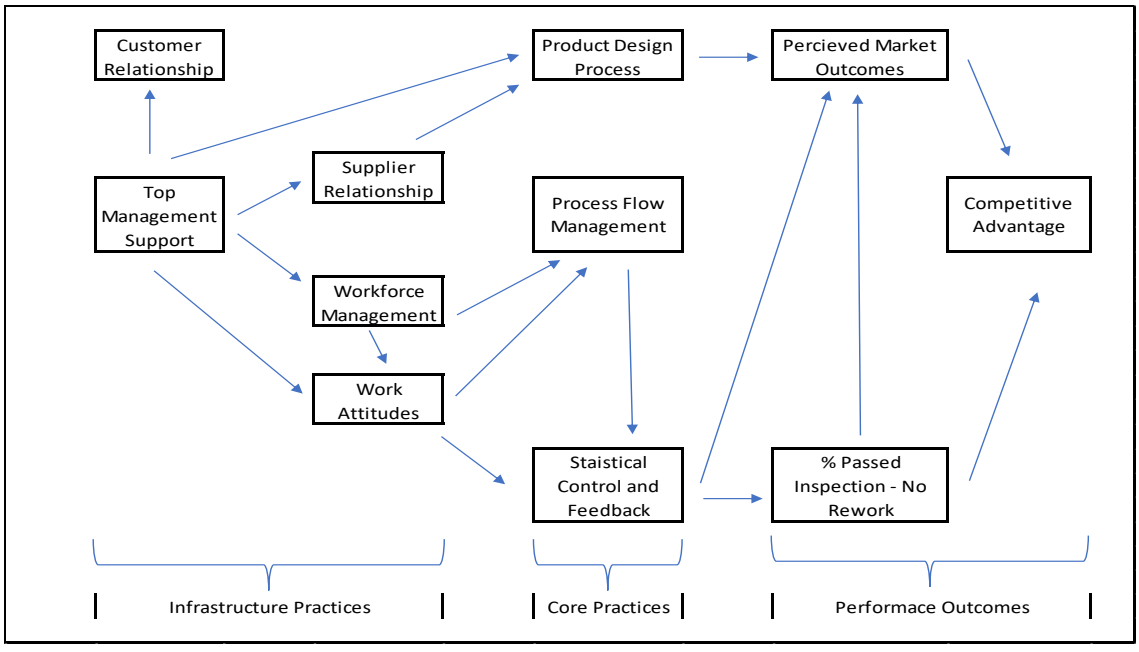


Figure 3-6: Flynn et al (1995) Quality Management Practice / Performance Model

Although the specific quality dimensions have a manufacturing bias which is of limited use on the contact centre environment, there are several features of the modelling that is of interest. Firstly, the separation of quality practices into the broad categories of infrastructure practices and core practices is considered useful given that infrastructure related practices provides an enabling environment for the practice of core quality practices. Secondly, the indirect relationships of

quality practices and business outcomes i.e. via quality outcomes is also considered a viable and usable idea in the contact centre environment (or any industry) given that quality practices first lead to quality outcomes which in turn relate to business outcomes such as competitive advantage.

Anderson et al (1995) proposed a 'Path Analytic Model of a Theory of Quality Management underlying the Deming Management Model'. They asserted that despite the impact that Deming's points have had on quality management practices, there was a lack of empirical support for the effectiveness of the method beyond anecdotal and case studies. The constructs underlying Deming's 14 points were extracted by a panel of experts that engaged in a three-round Delphi study. Figure 3.7 presents the model that includes the constructs and the proposed relationships among the constructs.

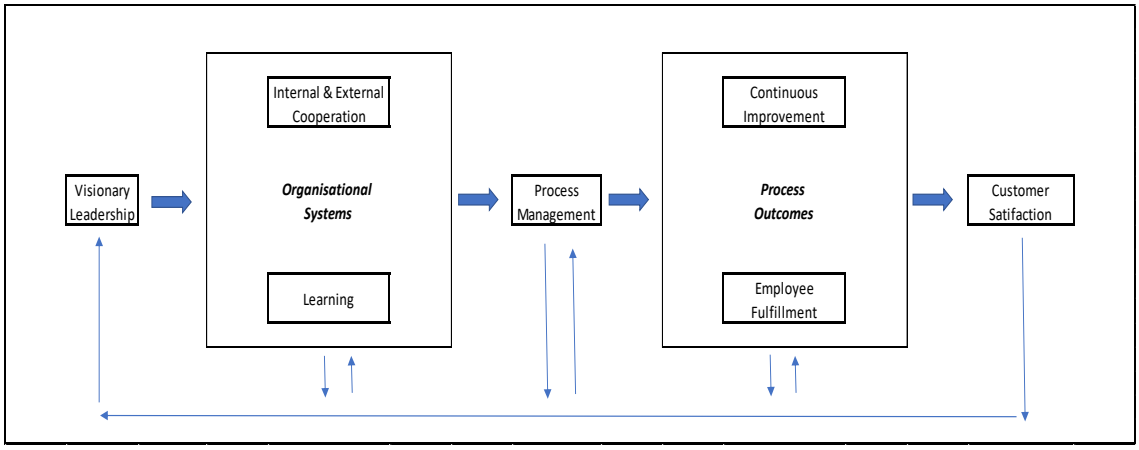


Figure 3-7: Anderson et al (1995) Quality Management Model based on Deming Methods

The model proposes that the effectiveness of the 'Deming Method' results from the leaders creating a co-operative and learning environment to facilitate process management practices that support customer satisfaction through employee fulfilment and continuous improvement.

The statements used to operationalise the constructs are relatively generic and may be applied across industry types, including contact centres. However, the process management construct does have a manufacturing bias that may be adapted for service industries. This research used secondary data collected from manufacturing plants. The theorised relationships presented in Figure 3.7 were tested via path analysis which generally indicated support for most of the hypothesised relationships. Insignificant relationships were found between learning and process management and between continuous improvement and customer satisfaction. Nevertheless, the work is considered relevant in the use of direct and indirect relationships together with the method used to test the hypotheses. Similar modelling techniques and methods (path analysis) are considered in the current research.

Research conducted by Dow et al (1999) on the relationship between quality practices and performance was motivated by the fact that previous empirical studies were limited by small sample sizes which in turn limited the choice of analytical methods to correlations and simple regressions. They claimed that the most distinctive contribution of their work was the use of a large sample (698) and rigorous analytical methods (structural equation modelling) to assess the hypothesised quality practice / performance relationships. The researchers further lamented the fact that previous studies defined quality constructs on an a priori basis i.e. using existing literature, even though there was an absence of general agreement among theorists. In response, the group opted for an exploratory approach to scale development. A key aspect of this research is that it explored the prevailing assumption that quality practices are interdependent. When interdependence is assumed, it implies that there is a synergetic effect of the combined deployment of varied practices that together produce a superior outcome. Challenging this assumption was based on Powell's earlier work (Powell, 1995) that found that not all quality practices contributed to higher performance.

Three different structural models were proposed in line with their hypotheses. These included a 'Baseline Model' (Figure 3.8) representing the hypothesis that quality practices independently influence quality outcomes, a 'Two Factor Model' (Figure 3.9) which hypothesises that the positive relationship between practices and performance is best represented by a smaller number of second-order quality practice constructs, and a 'Best Practice Model' (Figure 3.10) that proposes that the relationship between quality practices and outcomes are best represented by a single second order practice construct. The third model would imply interdependence (or synergy) of quality practices that produces a superior performance outcome.

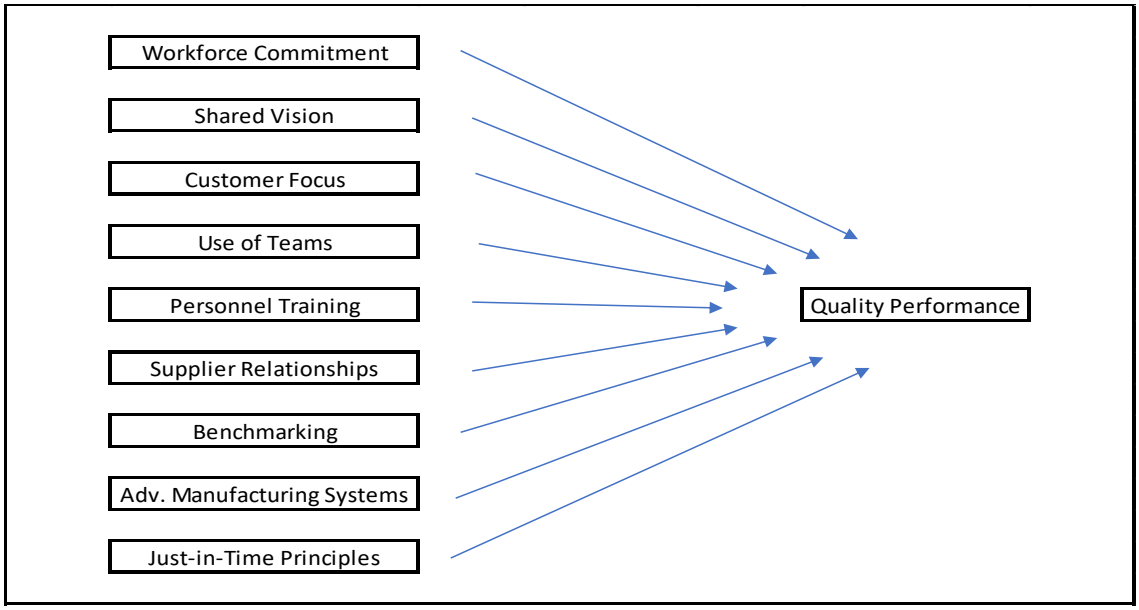


Figure 3-8: Dow et al (1999) Baseline Model

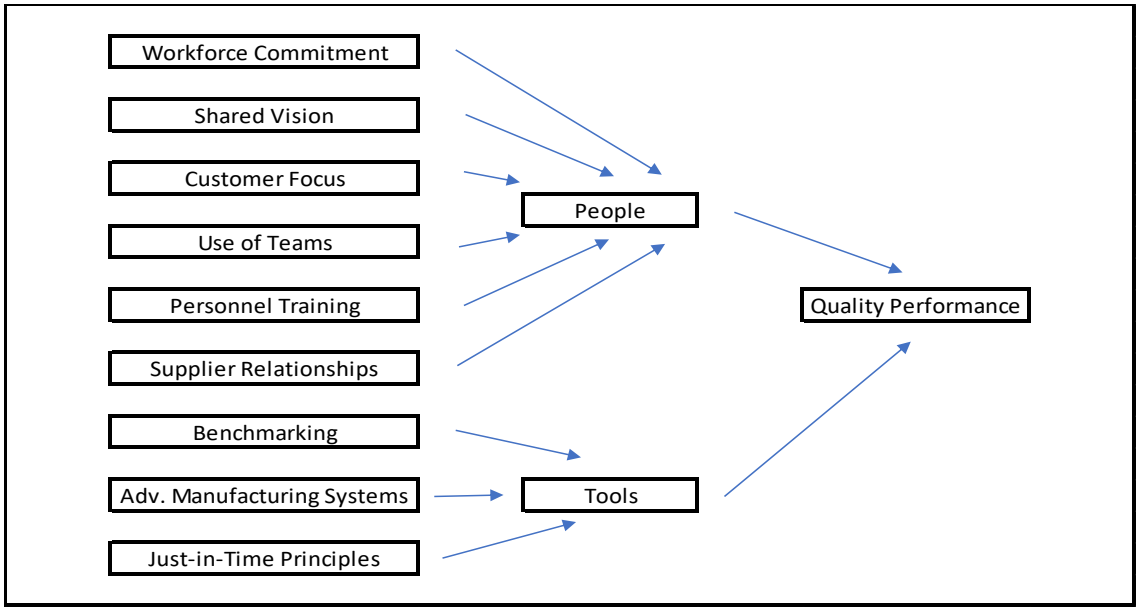


Figure 3-9: Dow et al (1999) Two Factor Model

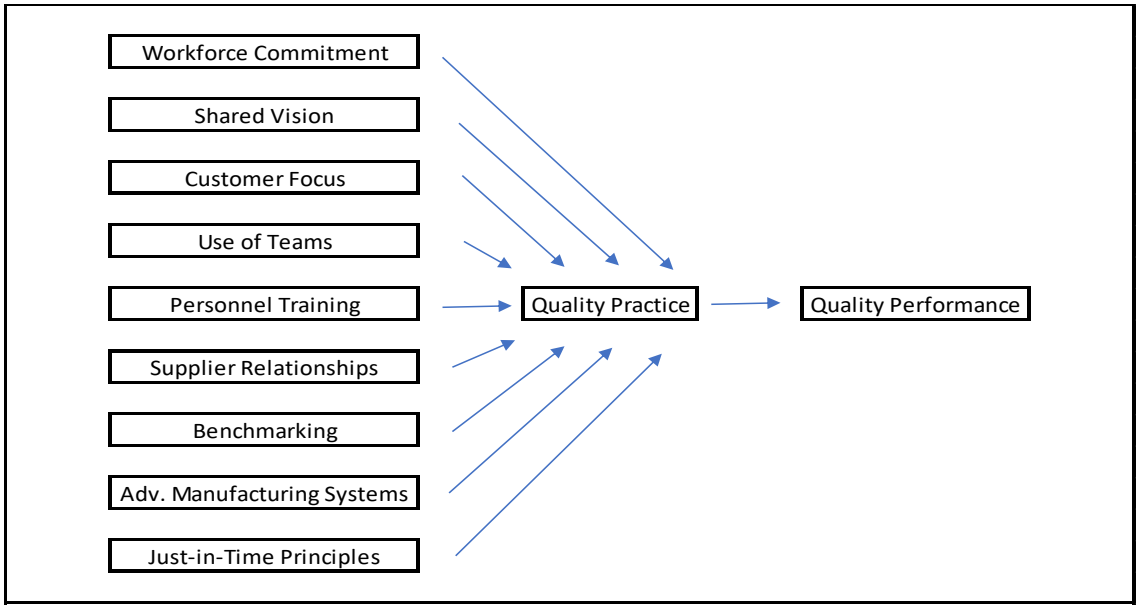


Figure 3-10: Dow et al (1999) Best Practice Model

The exploratory approach to scale development yielded nine quality practice dimensions. These included workforce commitment, shared vision, customer focus, use of teams, personnel training, supplier relationships, benchmarking, advanced manufacturing systems and just-in-time principles. The results found that the baseline model provided the best fit to the data supporting the hypothesis that quality practices individually contribute to performance. Further it was found that only three of the quality practice constructs have a statistically significant positive association with performance. These include workforce commitment, shared vision and customer focus. Just-

in-time principles had a weak association with performance while the remaining five constructs were not related to performance outcomes.

Dow et al's research is considered relevant to the current research since the essential objective of the current research is to develop a quality practice / performance model for the contact centre industry which reveals the quality practices that have the highest impact on performance. The model is intended to guide quality practitioners in the contact centre industry as to which practices to emphasise thereby optimally utilising scarce resources. Further, the current work also tests for synergistic impact of quality practices on performance and employs methodology conceptually similar to that of Dow et al's work.

Das et al (2000) observed that most quality management research reflected a resource-based view of organisations, dealing mainly with internally focused issues such as management and technical competence in formulating and implementing quality strategies. In contrast, the influence of the environment on practices and performance was distinctly absent in the quality literature. Their research attempted to address the gap by investigating the impact of international competition on quality management and outcomes. Figure 3.11 presents their 'Integrated Framework of Quality Management'.

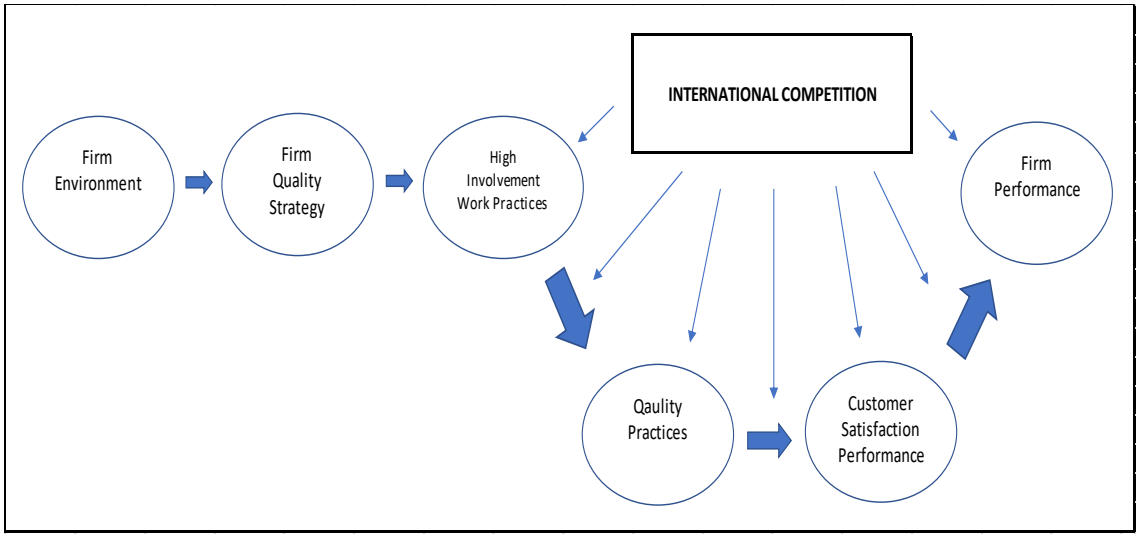


Figure 3-11: Das et al (2000) Integrated Framework of Quality Management

The model proposes that over time the industry environment pressurises companies to develop a quality strategy. These strategies bring about changes in work practices which enables the adoption of quality practices. Quality practices result in successful customer satisfaction performance which leads to improved business performance. International competition acts as a moderator of the relationships between work practices, quality practices, customer satisfaction and firm performance. A methodological strength of this study was the use of a relatively

sophisticated technique to examine the relationships i.e. 'Structural Equation Modelling'. The research found strong positive links between high involvement work practices, quality practices, customer satisfaction and to a lesser extent with firm performance. From the perspective of the impact of the contingency variable i.e. international competition, it was found the international competition does influence the implementation of high involvement work practices and quality practices. However, no significant impact was found on customer and firm performance. Such findings may offer an alternative explanation to why quality programs may fail to improve performance.

The research is considered relevant to the current research in the contact centre environment from a contingency factor point of view. The model being developed considers the impact of contingency factors on the quality practice / performance relationships in an effort to guide practitioners from this perspective.

Zhang (2000) developed a quality management model based on an extensive literature review. The model included 83 quality management methods that were grouped into 11 elements (dimensions). The research, conducted via a structured interview, aimed to investigate how major manufacturing companies in the Netherlands implemented quality management and the impact of these practices on business performance. Figure 3.12 shows the model that can be used to evaluate a company's strengths and weaknesses regarding the use of quality methods. The 10 companies interviewed had all obtained ISO 9000 certificates and had implemented TQM for approximately 6 years. The experience of the sample in implementing quality practices is considered a strength of this work.

Based on the frequency of use, 15 major quality management methods were identified. Respondents indicated that all 15 methods had a moderate to excellent impact of product quality. In decreasing order of impact, these included top management support, evaluation, employee participation, customer focus, empowerment, supplier quality management, education and training, seven QC tools, seven new tools, statistical process control, design of experiments, quality function deployment, recognition and reward, ISO 9000 and quality costs. It was further found that quality practices had a positive impact on both strategic and operational performance where operational performance was dissected into process performance, supplier performance, customer performance and people performance.

Like much of the quality management research, Zhang's work also has a manufacturing bias, however the quality dimensions are adaptable to service industries. Specifically, the operational and business performance metrics are considered useful to the current research.

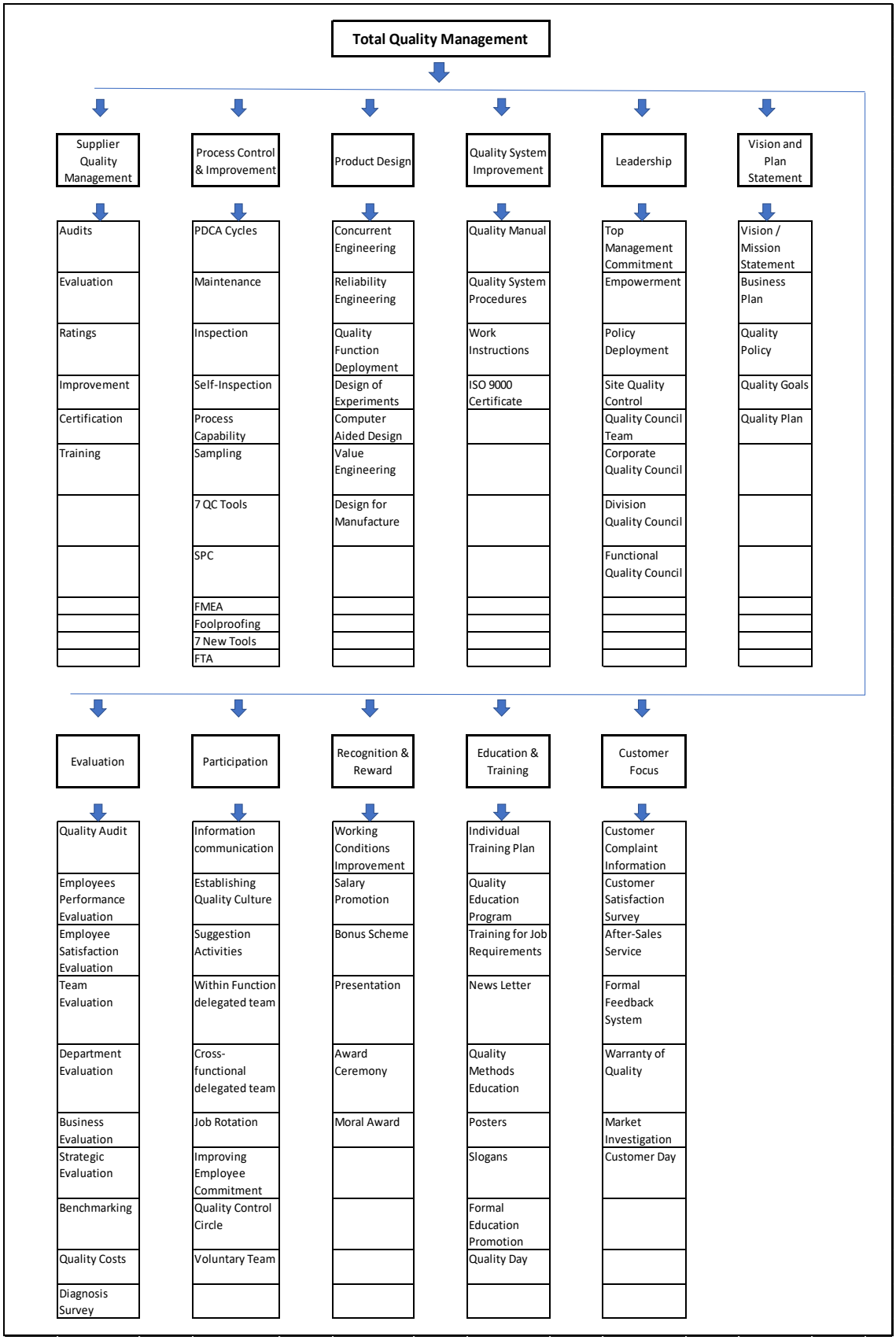


Figure 3-12: Zhang (2000) A Model of Quality Management Methods

The model proposed by Fynes and Voss (2001) emphasised the various dimensions of quality performance and the relationship between them. The researchers asserted that quality management literature was lacking from this perspective. Figure 3.13 shows the model.

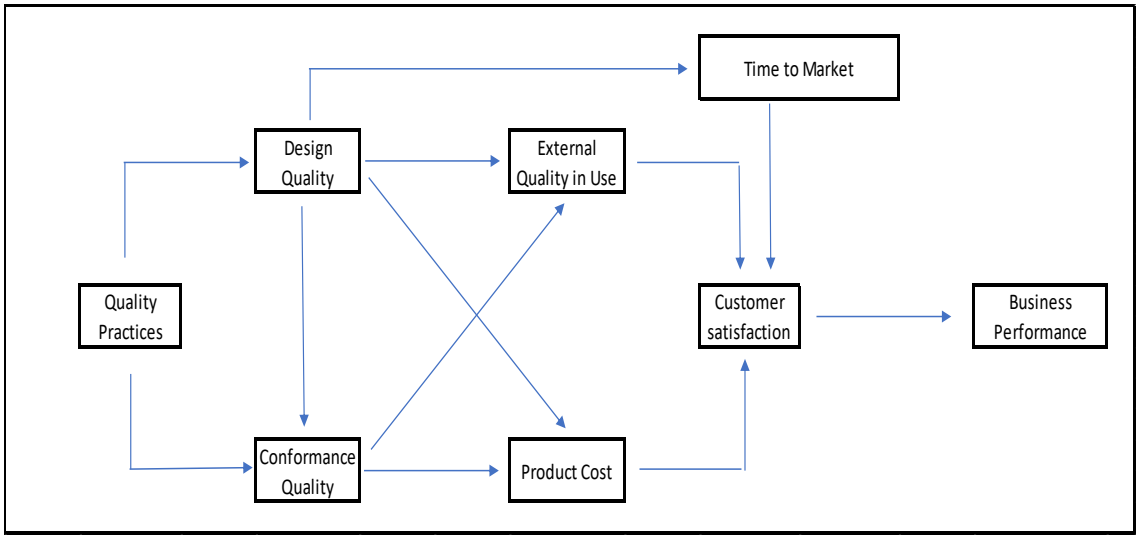


Figure 3-13: Fynes and Voss (2001) Model of Quality Practice / Performance Relationships

It is argued that product quality is made up of two distinct dimensions i.e. conformance quality which is the extent that a product conforms to a design after it has been manufactured; and design quality which is the extent to which quality has been designed into a product. The essential hypothesis here is that quality practices first have an impact on internal quality performance (i.e. design quality and conformance quality) which in turn impacts on external quality (i.e. quality-in-use and customer satisfaction). Finally, quality practices impact on business performance indirectly via internal and external quality performance.

It was found the quality practices have a significant impact on design quality and conformance quality (i.e. internal quality performance) which in turn impacted positively on external indicators of quality performance (i.e. quality-in-use and customer satisfaction). However, the relationship between customer satisfaction and business performance was not supported. This result confirms the more complex nature of business performance which has to be explained by additional factors both internal and external to the company. A point of interest in this work is the use of a single higher order construct for quality practices. A similar consolidation has been considered in the current research for testing of specific hypotheses.

Kaynak (2003) suggested that studies that attempted to investigate the impact of quality management on performance produced mixed results mainly due to dimensionality of the constructs in that studies either view quality management as a single or multidimensional construct. Further, the levels of performance measurement varied considerably among studies

ranging from operational to financial measures. A final assertion, in this regard, was that studies varied in outcomes due to the analysis methods employed in that correlation and regression methods fell short in identifying which quality practices had a direct or indirect impact on performance. Figure 3-14 shows the model considered in this work.

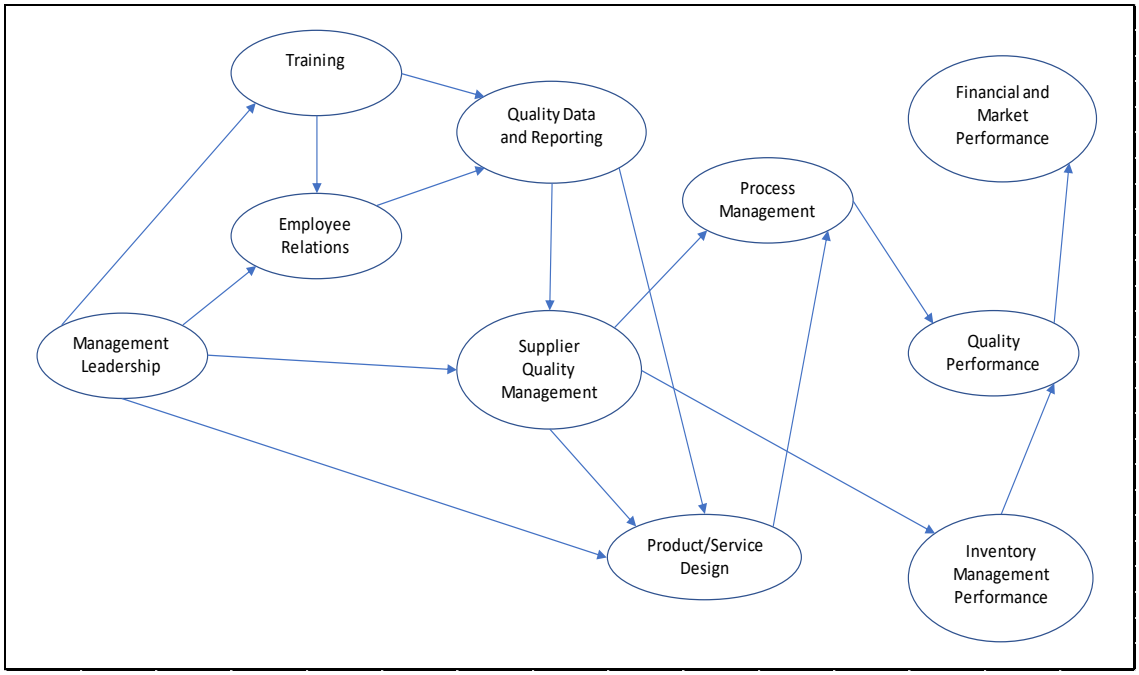


Figure 3-14: Kaynak (2003) Model of Relationship between TQM and Performance

The model includes seven quality practice dimensions based on work by Saraph et al (1989) i.e. management leadership, employee relations, training, quality data and reporting, supplier quality management, process management and product/service design. The motivation for the use of the dimensions was that, based on an extensive review of previous studies, these seven dimensions of quality practices represent a wide domain of Total Quality Management (TQM). Similar to Fynes et al (1995), the model asserts that infrastructural practices such as management leadership, employee relationships and training impact on performance through the implementation of core quality practices including quality data and reporting, supplier quality management, product/service design and process management. The arrows present in the model represent the hypothesised relationships. The research confirmed that supplier quality management, product/service design and process management have a direct impact on operational performance (represented by inventory management performance and quality performance) and that management leadership, training, employee relations and quality data and reporting impact on operational performance indirectly. Finally, the impact on business performance (financial and market performance) is mediated by operational performance.

Kaynak stressed the importance of multidimensionality of quality practice constructs, the use of a broad set of performance indicators and the consideration of direct and indirect impact of quality practices on performance. Cognisance of these points have been maintained in the current research in the contact centre environment.

Noting TQM failure rates as high as 60-70% (Dooyoung el al, 1998 cited in Sila, 2007), Sila (2007) suggested that a likely reason for unsuccessful TQM implementations may be context-dependent. Given the differing views on whether a universal or context-driven approach to quality management is appropriate , Sila developed a model where the combined effect of seven quality practices on four quality measures were tested. The model also tested the impact of five contextual factors on the quality practice / performance relationships. Figure 3.15 presents Sila's model.

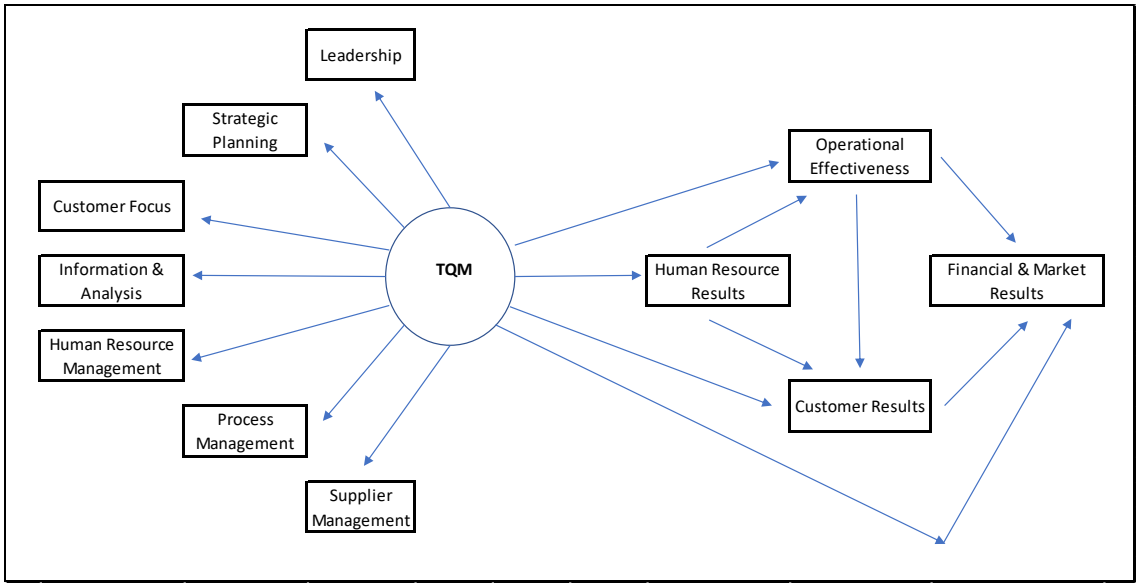


Figure 3-15: Sila (2007) Model of Relationship between TQM and Performance Measures

While the quality practices are similar to other studies (leadership, strategic planning, customer focus, information and analysis, human resource management, process management and supplier management), Sila claims that the measurement items per practice are more comprehensive. The study also includes more performance measures together with testing the relationships among them. The performance measures included in the study include, human resource results, operational effectiveness, customer results and financial and market results. The first three act both as dependent and independent variables. The contextual factors include three institutional factors viz. TQM/Non-TQM companies, ISO 9000 registration and country of origin; and two contingency factors viz. company size and scope of operations (i.e. whether a company operates domestically or internationally). The research found that TQM had a significant direct effect human resource performance, customer performance and operational effectiveness. Also, TQM had a significant indirect impact on financial and market performance. Regarding the impact of

contextual factors, it was found that there was no significant difference in the model relationships for all subgroups representing the different states of the contextual factors. This finding supports the universal applicability of TQM and its impact on performance.

The current research of the impact of quality management on operational and business performance in the contact centre environment will also test the impact of contingency factors on the quality practice / performance relationships. The findings will be contrasted with Sila's work.

Salaheldin (2008) asserted that the inconsistency in quality management research was due to the absence of a universally applicable measurement instrument. He further lamented the dearth of literature that dealt with the impact of quality practices on the performance of small and medium enterprises (SMEs). Drawing from both operations management and organisational performance literature, the model shown in Figure 3.16 represents the hypotheses tested. These included the impact of quality practices on operational performance, the impact of quality practices on organisational performance and the impact of operational performance on organisational performance.

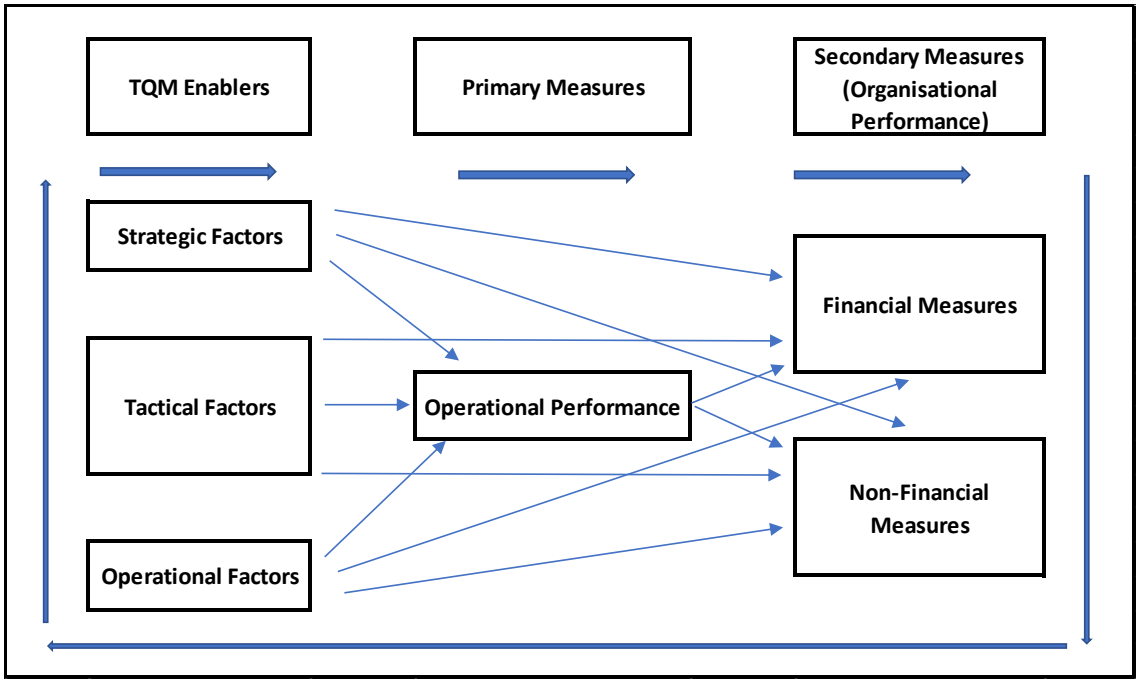


Figure 3-16: Salaheldin (2008) Model for effects of TQM practices on performance

A total of twenty-four quality practices were categorised into three distinct groups. These include strategic factors that are broad in nature and impact on the long-term success of the company. Typical quality practices in this group include top management commitment, organisational culture and benchmarking. The next group of practices were called tactical factors focused on methods and actions and is the concern of middle management. Typical practices in this group

include employee empowerment, employee training and the use of information technology. The final group of practices were called operational factors that produced visible results in the short term. This group include practices such as process control, customer orientation and inspections. The hypotheses testing revealed support for all of the relationships indicated in the model i.e. strategic, tactical and operation quality factors had a positive impact on operational, financial and non-financial performance. Further, operational performance had a positive impact on both financial and non-financial performance. The research supports the argument that quality programs should be implemented holistically rather than on a piecemeal basis to harness its full potential.

In order to contribute to the debate regarding the validity of the universal versus the contingency approach to quality implementation, Jayaram et al (2010) proposed a 'culture-quality system design-outcomes' framework to study the differences in the relationships among quality constructs as a function of four contingency variables. These included industry type, duration of TQM implementation, firm size and unionisation. The framework is presented in Figure 3.17.

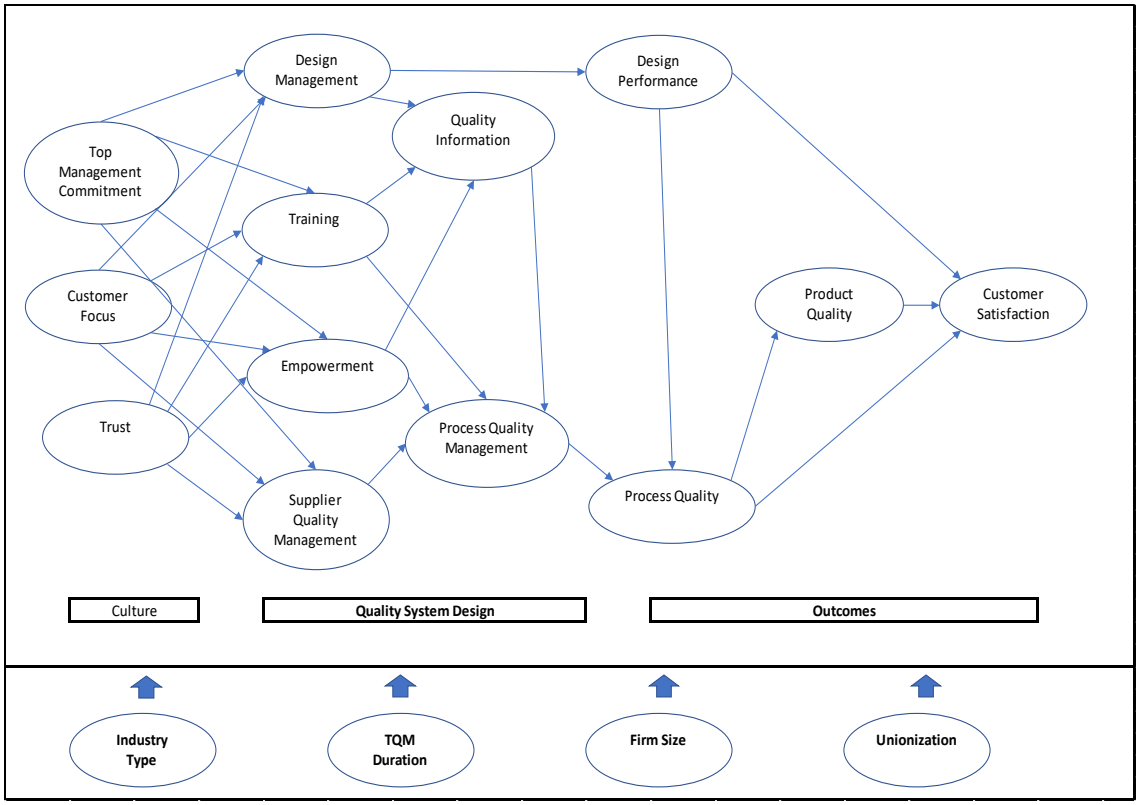


Figure 3-17: Jayaram et al (2010) A Contingency Model of TQM

The model proposes that companies pursuing a quality program must address cultural elements before designing the quality system. The cultural elements include top management commitment, customer focus and employee trust. These elements sets the appropriate climate for quality

program implementation. The quality system design elements include training, empowerment, design management, supplier quality management, quality information usage and process quality management. This group include social (training and empowerment), technical (design and suppliers) and measurement (information and process management) tactics. The outcome constructs include design performance, process quality, product quality and customer satisfaction. The results of the research confirmed that that all three cultural factors influence all of the quality system design elements which in turn influence the outcome variables. From a contingency point of view, it was found that firm size, TQM duration and industry type moderate the impact of both cultural and design factors on outcomes (performance). The decreasing order of impact was industry type, followed by size and then TQM duration. Unionisation had a weaker influence on the practice / performance relationships. The work therefore supports the contingency approach to quality management, an aspect that will be tested in the current study.

Recognising that cultural resistance to change is a common problem when implementing quality programs, Wu (2014) examined how quality culture influences quality practices and performance. It is argued that to be effective, quality practices need to be embedded in an organisational culture that is committed to total customer satisfaction through continuous improvement. The model presented in Figure 3.18 was used for this research.

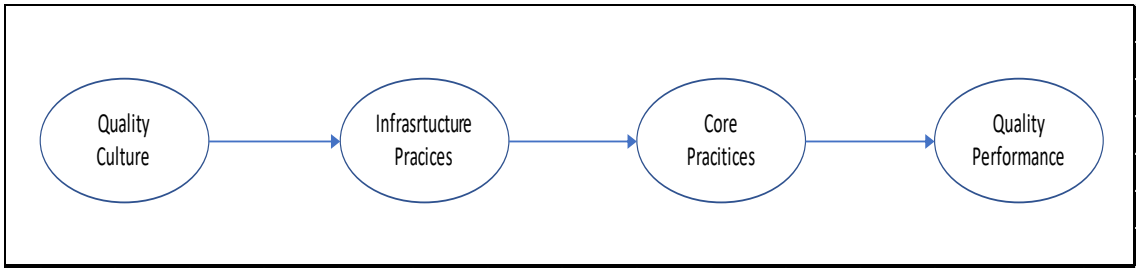


Figure 3-18: Wu (2014) A Quality Practice / Performance Model

The essential hypotheses asserts that quality culture impacts on infrastructure practices which in turn impacts on core practices which finally impacts on quality performance. The key elements of quality culture include system-wide philosophy, continuous improvement and customer focus. Infrastructure practices comprise top management support, teamwork and training while core practices include external quality practices (focusing on customers and suppliers) and internal quality practices (mainly quality data and statistical control). Quality performance is measured by product capability and performance together with conformance quality. The results show that all of the hypotheses are supported i.e. quality culture impacts on performance via the strengthening of infrastructure practices which support core practices. The findings includes the cultural component in quality management theory, the absence of which may explain the inconsistent outcomes in quality program implementations.

3.6.2 ANALYSIS OF QUALITY PRACTICE / PERFORMANCE MODELS

According to Sluti (1992), a model represents a simplified version of reality. In the current context the focus is on the impact of quality practices on performance. Given the acceptance of other influences on performance, the measurement of which would be impractical, researchers aim to determine "associations" between constructs as opposed to cause and effect relationships.

The essential components of a quality practice / performance model are depicted in Figure 3-19.

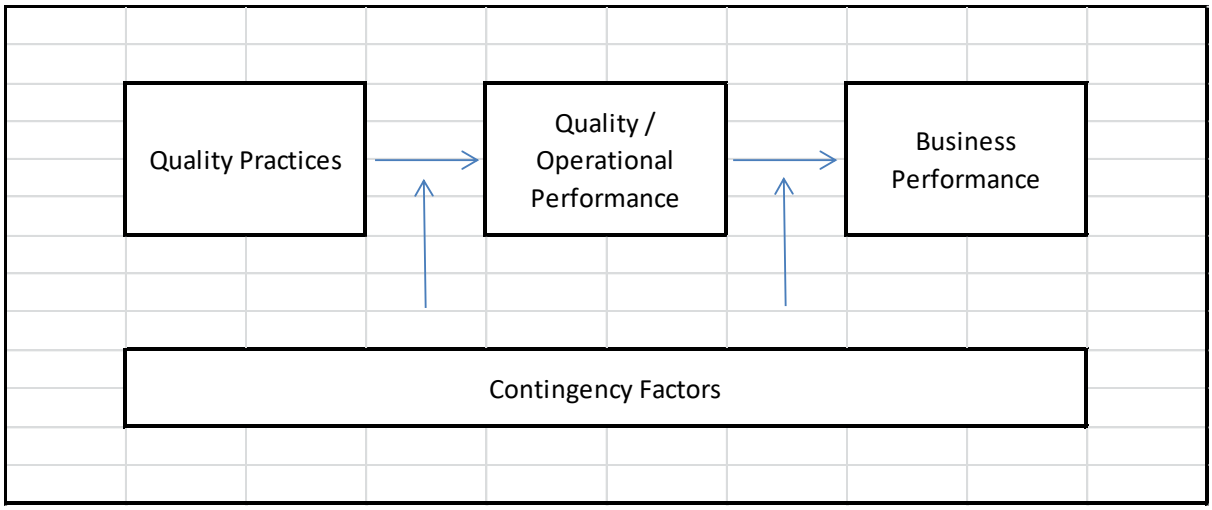


Figure 3-19: Basic Components of a Quality Practice / Performance Model

The fundamental hypotheses in this model may be stated as follows:

Fundamental Hypothesis 1

Quality practices have an impact on Operational Performance which in turn has an impact on Business Performance.

Fundamental Hypothesis 2

Contingency Factors have a moderating impact on the relationship between Quality Practices and Performance.

Key characteristics of such models include:

- The choice, combination and structure of the elements employed to define the quality practice, quality performance and contingency constructs.
- Direct / indirect relationships or the use of intermediate variables
- The level of sophistication of data processing techniques employed.

These characteristics and the varied implementations across studies are described in the following paragraphs.

When researchers developed higher resolution models, where individual quality practices were identified, these practices mostly resembled the elements of a TQM approach. The key practices included Leadership, Customer Focus, Human Resources, Supplier Management, Information and Analysis. Table 3-3 provided more details on the quality elements. Examples of higher resolution models are evident in studies such as Flynn et al (1994), Flynn et al (1995), Zhang (2000), Kaynak (2003), Sila (2007), Jayaram et al (2010) and Fening et al (2013).

In lower resolution models, quality practices are defined as either a single construct or a set of second order constructs. These types of models are present in Das et al (2000) who used a single element quality construct called "Firm Quality Strategy", Fynes & Voss (2001) with a single construct called "Quality Practices", Salaheldin (2008) who used three second order constructs called "Strategic Factors", "Tactical Factors" and "Operational Factors" and Wu (2014), who group quality practices under "Infrastructure Practices" and "Core Practices". Dow et al (1999), however, specifically looked at the question of how quality practices impacted on performance i.e. do quality practices independently influence performance, (called the "Baseline Model") or do practices act together in a synergistic manner (called the "Best Practice Model") or do they work in groups (called the "Two Factor Model"), where second order constructs provided the best fit to the data?

Similar to the quality construct, the performance construct has been defined in various ways. Table 3-12 provides the details of measures employed for the measurement of operational and business performance.

Finally, studies have identified contingency factors in accordance to what authors perceived would have a significant impact on the quality practice / performance relationship (see Table 3-17).

In terms of the models or frameworks proposed, authors have suggested both direct and indirect relationships between quality practices and company performance (Lakhal & Pasin, 2008). Indirect relationships have manifested in models where researchers have first considered the impact of quality factors that contribute to the company culture (Jayaram et al. 2010) or infrastructure (Flynn et al. 1995; Wu, 2014) on functional quality practices which in turn impact on performance variables.

While certain models consider the parallel impact of quality practices on performance (Fening et al, 2013; Salaheldin, 2008; Zhang 2000; Flynn et al, 1994), others considered series relationships

among practices, where certain practices influenced other practices which in turn impacted on performance. For example, Wu (2014) proposed that "Quality Culture" practices impacted on "Infrastructure Practices" which in turn impacted on "Core Practices". This is somewhat similar to Jayaram et al (2010) where the model suggested that "Quality Culture" Practices impacted "Quality System Design" which impacted outcomes (performance).

Further differences in the research can be found in the methods of data analysis that range from correlation analysis (Powell, 1995), to regression analysis (Adam et al. 1997; Douglas & Judge, 2001; Shah and Ward 2003), to path analysis (Anderson, 1995; Flynn et al. 1995) and finally structural equation modelling (Dow et al, 1999, Das et al. 2000; Kaynak 2003; Martinez-Costa & Jimenez-Jiménez, 2009; Wu, 2014; Kafetzopoulos et al, 2015).

The various model characteristics are taken into consideration on the development of a quality practice / performance model for the current study.

3.7 THE IMPACT OF QUALITY ON PERFORMANCE

Advocates of popular quality systems such as TQM have claimed benefits including improved products, reduced costs, satisfied customers and employees, and improved financial performance. However, support for claims of the positive impacts of quality programs were mainly found in isolated case histories, anecdotal experiences and small-scale single-industry empirical studies (Sluti, 1992). Cases include the highly-publicised successes of high-profile US companies such as Ford and Xerox.

In support of the positive impact of quality, the Profit Impact of Marketing Strategy (PIMS) database, developed by the Boston Consulting Group and Harvard Business School, provides a significant source "supporting market share as positively and strongly related to perceived quality of a firm's products" (Adam, 1994). However, as stated by Sluti (1992:30), "PIMS-based data suffers from a lack of precise definition and measurement of quality. The possibility that quality may have varied meanings amongst differing industries and to individuals is not considered by the PIMS measure".

Contradictory evidence regarding the impact of quality programmes, as cited in Powell (1995), include the Wallace Company, a Houston oil-supply firm that filed for bankruptcy soon after winning the Baldrige Award. Furthermore, Florida Power and Light - a Deming Award winner - virtually eliminated its program over employee complaints of excessive paperwork. Arthur C. Little's (1992) survey of 500 US companies found that only one third experienced a significant impact and of 100 UK firms, only one fifth reported tangible results. Additionally, Powell (1995)

asserted that “empirical studies have not shown that TQM firms consistently outperform non-TQM firms”.

While there are many cases of companies like Ford and Xerox (Sluti, 1992) that have claimed major successes by applying quality management principles, these claims have not always been supported by rigorous empirical research to verify them. Where empirical studies have been conducted, some have found a positive impact of quality practices on both operational and business performance (Flynn et al., 1995; Anderson et al., 1995; Zhang, 2000; Kaynak 2003; Shah and Ward 2003; Sila, 2007; Salaheldin, 2008; Jayaram et al., 2010; Fening et al., 2013; Zhang and Xia, 2013; Wu, 2014; Kafetzopoulos et al., 2015; Basu & Bhola 2016; Abubakar and Mahmood, 2016). Some studies have found that while quality practices had a positive and significant impact on operational outcomes, the same could not be claimed for the impact on overall business performance (Sluti, 1992; Das et al., 2000; Fynes and Voss, 2001). Some researchers found mixed implications for performance due to quality practices i.e. not all quality practices had a significant impact on performance (Powell, 1995; Dow et al, 1999). Finally, some authors have reported a failure in quality practices to deliver on performance – noting failure rates as high as 60% (Dooyoung et al, 1998 cited in Nair, 2006).

The varied outcomes of the impact of quality practices on performance supports the motivation to investigate the quality practice / performance relationships in the specific industry of interest.

3.8 LITERATURE-BASED LOCATION OF CURRENT STUDY

The primary aim of the current study is to investigate the quality practice / performance relationships in the South African contact centre industry. From a quality dimension point of view the inputs from the early prescriptive literature and that from the quality awards criteria may be considered generic, covering a wide range of industries (as intended). The academic literature provides further definition of constructs together with suggested measurement scales in an effort to establish the validity and reliability of quality management measurement instruments. However, as indicated in Table 3.2, most prominent studies have been located in the manufacturing industries and hence the corresponding manufacturing bias. This is to be expected given that the concept of quality management is rooted in the manufacturing environment. While prominent generic models for quality measurement have been developed for service industries (Parasuraman et al, 1988), no specific empirical studies addressing the quality practice / performance relationships have been found in the contact centre industry, in South Africa or elsewhere. In order to establish the relevance of the quality dimensions to the South African contact centre industry, this study incorporates inputs from the significant international and domestic quality standards and industry reports. The incorporation of generic and industry-specific inputs affirms the uniqueness of this study i.e. the first empirical investigation of the

quality practice / performance relationships in the contact centre industry and specifically in South Africa.

3.9 CHAPTER SUMMARY

This chapter undertook the literature review on quality management and its impact on business performance. The initial focus was on the definition of the quality construct. The key literature sources consulted included prescriptive literature, significant academic studies, international quality awards criteria, industry relevant quality standards and prominent industry reports. The emphasis then shifted to defining performance measure and relevant contingency factors. Literature on the modelling of the practice / performance relationships and the impact of quality practices, together with a literature-based location of the study concluded the chapter.

The next chapter covers the application of the theory and the development of a model for the study leading to the articulation the hypotheses based on the research questions.

CHAPTER 4

MODEL DEVELOPMENT

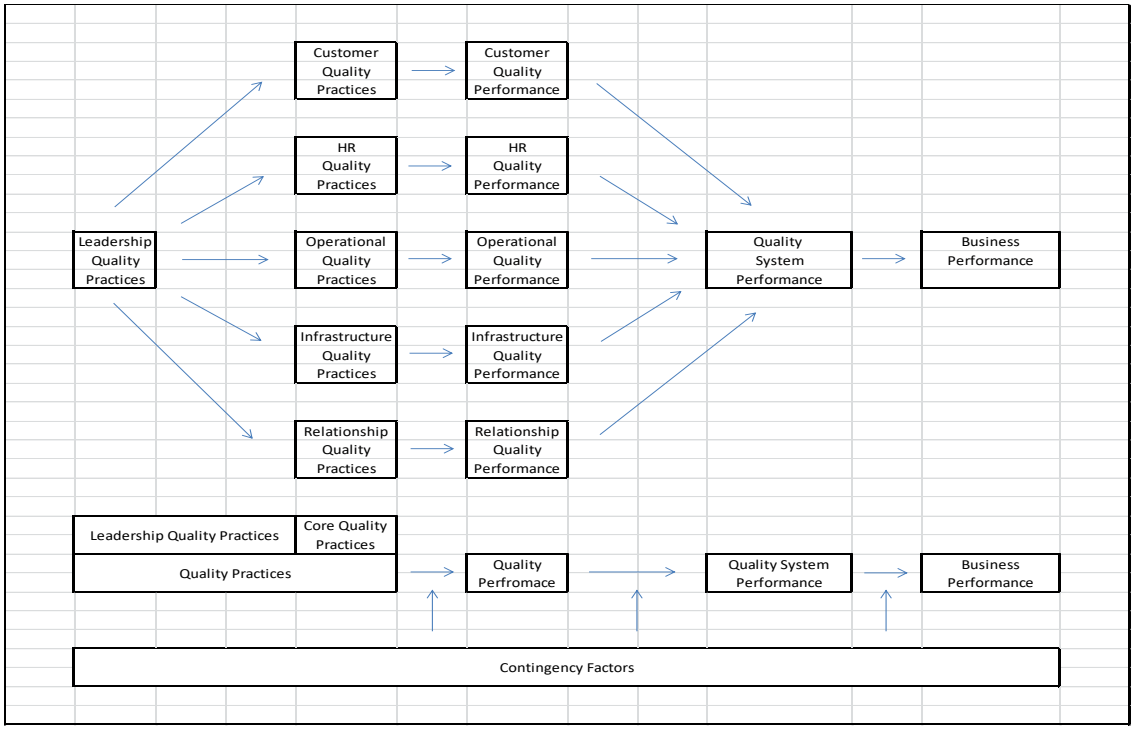
4.1 INTRODUCTION

The fundamental aim of this research is to develop a Quality Management Practice / Performance Model for the South African contact centre industry. The model will also incorporate the moderating effect of contingency factors on the relationship between quality practices, quality performance and business performance.

In this chapter a quality practice / performance model will be proposed that illustrates the theoretical relationships between practices and performance, together with the impact of contingency factors. This will be followed by the identification of the various practice, performance and contingency constructs accompanied by support from the literature covered in previous sections. The theoretical relationships depicted in the model will then be expressed as a series of hypotheses. Finally, the constructs will be operationalised via measurement statements to be utilised for the collection of data.

4.2 A QUALITY PRACTICE / PERFORMANCE MODEL

Fig 4-1 depicts a quality practice / performance model which provides a theoretical framework.



Source: Adapted from Wu (2014), Jayaram et al (2010), Kaynak (2003) and Flynn et al (1995)

Figure 4-1: Quality Practice / Performance Model

The proposed model is based on the literature, including aspects of various models as indicated below. The model is presented as a path diagram of the likely connections, pictorially and mathematically representing the impact of quality on performance and the moderating effect of contingency factors on such relationships. More specifically the model, as depicted in figure 4-1, proposes (hypothesises) the following:

- Leadership Quality Practices influences the implementation of Core Quality Practices.

Leadership practices have been isolated as the first group quality practices that provides an enabling environment for the deployment of Core Quality Practices. This is akin to models such as that proposed by Flynn et al (1994), Flynn et al (1995), Anderson et al (1995), Kaynak (2003) and Jayaram et al (2010). In these models, leadership has been included either as a sole enabler or part of the infrastructural or cultural elements. As per these studies, the current study expects that the implementation of leadership quality practices will significantly impact on the deployment of core quality practices.

- The implementation of Core Quality Practices results in Quality Performance.

The current contact centre literature, especially the quality standards discussed, provide extensive performance metrics that can be associated directly with a group of core quality practices. This part of the model asserts that quality practices impacts on functional performance i.e. performance that can be directly related to quality practice groups.

- The implementation of Quality Practices results in Quality System Performance.

Here performance is measured at an organisational level. The rationale underpinning this aspect of the model is that not all performance outcomes can be attributed to a specific quality practice or group of practices. They may be derived through the combined effect of various practices. It is expected that the quality practices impact on quality system performance indirectly via the quality performance variables.

- The implementation of Quality Practices results in Business Performance.

This part of the model captures that indirect impact that quality practices have on business performance i.e. via quality performance and quality system performance variables. Such relationships have also been tested in studies covered in the literature including (among others) Das et al (2000), Fynes and Voss (2001), Kaynak (20030, Sila (2007), Salaheldin (2008) and Jayaram et al (2010).

- Contingency factors have a moderating impact on the quality practice / performance relationships.

This aspect of the model aims to contribute to the debate regarding the effectiveness of the universal versus the contextual approach to quality management discussed in studies such as Das et (200), Sila (2007) and Jayaram et al (2010). The impact of contingency factors on the quality practice relationships will be tested.

These hypotheses will be developed within the context of the overall objectives of the study following the definition and support for the constructs employed in the model.

Sluti (1992) asserted that a model represents a simplified version of reality. While the quality practice / performance model focuses on the impact of quality practices on operational and business performance, other influences on performance are not denied. Consequently, when discussing such a model the words “associations” or “relationships” between constructs are used rather than “cause” and “effect”.

4.3 MODEL CONSTRUCTS

The essential building blocks of the quality management practice / performance model include quality practices, quality and business performance, and contingency factors. This section defines these constructs in terms of the constituent elements together with support in the form of theoretical references.

4.3.1 QUALITY PRACTICE CONSTRUCTS

The following paragraphs will identify the quality practice constructs that are considered relevant to the contact centre environment.

4.3.1.1 LEADERSHIP QUALITY PRACTICES

Leadership’s commitment has been identified as a key determinant of the successful implementation of a quality management system. Leaders must assume responsibility for quality performance in a manner that is clearly visible to the rest of the organisation. This may be achieved by integrating and regularly reviewing a quality focus in all activities, determining the customer experience and quality goals, allocating adequate resources to quality improvement efforts and being evaluated on quality performance. Table 4-1 provides literature support for the Leadership Quality Practices construct.

Table 4-1: Support for Leadership Quality Practices Construct

Prescriptive	Deming (1981) identified leadership as one of his 14 quality principles; Juran (1986) lists setting goals, providing resources and evaluating performance within his 3 basic processes; Crosby (1979) identifies management commitment, quality awareness and goal setting in his 14-step program for effective quality management.
Academic	Leadership quality practices are included in these studies : Saraph et al (1989), Flynn et al (1994) , Powell (1995), Flynn et al (1995), Anderson et al (1995), Ahire et al (1996), Zhang (2000), Fynes and Voss (2001), Douglas and Judge (2001), Kaynak (2003), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Fening et al (2013), Wu (2014), Basu and Bhola (2016).
Quality Awards	MBNQA includes leadership and strategic planning as two of its seven key elements EFQM includes leadership and policy and strategy as two of five key enablers Deming Prize includes policies (a leadership responsibility) as part of its 10 equal criteria
Quality Standards	ISO 9004:2009 – Leadership included as one of nine core principles ISO 18295:2017 – Customer Focused Leadership one of six focus areas. SANS 990:2009 - Leadership incl. Organisational Focus and Operational Plans – one of four focus areas. BS EN 1538:2009 – Management Strategy and Policy – one of 6 focus areas COPC CX – includes Leadership and Planning as a key element CCA Global Standard – includes Leadership responsibilities such as organisational planning

4.3.1.2 CUSTOMER QUALITY PRACTICES

Satisfying the needs of their customers should be considered a critical aim of all organisations, for it is customer satisfaction that leads to customer retention which ultimately contributes to the long-term success of the organisation. Customer satisfaction may be accomplished through actions such as using customer requirements as a basis for quality, measuring the customer experience via satisfaction surveys, complaints analysis and social media. Specifically, in the contact centre environment, employees should be empowered to resolve complaints quickly, maintain consistency across different channels, provide accurate, relevant and easily understood information and respect a customer's request to terminate a contact. Furthermore, services can be personalised based on a customer's profiles and customer journeys can be tracked across various channels. Table 4-2 provides literature support for the Customer Quality Practices construct.

Table 4-2: Support for Customer Quality Practices Construct

Prescriptive	Juran (1986) stressed the identification of customers and their needs within his Quality Planning process.
Academic	Customer involvement/commitment/focus is included in the following studies : Flynn et al (1994), Powell (1995), Flynn et al (1995), Ahire et al (1996), Dow et al (1999), Das et al (2000), Zhang (2000), Fynes and Voss (2001), Douglas and Judge (2001), Joiner (2006),

	Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Zhang et al (2012, Fening et al (2013), Wu (2014), Abubakar et al (2016), Basu and Bhola (2016)
Quality Awards	MBNQA includes customer and market focus as one of its seven key elements EFQM includes customer satisfaction as one of four key results.
Quality Standards	ISO 9004:2009 – Customer Focus is included as one of nine core principles ISO 18295:2017 – Customer Relationship Requirements is one of six focus areas. SANS 990:2009 - Customer Service Management is one of four focus areas. BS EN 1538:2009 – Customer Satisfaction is one of six focus areas COPC CX – Customer related practices included within processes and performance. CCA Global Standard – Customer Focus is included as a key element

4.3.1.3 HUMAN RESOURCE QUALITY PRACTICES

The success of a service environment such as a contact centre depends significantly on the performance of the workforce. Quality awareness and the reward of superior quality performance may be considered key to achieving organisational goals. Employees need to understand role functions, performance requirements and reporting lines. Ongoing development and coaching will contribute to good problem-solving skills and product / service knowledge. The right staff with the right skills must be provided across all channels within a suitable work environment. Attrition and absenteeism needs to be monitored, and staff satisfaction must be measured to guide improvement programs. Table 4-3 provides literature support for this construct.

Table 4-3: Support for Human Resource Quality Practices Construct

Prescriptive	Deming (1981) stressed training, education and pride of workmanship within 14 quality principles; Juran (1986) lists teams and training with his quality improvement process; Crosby (1979) included teams, quality awareness, training and recognition in his 14 step program for effective quality management.
Academic	The following studies highlight a focus on Human Resources : Saraph et al (1989), Flynn et al (1994), Anderson et al (1995), Powell (1995), Flynn et al (1995), Ahire et al (1996), Zhang (2000), Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Fening et al (2013), Abubakar and Mahmood (2016), Basu and Bhola (2016)
Quality Awards	MBNQA includes human resource focus as one of its seven key elements EFQM includes people management as an enabler and employee satisfaction as a result. Deming Prize includes human resources as part of its 10 equal criteria
Quality Standards	ISO 9004:2009 – Involvement of people is included as one of nine core principles ISO 18295:2017 – Human resources is one of six focus areas. SANS 990:2009 - -Human resource management is one of four focus areas. BS EN 1538:2009 – Human resources is included with Management Strategy COPC CX – includes people as a key element CCA Global Standard – includes employee focus as a key element

4.3.1.4 OPERATIONAL QUALITY PRACTICES

Operational quality practices focus on processes that ensure the smooth running of the organisation. In the contact centre environment, this may include agent processes for handling client contacts and escalations, management processes for handling varying workloads and staff availability, emergency processes to handle service disruption and improvement processes such as monitoring and analysing the cause of failures. Table 4-4 provides literature support for the Operational Quality Practices construct.

Table 4-4: Support for Operational Quality Practices Construct

Prescriptive	Deming (1981) included constant improvement within 14 quality principles; Juran (1986) included the development of processes under his quality planning process
Academic	Process Management and Operational Procedures are addressed in the following studies : Saraph et al (1989), Flynn et al (1994), Anderson et al (1995), Flynn et al (1995) , Zhang (2000), Fynes and Voss (2001), Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Zhang et al (2012, Fening et al (2013), Abubakar and Mahmood (2016), Basu and Bhola (2016)
Quality Awards	MBNQA includes process management as one of its seven key elements EFQM includes processes as an enabler
Quality Standards	ISO 9004:2009 – Process Approach is included as one of nine core principles ISO 18295:2017 – Operational Processes is one of six focus areas. SANS 990:2009 - Operational Management Practices is one of four focus areas. BS EN 1538:2009 – Processes is one of six focus areas. COPC CX – Processes is included as a key element CCA Global Standard – processes included under Operational Effectiveness

4.3.1.5 INFRASTRUCTURE QUALITY PRACTICES

Infrastructure quality practices address the availability of appropriate infrastructure required to deliver the customer experience. These include adequate information systems, relevant and easily accessible content, customer relationship management systems, suitable working environment in terms of ergonomics and noise management, and compliant data security systems. Table 4-5 provides literature support for the Infrastructure Quality Practices construct.

Table 4-5: Support for Infrastructure Quality Practices Construct

Prescriptive	Juran (1986) includes the establishment of infrastructure under his quality improvement process
Academic	The use of information systems and technology are included in the following studies : Saraph et al (1989), Flynn et al (1994), Powell (1995), Flynn et al (1995) , Ahire et al (1996), Fynes

	and Voss (2001), Douglas and Judge (2001), Kaynak (2003), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Wu (2014), Basu and Bhola (2016)
Quality Awards	EFQM includes resources as an enabler
Quality Standards	ISO 18295:2017 – Service Delivery Infrastructure is one of 6 focus areas. SANS 990:2009 - Infrastructure is inc under Technical Resource Management - one of 4 focus areas. BS EN 1538:2009 – Infrastructure is one of six focus areas. COPC CX – Infrastructure items are included under Knowledge and Content Management

4.3.1.6 RELATIONSHIP QUALITY PRACTICES

The management of relationships with external parties such as clients (organisations that outsource work to a contact centre) and suppliers is essential to the sustainability of an organisation. Practices may include the use of documented agreements and agreed Key Performance Indicators (KPIs) against which performance can be measured. Practices such as the engagement with fewer suppliers and the encouragement of long-term relationships may further contribute to higher quality output. Table 4-6 provides literature support for the Relationship Quality Practices construct.

Table 4-6: Support for Relationship Quality Practices Construct

Prescriptive	Deming (1981) included the principle of not awarding business on price within his 14 quality principles; Juran (1986) stressed the establishment of controls (including control of suppliers) under his quality improvement processes.
Academic	The management of supplier quality / relationships are addressed in the following studies : Saraph et al (1989), Flynn et al (1994), Powell (1995), Flynn et al (1995), Ahire et al (1996), Dow et al (1999), Das et al (2000), Zhang (2000), Fynes and Voss (2001), Kaynak (2003), Joiner (2006), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010) , Fening et al (2013), Wu (2014), Abubakar and Mahmood (2016), Basu and Bhola (2016)
Quality Awards	EFQM includes the management of suppliers under process management
Quality Standards	ISO 9004:2009 – Mutually beneficial supplier relationships is included as one of nine core principles ISO 18295:2017 – Client Relationships is one of six focus areas. SANS 990:2009 - Management of internal and external technical support is included under Technical Resource Management. BS EN 1538:2009 – Agreements with Client organisations included under Processes. COPC CX – Vendor and Key Supplier Performance included under Knowledge and Content Management CCA Global Standard – Third Party and Managed Relationships is one of eight focus areas.

4.3.2 PERFORMANCE CONSTRUCTS

Performance is viewed from three different perspectives i.e. Quality Performance, Quality System Performance and Business Performance.

4.3.2.1 QUALITY PERFORMANCE

Quality performance addresses performance that can be attributed to a specific area of a quality practices. Table 4-7 provides details of various aspects of quality performance together with literature support.

Table 4-7: Support for the Quality Performance Construct

Quality Practice Area	Typical Performance Indicators	Literature Support
Customer Performance	Customer Satisfaction Scores (CSat) Net Promoter Scores (NPS) Social Media Sentiment Complaints Ratios Opt-out Rates	Saraph et al (1989), Anderson et al (1994), Das et al (2000), Zhang (2000), Fynes and Voss(2001), Yeung et al (2006), Nair (2006), Sila (2007), Jayaram et al (2010) , EFQM; ISO 18295:2017; SANS 990:2009; BS EN 1538:2009; COPC CX
Human Resource Performance	Contact Quality Sales Conversions First Contact Resolutions Staff Satisfaction Scores Absenteeism and Attrition	Zhang (2000); Sila (2007); EFQM; EFQM; ISO 18295:2017; SANS 990:2009; BS EN 1538:2009; COPC CX
Operational Performance	Contact Response Ratios Customer Abandonment Rates Agent Occupancy Rates	Das et al (2000), Yeung et al (2006), Sila (2007), Salaheldin (2008); Zhang et al (2012) , ISO 18295:2017; SANS 990:2009; BS EN 1538:2009; COPC CX
Infrastructure Performance	System Availability Data Security Compliance with Regulations	Zhang (2000); Yeung et al (2006); Nair (2006); SANS 990:2009; BS EN 1538:2009; COPC CX
Relationship Performance	Client Satisfaction Scores Supplier response times	Ahire et al (1996); Zhang (2000); ISO 18295:2017; SANS 990:2009; BS EN 1538:2009; COPC CX

4.3.2.2 QUALITY SYSTEM PERFORMANCE

Quality system performance attempts to capture the impact of the overall quality system on the organisation i.e. the combined effect of all the quality practices that may not be attributed to any

specific practice in isolation. Table 4-8 provides details of typical system level performance indicators together with literature support.

Table 4-8: Support for the Quality System Performance Construct

Typical System Level Performance Indicators	Literature Support
Productivity Cost per Seat Failure Identification Learning Opportunities	Saraph et al (1989); Powell (1995); Kaynak (2003); Yeung et al (2006); Nair (2006); Sila (2007); Fening et al (2013);

4.3.2.3 BUSINESS PERFORMANCE

It is widely accepted that business performance is dependent on various aspects of both the internal and external environment. It follows that operational practices such as quality management are mere contributors to a business's overall performance. Table 4-9 provides details of typical business performance indicators together with literature support.

Table 4-9: Support for the Business Performance Construct

Typical Business Performance Indicators	Literature Support
Competitive Advantage Market Share Revenue Profitability	Powell (1995), Flynn et al (1995), Das et al (2000), Zhang (2000), Fynes and Voss (2001), Kaynak (2003), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Fening et al (2013).

4.3.3 CONTINGENCY FACTORS

Contingency factors may have a moderating effect on the quality practice performance relationship. Table 4-10 lists the contingency factors that will be considered together with literature support.

Table 4-10: Support for Contingency Factors

Contingency Factor	Literature Support
Management Knowledge of Quality Management	Benson et al (1991)
Industry Rivalry	Powell (1995)
External demand for compliance to standards	ISO 18295:2017; SANS 990:2009; BS EN 1538:2009.
Culture	Wu (2014); McAdam et al (2016)
Organisational Structure	Zhang et al (2012)
Environmental uncertainty	Zhang et al (2012)

The impact of the demographic factors on the practice / performance relationships will also be investigated. Table 4-11 provides the details of the demographic factors considered,

Table 4-11: Demographic Factors

Demographic	Detail
Province	Gauteng, Western Cape, KZN, Other (Specify)
Service Type	Captive, Outsourced, Both
Markets Served	Domestic, International, Both
Ownership	Majority SA Owned, Majority Foreign Owned
Services Provided	Inbound Customer Service, Outbound Customer Service, Inbound Sales, Outbound Sales, Media, Back Office Processing, Debt Counselling, Collections, Financial, Energy, Telecoms, Retail, Transport, IT, Public, Other (Specify)
Sectors Served	Health, Legal, Marketing, Education, Tourism, Security, Other (Specify)
Contact Centre Size (Seats)	0 – 20, 21 – 70, 71 – 200, 200+
Age of Contact Centre (Years)	0 – 2, 2 – 5, 5 +

4.4 HYPOTHESES DEVELOPMENT

The fundamental aim of this research is to develop a Quality Management Practice / Performance Model for the South African contact centre industry. The model will also incorporate the moderating effect of contingency factors on the relationship between quality practices, quality performance, and business performance.

These objectives will be achieved by answering a series of relevant research questions. In this section each research question will be elaborated on, leading to a corresponding hypothesis that will be tested via the research process.

Research Question 1: To what extent are quality practices deployed in the South African Contact Centre Industry?

While the South African Contact Centre Industry has been a leader in the development of domestic quality standards (SAN 990:2009) and a key representative in the development of international quality standards (ISO 18295:2017), to date there has not been any study that measures the extent to which the industry deploys these or any other quality practices. After developing and testing a relevant measurement instrument, this study will attempt to answer this question. This leads to the first hypothesis:

Hypothesis 1 (H1): The South African Contact Centre Industry deploys quality management practices

Research Question 2: Are quality management practices deployed in unison or as individual practices?

While the first question looked at the extent of quality practice deployment, the second question will explore how these practices are deployed. The literature shows that quality management practices are normally prescribed as a set of practices or in combination with each other. This is evident in the prescriptive work of early contributors such as Deming (1981), Juran (1986) and Crosby (1979) to the academic work of researchers including, Saraph et al's (1989) eight core dimensions, Flynn et al's (1994) seven core dimensions or Powell's (1995) 12 variables. The same holds true for the recognised Quality Awards and the Quality Standards covered in the literature review. This question will look at the correlation among the various quality practices. The second hypothesis thus reads as follows:

Hypothesis 2 (H2): The South African Contact Centre Industry deploys quality management practices in unison.

Research Question 3: How do Leadership Quality Practices influence the deployment of Core Quality Practices?

Leaders set the tone of an organisation. When leaders demonstrate an accountable work ethic, we reasonably expect subordinates to follow. The attitude of leaders towards quality management will first be reflected in leadership quality practices such as quality planning and the allocation of adequate resources for quality programmes. Such leadership quality practices should be closely followed by the deployment of core quality practices, such as customer and employee related practices. We expect that the deployment of core practices should be closely related to that of leadership practices. The third hypothesis follows as:

Hypothesis 3 (H3): Leadership Quality Practices have a positive and significant impact on the deployment of Core Quality Practices.

Research Question 4: How do Quality Practices impact on Quality Performance?

In the contact centre environment, it is possible to measure the direct impact i.e. Quality Performance of specific core quality practices namely Customer, Human Resource, Operational, Infrastructure and Relationship practices. The corresponding hypothesis is:

> ***Hypothesis 4 (H4): Quality Practices have a positive and significant impact on Quality Performance.***

Research Question 5: How do Quality Practices impact on Quality System Performance?

Certain performance outcomes due to quality practices manifest on a system level, i.e. at a level higher than outcomes attributable to specific practices. These outcomes may be considered as the combined effect of various practices. Accordingly, the fifth hypothesis to be tested is:

> ***Hypothesis 5 (H5): Quality Practices have a positive and significant impact on Quality System Performance.***

Research Question 6: How do Quality Practices impact on Business Performance?

Sluti (1992) references the DuPont system of Financial Analysis which is widely accepted model that depicts the numerous influences impacting business performance. The model shows that while operational performance does have an impact on business performance, Return on Investment (ROI) is influenced by many other factors. Consequently, while we expect to see an impact on business performance due to operational initiatives such as quality practices, it is expected this this relationship may not be very strong. Here we test the sixth hypothesis:

> ***Hypothesis 6 (H6): Quality Practices have a positive and significant impact on Business Performance.***

Research Question 7: Is there synergistic value in the deployment of Quality Practices?

This question is related to research question 2. While quality practices are normally deployed in unison, various authors such as Powel (1995) and Das (2000) have questioned the interdependence of these practices. Do all quality practices contribute to positive outcomes? Put differently, are quality practices individually related to performance or is there synergistic value to be found in the relationship between practices? The seventh hypothesis related to this question is:

Hypothesis 7 (H7): Synergistic value exists in the deployment of Quality Practices.

Research Question 8: How do contingency factors moderate the relationship between Quality Practices and Performance?

The various environmental / contingency factors detailed in tables 4-10 and 4-11 are assumed to have an impact on the relationship between practice and performance. The accompanying eight hypothesis follows:

Hypothesis 8 (H8): Contingency factors have a moderating impact on the relationship between Quality Practices and Performance.

4.5 OPERATIONALISING THE MODEL DIMENSIONS

Table 4-12 provides details on the sources that were consulted in the development of measurement statements to operationalise the practice and performance constructs discussed in the preceding sections.

Table 4-12: Sources consulted in the development of Measurement Statements.

Category	Source
Academic	See Table 3-2 Studies spanning 1989 to 2016
Quality Awards	Malcolm Baldridge National Quality Awards (MBNQA) (USA) European Foundation for Quality Management (EFQM) Excellence Model Deming Prize (Japan)
Quality Standards	ISO 9004:2009 – Quality Management Principles ISO 18295:2017 – ISO Standards for Contact Centres SANS 990:2009 - -South African Standards for Contact Centres BS EN 1538:2009 – UK Standards for Contact Centres COPC CX – Commercial Standard for Contact Centres CCA Global Standard – Commercial Standard for Contact Centres
Industry Reports	2008 National BPO and Call centre Report – C3 Africa Research 2014 Salary Survey Report – CallForce 2015 Key Indicator Report – Business Process enabling South Africa (BPeSA) 2016 Global Benchmarking Report – Dimension Data

4.5.1 QUALITY PRACTICES

Tables 4-13 to 4-18 include the measurement statements considered for operationalising the quality practices together with literature support.

Table 4-13: Leadership Practice Statements.

	Leadership Practices	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Leadership assumes responsibility for Quality Performance	✓			
2	Leadership determines the customer experience and quality goals	✓		.✓	
3	Leadership allocates adequate resources for Quality Improvement efforts	✓			
4	Leadership actively communicate their Quality commitment to employees	✓			
5	Leadership is evaluated on Quality Performance	✓			
6	Integration of Quality Focus in all activities is regularly reviewed			✓	

Table 4-14: Customer Practice Statements.

	Customer Practices	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Our Contact Centre implements Customer related Quality Practices			✓	
2	We use customer requirements as a basis for quality	✓	✓	✓	
3	All customer interactions are consistent across all communication channels			✓	✓
4	Information provided is accurate, relevant and easily understood			✓	
5	Customer Experience is measured via Customer Satisfaction Surveys	✓	✓	✓	✓
6	Customer Experience is measured via Complaints Analysis	✓	✓	✓	
7	Customer Experience is measured via other means such as Social Media, Employee Feedback, etc.			✓	
8	Processes are in place for handling complaints about the Call Centre or Products/Services			✓	
9	Customer service employees are empowered to resolve complaints quickly	✓	✓		
10	The Identity of the Client/ Call Centre is made clear in each interaction			✓	
11	Customers are clearly informed about legal, financial and contractual implications			✓	
12	A contact that is not wanted by the customer is terminated and the customer is not contacted again			✓	
13	Services are personalised based on Customer profiles				✓
14	Customer journeys are tracked across various channels				✓

Table 4-15: Human Resource Practice Statements.

	Human Resource Practices	Academic	Quality Awards	Quality Standards	Industry Reports
1	Our company implements Employee related Quality Practices			✓	
2	We build quality awareness among employees on an on-going basis	✓	✓		
3	The right staff with the right skills are provided at the right times across all channels			✓	
4	A suitable work environment is provided to deliver the desired customer experience			✓	
5	Organisational structure and reporting lines are well defined and communicated		✓	✓	
6	QA functions are carried out			✓	
7	Training and development is conducted			✓	
8	Coaching is conducted			✓	
9	Compliance - knowledge of customer and data legislation is available			✓	
10	Product / Service knowledge and content management is available			✓	
11	All role functions and performance requirements are specified and understood by employees			✓	
12	The Code of Conduct is well defined and communicated			✓	
13	Agents have appropriate language skills to meet the needs of the target customer base			✓	
14	Agents have good problem-solving skills	✓		✓	
15	Agents are encouraged to ask questions, report problems and express ideas		✓		
16	Agents competencies are reviewed at least annually			✓	
17	Agents are encouraged to pursue formal qualification and accreditation schemes			✓	✓
18	Agent performance data is available (scorecards)			✓	✓
19	Agents are recognised for superior quality performance	✓	✓	✓	
20	Staff satisfaction is measured to understand staff needs and take action to improve as required		✓	✓	✓
21	Staff Attrition and Absenteeism is monitored and managed			✓	✓

Table 4-16: Operational Practice Statements.

	Operational Practices	Academic	Quality Awards	Quality Standards	Industry Reports
1	Our Company implements Operational Quality Practices			✓	
2	Work processes are clearly communicated to employees	✓	✓		
3	Processes are in place for customer contact handling			✓	

4	Processes are in place for escalation			✓	
5	Processes are in place for service recovery			✓	
6	Forecast and scheduling processes are in place in order to deal with customer demands in a timely manner			✓	
7	Contingency plans to deal with unexpected peaks of workload or lower than forecast staff availability are in place			✓	
8	Samples of customer interactions for all channels and service types offered are measured and monitored	✓		✓	
9	Root Cause Analysis is conducted when failures occur	✓		✓	
10	Key processes are systematically improved to achieve better quality	✓	✓		

Table 4-17: Infrastructure Practice Statements.

	Infrastructure Practices	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Our company implements Quality Practices related to Infrastructure			✓	
2	Migration to Digital Channels is a priority				✓
3	Implementing Cloud based solutions is a priority				✓
4	Systems are in place that record customer interaction history			✓	
5	Customer interaction details are easily accessible and available to agents			✓	
6	Data and information is accessible to enable agents to deliver quick and accurate answers to customers			✓	
7	All Customer Interactions (across channels) are processed in a single system				✓
8	All customer data is handled, stored and retrieved in a secure, access controlled and monitored environment		✓	✓	
9	A suitable work environment, taking into account ergonomics, is provided			✓	
10	Steps are taken to minimize the impact of noise on agents and customers			✓	
11	Processes are in place to ensure continuation of service in case of emergencies			✓	
12	Risk Management (fraud / bribery / corruption) procedures are well defined and communicated			✓	

Table 4-18: Relationship Practice Statements.

	Relationship Practices	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Our company implements Quality Practices related Client and Supplier Relationships			✓	
2	Where applicable, the Call Centre has a documented agreement with the client that addresses the details of the service			✓	
3	Performance is monitored against KPIs agreed with the client			✓	

4	Supplier relationships are governed by SLAs			✓	
5	Fewer suppliers are used and long-term relationships are encouraged	✓	✓		

4.5.2 QUALITY PERFORMANCE

Table 4-19 to 4-23 include the measurement statements considered for operationalising quality performance together with literature support.

Table 4-19: Customer Performance Statements

	Customer Performance	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Performance related to Customers has improved due to Quality Practices			✓	
2	Customer Satisfaction scores (CSat) have improved			✓	
3	Net Promoter Scores (NPS) have improved			✓	
4	Social Media Sentiment has improved			✓	
5	The volume of complaints as a % of total interactions has reduced	✓	✓	✓	✓
6	Opt out rate has reduced			✓	

Table 4-20: Human Resource Performance Statements

	Human Resource Performance	**Academic**	**Quality Awards**	**Quality Standards**	**Industry Reports**
1	Performance related to Employees has improved due to Quality Practices			✓	
2	The accuracy / completeness of information provided to the customer has improved			✓	
3	Contact Quality in terms of agent empathy, politeness, listening and appropriate response has improved			✓	
4	The percentage of interactions resolved in the first contact with a customer has increased			✓	
5	Ratio of repeat calls for same query as % of total calls has reduced			✓	
6	Staff Satisfaction Scores have improved		✓	✓	
7	Absenteeism has reduced			✓	
8	Attrition has reduced			✓	

Table 4-21: Operational Performance Statements

	Operational Performance	Academic	Quality Awards	Quality Standards	Industry Reports
1	Operational Performance has improved due to Quality Practices			✓	
2	Total interactions responded to as a % of total interactions offered has increased			✓	
3	Total interactions dropped by customer before answered as % of total has reduced			✓	
4	Agent occupancy has improved			✓	
5	Scheduling Accuracy has improved			✓	
6	Contactability of customers has improved			✓	
7	Response time across digital channels have improved			✓	✓

Table 4-22: Infrastructure Performance Statements

	Infrastructure Performance	Academic	Quality Awards	Quality Standards	Industry Reports
1	Performance related to Infrastructure has improved due to Quality Practices			✓	
2	System availability has increased			✓	
3	We have increased compliance with laws and regulations		✓		

Table 4-23: Relationship Performance Statements

	Relationship Performance	Academic	Quality Awards	Quality Standards	Industry Reports
1	Performance related to relationships has improved due to Quality Practices			✓	
2	Client Satisfaction scores have improved			✓	
3	Higher quality interaction with internal support departments		✓	✓	
4	Higher quality interaction with external support companies		✓	✓	
5	Improved supplier relationships	✓			

4.5.3 QUALITY SYSTEM PERFORMANCE

Table 4-24 includes the measurement statements considered for operationalising Quality System Performance together with literature support.

Table 4-24: Quality System Performance Statements

	Quality System Performance	Academic	Quality Awards	Quality Standards	Industry Reports
1	Overall Operational Performance has improved due to Quality Practices	✓			
2	Implementing Quality Practices has been a positive development	✓			
3	Quality Practices have improved our Productivity	✓	✓		
4	Overall Cost per Seat has reduced				✓
5	Process failures are more easily identified				✓
6	Learning / Skills development opportunities are more easily identified				✓

4.5.4 BUSINESS PERFORMANCE

Table 4-25 includes the measurement statements considered for operationalising Business Performance together with literature support.

Table 4-25: Business Performance Statements

	Business Performance	Academic	Quality Awards	Quality Standards	Industry Reports
1	Overall Business Performance has improved due to Quality Practices	✓			
2	Quality Practices have improved our Competitive Advantage	✓	✓		
3	Quality Practices have improved our Market Share	✓	✓		
4	Quality Practices have improved our Revenue	✓	✓		
5	Quality Practices have improved our Profitability	✓	✓		

4.5.5 CONTINGENCY FACTORS

Table 4-26 includes the measurement statements considered for operationalising the Contingency Factors together with literature support.

Table 4-26: Contingency Factor Statements

	Contingency Factors	Academic	Quality Awards	Quality Standards	Industry Reports
Past Quality Performance					
1	Our past performance based on Quality Practices have been positive	✓			
Management Knowledge					
1	Managers are familiar with Quality Practices	✓			
2	Managers are familiar with SA Call Centre Standards (SAN990 : 2009)			✓	
3	Managers are familiar with International Call Centre Standards (UK/USA/AUS)			✓	
4	Managers are familiar with International Quality Awards (MBNQA/EFQM/Deming)		✓		
5	Managers are familiar with ISO Call Centre Standards (ISO/DIS 18295 : 2016)			✓	
Industry Rivalry					
1	Compared to other industries, rivalry in our industry is extremely intense	✓			
2	Demand in our industry has been growing rapidly over the last 3 years	✓			
3	We have a serious excess capacity problem in our industry	✓			
4	Our industry has very low entry barriers	✓			
External Quality Demand					
1	Our Clients demand adherence to Quality Standards			✓	
2	Government and Industry Bodies encourage compliance with Quality Standards	✓			
3	Compliance with Quality Standards is highly regarded in our industry			✓	
Culture					
1	Our channels of communication can be described as more open than restricted	✓			
2	Our operating procedures can be described as more flexible than formal	✓			
Organisational Structure					
1	There are many levels in our company structure	✓			
Environmental Uncertainty					
1	Customer requirements change very fast	✓			
2	Demand for our product / services is unstable and unpredictable	✓			

4.6 CHAPTER SUMMARY

This chapter presented a quality practice / performance model adapted from the literature covered in previous chapters. The various practice, performance and contingency constructs were identified accompanied by literature support. The relationships in the model were expressed as a series of hypotheses based on the research questions. Finally, the constructs were operationalised by the identification of theoretically supported measurement statements that form the basis of the measurement instrument to be utilised for data collection.

The next chapter details the research methodology i.e. all the methods, processes and techniques employed to arrive at answers to the research questions.

CHAPTER 5

RESEARCH METHODOLOGY

5.1 INTRODUCTION

This chapter describes the methods employed in arriving at the answers to the research questions. Firstly, the research objectives and questions are recapped in order to establish the platform for the methodology that follows. The research design then details the various aspects of the design including work that has been covered in previous chapters. These aspects include an understanding of the research environment; the concise statement of the research problem; determining the research objectives and question; reviewing the literature; developing a model (representing the hypotheses); and operationalising the model by means of measurement statements.

The remainder of this chapter focuses on understanding the population and determining an appropriate sample, followed by methods for collecting, preparing and analysing the data. Finally, ethical considerations and limitations of the study are presented.

5.2 RESEARCH OBJECTIVES AND QUESTIONS

The problem statement for the current research is stated as :

How do quality management practices impact on operational and business performance in the South African Contact Centre Industry?

This problem is addressed by aiming to achieve the following objectives:

Objective 1: Explore the deployment of quality management practices in the South African Contact Centre Industry.

This objective will be met by answering the following research questions:

Research Question 1: To what extent are quality practices deployed in the South African contact centre industry?

Research Question 2: Are quality management practices deployed in unison or as individual practices?

Objective 2: Develop a Quality Practice / Performance Model for the South African Contact Centre Industry.

This objective will be met by answering the following research questions:

Research Question 3: How do Leadership Quality Practices influence the deployment of Core Quality Practices?

Research Question 4: How do Quality Practices impact on Quality Performance?

Research Question 5: How do Quality Practices impact on Quality System Performance?

Research Question 6: How do Quality Practices impact on Business Performance?

Research Question 7: Is there synergistic value in the deployment of Quality Practices?

Objective 3: Assess the moderating effect of contingency factors on the relationship between quality practices and performance.

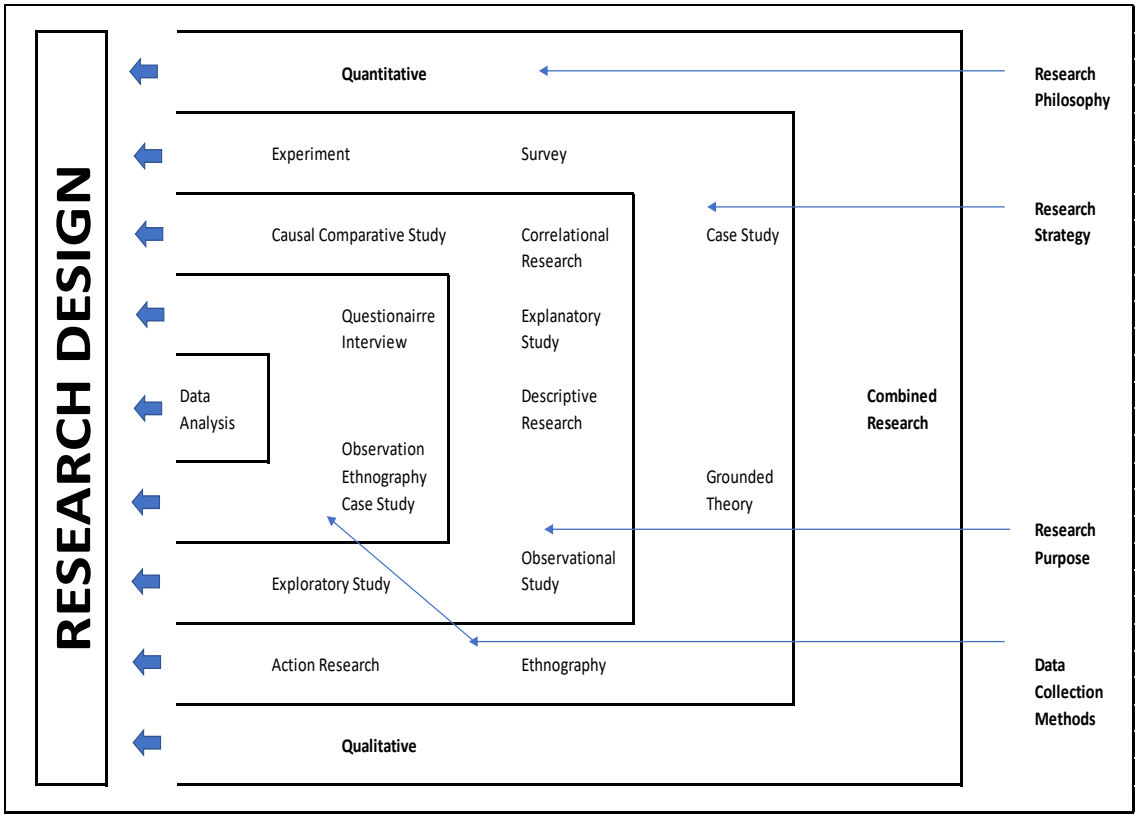
This objective will be met by answering the following research question:

Research Question 8: How do contingency factors moderate the relationship between quality practices and performance?

5.3 RESEARCH DESIGN

According to Charmaz (2003), as cited in Sibanda (2011) research design is a framework or plan specifying the methods and procedures for collecting and analysing the required data that aims to answer the research questions as unambiguously as possible. As per Figure 5.1, Saunders et al (2012) asserted that determining a research design appropriate for the needs of the study requires that a researcher engages in a series of choices and decisions ranging from the broader philosophical approach to practical decisions relating to data collection and analysis techniques.

From a **philosophical** point of view the scientific pursuit of knowledge may be broadly classified as positivist or phenomenological. The positivist approach is generally quantitative involving the numerical measurement and statistical analysis of data to examine social phenomena. Here, reality is viewed as phenomena that can be observed and measured. In contrast, phenomenologists argue that objectivity is an impossible aim given that the researcher, as a subjective entity, is part of the world being observed. Here studies are generally qualitative (Saunders et al, 2012). While the two main paradigms may be extremes of a continuum, a researcher may blend the assumptions and methodologies of both in an attempt to capture the benefits of each approach (Hussey and Hussey, 1997). **The current study adopts a positivist approach where the research questions will be answered via quantitative methods**.



Source : Saunders et al (2012)

Figure 5-1: Choices and Decisions in Research Design development

The general research process within the **quantitative** approach includes advancing a theory, developing hypotheses or research questions based on the theory, developing concepts and variables which are then operationalised via definable indicators that can be measured and finally using a research instrument to collect data to test the hypotheses i.e. deductive reasoning. In **qualitative** studies a focus area is defined, possibly with broad-based research questions, open-ended questions are asked, and observations are recorded. Categories and grouping of data may reveal patterns which may then be utilised in the explanation of phenomena. Employing an inductive approach, possible theories may be proposed (Saunders et al, 2012).

Research strategies may be distinguished based on the nature of the question asked and method used to answer the question. Quantitative strategies include experiments and surveys. Experimental designs seek to identify causal relationships by manipulating the independent variable and observing the effect on the dependent variable. In a survey strategy a sample is selected from a population. Results obtained from analysing the sample data is used to make inferences about the population. Surveys typically use questionnaires and interviews to establish attitudes, opinions and perceptions of the chosen sample. A well-designed survey requires that the sample is carefully chosen to ensure representivity of the larger population. Qualitative

strategies include case studies, action research grounded theory and ethnography (Saunders et al, 2012). Case studies include an intensive investigation of factors relating to the case under investigation. Action research is a cyclic process that includes taking action and reviewing outcomes as a basis for further action. It seeks to actively bring about change in a community or organisation. Grounded theory is based on the tenet that theory must be inductively derived from data. Data collection and analysis is interweaved to continually enhance insights of emerging theory. Finally, ethnography involves the emersion of the researcher in the research environment as a participant observer (Saunders et al, 2012). **The current study employs a survey strategy where a sample is randomly selected from the population**. To ensure representivity, the profile of the sample will be measured against that of the population along criteria that are may potentially impact the deployment of quality practices. Details are provided later in this chapter.

Research designs may also be classified in terms of **purpose**. Causal-comparative studies employ experimental designs to study comparable groups to uncover links among variables. Correlational research aims to discover relationships between variables via the use of statistics which measure the strength of relationships. Explanatory research seeks to explain the relationships among variables while descriptive research describes the characteristics of existing phenomena. Finally, exploratory research is concerned with discovering new insights about a phenomenon (Saunders et al, 2012). These categorisations of research designs are broadly in line with those proposed by Babbie (2011) and Van Wyk (2012) who elaborated on the broad categories of research design viz. exploratory, explanatory and descriptive designs. **In the current study, Research Question 1 falls under descriptive research while Research Questions 2 to 8 may be classified as correlational research** that seeks to determine the relationships between quality practice and performance variable together with the impact of contingency factors on such relationships.

In order to affirm the platform for the current research design, aspects of the research process covered in previous chapters are briefly summarised here. These include:

- A review of the **research environment** leading to an understanding of the problem and hence the motivation driving the research. Here the current status of the South African contact centre industry was reviewed within the international context, specifically in terms of the shifting focus towards service quality as a key competitive differentiator. The need to balance limited resources with high quality output requires an understanding of the impact of operational initiatives such as the implementation of quality management programmes.
- The concise statement of the **research problem** i.e. "*How do quality management practices impact on operational and business performance in the South African Contact Centre Industry?*" While being concise, the problem statement also aims to provide adequate

information to indicate the delimitations of the study. These delimits include the research domain (Quality Management), the industrial sector (Contact Centres) and the geographical scope and limits (South Africa).

- The determination of the **research objectives** that addresses the problem. This includes an exploration of the extent and manner in which quality practices are deployed in the South African contact centre industry, the development of a practice / performance model and the assessment of the impact of contingency factors on the practice / performance relationship.
- The translation of the objectives into specific **research questions** which form the functional threads to completion of the research process. The three objectives have been translated into eight specific research questions as recapped earlier in this chapter.
- A comprehensive **literature review** of the quality management, specifically in relation to the impact on performance. Four specific areas were covered, including prescriptive literature from early contributors in the field of quality management; key academic studies spanning the past three decades; internationally recognised quality awards criteria; and relevant international and domestic quality standards and reports.
- Grounded in the literature, the research questions were translated into a set of hypotheses depicted in a **path model**. The model indicates the relationships to be tested. These include the impact of Leadership practices on the deployment of Core Quality Practices, the impact of Quality Practices on Quality Performance, Quality System Performance and Business Performance and finally the moderating impact of Contingency Factors on these relationships.
- The constructs presented in the model were then operationalised through the development of **measurement statements**. Each statement is supported by literature as shown in the previous chapter. The measurement statements provided the input for development of the measurement instrument.

The remainder of this chapter will discuss the following aspects of the research design:

- Population
- Sampling
- The Measurement Instrument
- Data Collection
- Data Preparation (including Integrity, Normality, Bias and Multicollinearity checks)
- Scale Refinement (including Validity and Reliability Analysis)
- Data Analysis / Hypotheses Testing
- Ethical Considerations
- Limitations of the Research Design

5.4 POPULATION

According to Neumann (2006) as cited in Sibanda (2011:67), "A population is a large pool of cases of elements from which the researcher draws a sample, while a sample is a subset of the population or a small collection of units selected from the population for studying and coming up with generalisations that should be representative of the population". Similarly, Creswell (2014) defined a population as a full set of cases from which a sample can be extracted.

Regarding the population for this study, the best industry estimates suggests that there was a total of 185 call centres in 1997, increasing to 535 by 2002 and to 653 call centre operations by 2004 (Pandy and Rogerson, 2014). A national audit in 2007/2008 suggested that there were a total of 1,342 confirmed call centres across South Africa (C3 Africa Research 2008, cited in Pandy and Rogerson, 2014). Industry stakeholders estimated that approximately 1,500 call centres were in operation in 2012 (Rogan et al, 2013) and currently (2019) approx. 2000 centres - based on recognised trade association statistics. (Contact Centre Management Group, 2018).

For the current research the total population has been taken as the combined membership of the two trade associations i.e. Contact Centre Management Group (CCMG) and Business Process enabling South Africa (BPeSA) which equals 2049 call centres in 2018. While there may be contact centres that are not members of the trade associations, such membership can be considered a reasonable proxy for substantial businesses.

5.5 SAMPLING

The broader forms of sampling include probability and non-probability sampling. In non-probability sampling elements of the population do not have a predetermined chance of being selected while probability sampling allows an equal chance of every element in the population to be selected for the sample (Sekaran and Bougie, 2014). According to Sibanda (2011), a sample must be scientifically chosen such that each person has a measurable chance of being selected – then only can the results reliably reflect the larger population. More specifically, it is crucial that "the sample used is not selected haphazardly or only from persons who volunteer to participate" Sibanda (2011:90). The current research has employed probability sampling (simple-random) operationalised via a cross-section survey.

Roscoe (1975), cited in Hill (1998) suggested several rules of thumb deemed appropriate when determining sample size for most behavioural research. Those relevant to the current study include:

a. Generally, the choice of sample size is as much a function of budgetary considerations as it is statistical considerations. When they can be afforded, large samples are usually preferred over smaller ones .
b. In multivariate research (e.g. multiple regression) sample size should be at least ten times larger than the number of variables being considered. As per the practice / performance model proposed in Chapter 4, the current research will analyse up to 13 variables, requiring a sample size of at least 130 respondents.
c. There is seldom justification in behavioural research for sample sizes of less than 30 or larger than 500. Samples larger than 30 ensure the researcher the benefits of the Central Limit Theorem. An example may be found in Abranovic (1997), cited in Hill (1998). A sample of 500 assures that sample error will not exceed 10% of standard deviation, about 98% of the time.
d. Within these limits (30 to 500), the use of a sample about 10% size of parent population is recommended. Alreck & Settle (1995), cited in Hill (1998) stated that it is seldom necessary to sample more than 10%. Accordingly, in the current parent population of 2049 the sample size should be approximately 204.

This study has also considered the Krejcie and Morgan (1970) formulation for determination of adequate sample size. The formula reads as follows:

$$s = X^2 NP\,(1-P) / d^2\,(N-1) = X^2\,P\,(1-P)$$

where:

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

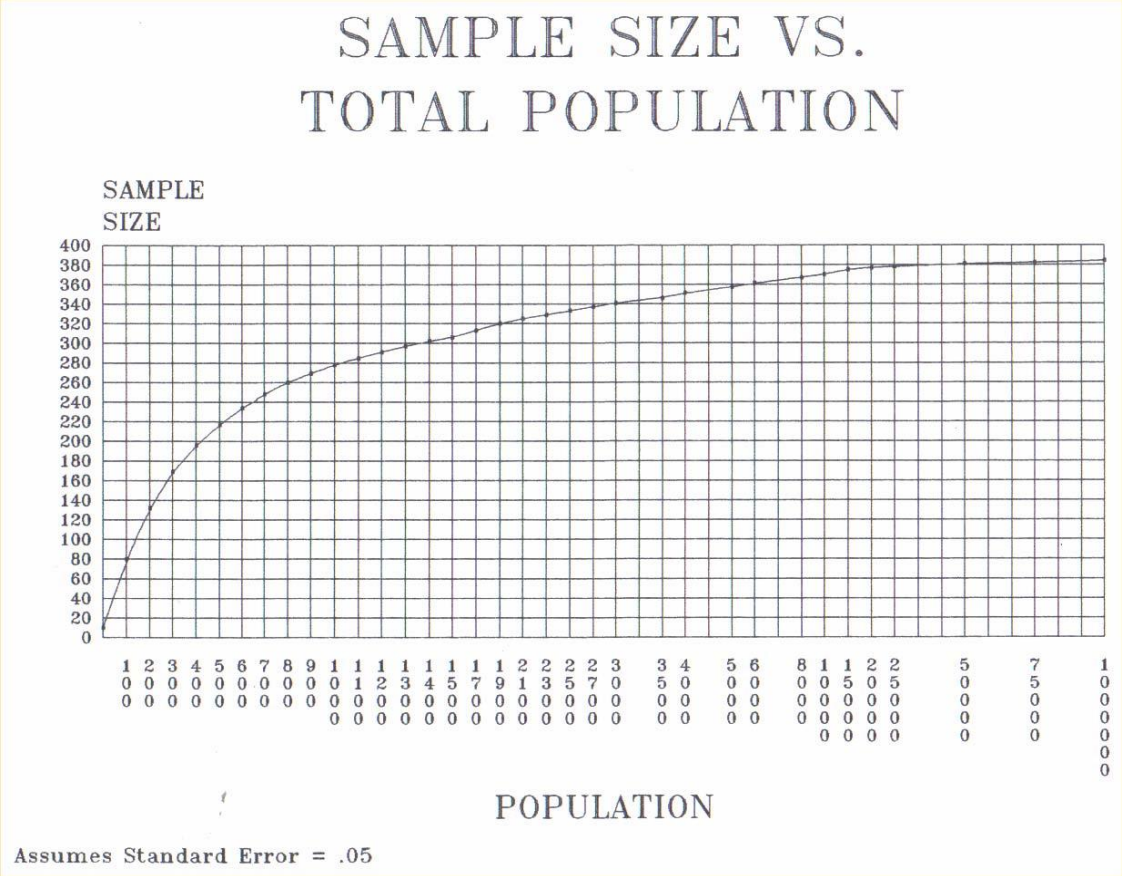
N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Figure 5-2 shows the Sample size vs. Total Population based on the formulation while Table 5-1 is a convenient extraction from Figure 5-1 that presents the required sample size (n) for a given population size (N).

According to the Krejcie and Morgan (1970) formulation, a representative sample size for a total population of 2049 would be 324 at a 95% confidence level.



Source : Hill (1998)

Figure 5-2: Sample size vs. Total Population

Table 5-1: Sample Size for a Given Population

N – n	N - n	N - n	N - n	N - n
10 - 10	100 - 80	280 - 162	800 - 260	2800 - 338
15 - 14	110 - 86	290 - 165	850 - 265	3000 - 341
20 - 19	120 - 92	300 - 169	900 - 269	3500 - 346
25 - 24	130 - 97	320 - 175	950 - 274	4000 - 351
30 - 28	140 – 103	340 - 181	1000 - 278	4500 - 354
35 - 32	150 - 108	360 - 186	1100 - 285	5000 - 357
40 - 36	160 - 113	380 - 191	1200 - 291	6000 - 361
45 - 40	170 - 118	400 - 196	1300 - 297	7000 - 364
50 - 44	180 - 123	420 - 201	1400 – 302	8000 - 367
55 - 48	190 - 127	440 - 205	1500 - 306	9000 - 368
60 - 52	200 - 132	460 - 210	1600 - 310	10000 - 370
65 - 56	210 - 136	480 - 241	1700 - 313	15000 - 375
70 - 59	220 - 140	500 - 217	1800 - 317	20000 - 377
75 - 63	230 - 144	550 - 226	1900 - 320	30000 - 379
80 - 66	240 - 148	600 - 234	2000 - 322	40000 - 380
85 - 70	250 - 152	650 - 242	2200 - 327	50000 - 381
90 - 73	260 - 155	700 - 248	2400 - 331	75000 - 382
95 - 76	270 - 159	750 - 254	2600 - 335	100000 – 384

Source : Sekaran and Bougie (2014)

The assertions by the various authors reveal that there is no one accepted method for determining sample size. This study has been guided by these principles / formulations and aimed to collect data from as large a sample as possible within the prevailing resource constraints. All guidelines and constraints considered, the study aimed to collect at least 200 completed responses. As presented in the section on data collection, a total of 207 completed responses were achieved.

5.6 THE MEASUREMENT INSTRUMENT

A draft measurement instrument was compiled from the measurement statements and implemented on an online platform – 'QuestionPro™'; found at the following link: http://sacontactcentrequalitysurveypilot.questionpro.com and included in Appendix A. This version of the instrument formed the basis of a pilot phase which aimed to validate the content of the instrument. The main activities included in the **Pilot Phase** were:

a. Soliciting the opinions of **Industry Experts** – recognised experts in the South African contact centre industry i.e. members of the nationally recognised Independent Customer Contact Centre Association (ICCCA), were asked to check the measurement statements for relevance and appropriateness. Member Profiles are included in Appendix B.

b. This was followed by a **Pre-test** conducted at several contact centres to check the clarity and answerability of the measurement statements. Due to the length of the questionnaire, specific attention was paid to the issue of "respondent fatigue" which could potentially result in a high drop-out rate. Selection of contact centres for the pre-test was based on a combination of convenience and the company's reputation in the industry.

The measurement instrument was finalised after the incorporation of comments obtained from industry experts and the pre-test (Pilot Phase). Essential feedback is included in Appendix C. The final questionnaire was made available on the online platform at the following link: http://sacontactcentrequalitysurvey.questionpro.com and included in Appendix D.

Salient points include:

a. The landing page confirms industry support for the research by mentioning the endorsement of Contact Centre Management Group (CCMG) which is the largest and most recognised contact centre trade association in South Africa. CCMG also provided the "Gatekeeper's Letter" for this research (included in Appendix E).
b. Respondents were incentivised to complete the survey by offering a complimentary copy of the findings and the chance of winning popular cutting-edge technology / vouchers.
c. Respondents were assured of confidentiality and anonymity and were required to consent to participation before continuing.

d. Section 1 requested contact and demographic information. Certain items of demographic information were used as contingency factors to assess the impact on the quality practice / performance relationships.
e. The remaining sections of the questionnaire mapped directly to the path model (Fig 4-1) where:

- Section 2 : Included 6 X Quality Practices variables assessed via 62 Statements
- Section 3 : Included 5 X Quality Performance variables assessed via 27 Statements
- Section 4 : Included 1 X Quality System Performance variable assessed via 5 Statements
- Section 5 : Included 1 X Business Performance variable assessed via 5 Statements
- Section 6 : Included 6 X Contingency Factors variables assessed via 14 Statements

f. The statements in sections 2 to 6 were measured on a five-point Likert scale where :

1 = "Strongly Disagree" and 5 = "Strongly Agree".

g. For the performance sections (3 to 5) respondent were asked to answer according to their experience over the last 2-3 years to capture major trends in the data.
h. Given that most contact centres are privately-owned companies that are reluctant to provide confidential financial information, subjective performance measures are utilised in the study. As per Powell (1995), this is widely accepted in organisational research.

The reliability and validity of the measurement instrument were checked using Cronbach's Alpha and Factor Analysis respectively. These procedures are described in detail later in this chapter.

5.7 DATA COLLECTION

The survey method with an online (web-based) questionnaire was utilised to collect data. The advantages of using a survey include:

a. Easy administration. Emails that included the link to the survey were sent out to potential respondents.
b. A wide national audience can be reached in a relatively inexpensive manner using a web-based platform.
c. Using recognised industry distribution channels (eg. Trade Associations) increases the probability of receiving authentic responses.
d. Respondents can complete the survey at their own convenience enabling the inclusion of questions that may require reference to company data.

Disadvantages of using this method include:

a. Certain measurement statements may be open to interpretation.

b. Respondents may easily drop-out without being encouraged to complete the survey.
c. Respondents may flag the survey to be completed at a later stage without getting back to it.
d. There is no control on hap-hazard answering of the survey.
e. While the intention of the incentive is to increase the number of responses, it could also attract inappropriate respondents.

The introductory emails (including the survey link) stated that that the survey was aimed at the General Manager, Quality Manager or Operations Manager. Managers in these roles would have the best knowledge of operational initiatives such as quality programmes and the consequent impact on performance.

Table 5-2 provides details of the channels via which access to the questionnaire together with the research objectives were publicised.

Table 5-2: Questionnaire Distribution Channels

Channels	Type	Approximate Recipients
Contact Centre Management Group (CCMG)	Trade Association	20 000
Business Process enabling South Africa (BPeSA)	Trade Association	50
Independent Customer Contact Centre Association (ICCCA)	Consultants Association	100
Direct Marketing Association of South Africa (DMASA)	Regulatory Body	100
Trade and Investment KZN (TIKZN)	Investment Promotion Agency	50
Rod Jones Consulting	Recognised Industry Consultant	100
BYC Aqua	Industry Quality Specialists	20
Accent Labs	Data Mangers	6000
Integrated Telecoms	Industry Telecoms Provider	50

The following steps were taken to collect the required data:

1. Several rounds of emails were sent out via the channels detailed on Table 5-2 over the period October 2017 to February 2018 – Included as Appendix F.
2. Each email campaign was closely followed up by calls made by research assistants to the email recipients.
3. Progress on the completion of responses was monitored on the online platform.
4. Follow-up emails were sent to respondents that dropped out of the survey .i.e. incomplete responses.
5. Finally, calls were made to incomplete respondents to offer telephonic assistance with the survey completion.

Further publicity was given to the study in a Newsletter published by Rod Jones Consultants, November 2017 edition – included in Appendix F.

Table 5-3 provides details of the survey responses extracted from the QuestionPro™ platform.

Table 5-3: Survey Response Statistics

Metric	Data
Viewed	1695
Started	604
Completed	207
Completion Rate	34.27%
Dropouts	397
Average Time to Complete	13 minutes

Appendix G provides a full list of companies / contact centres that completed the survey.

5.8 SOFTWARE TOOL – SPSS

The study utilised SPSS (Statistical Package for the Social Sciences) which is a Windows-based package for data processing and analysis.

The web-based data collection platform (QuestionPro™) includes a facility to directly export the survey data as an SPSS data file. This allows for the preservation of data integrity by circumventing the need to manually recapture data into SPSS.

5.9 DATA PREPARATION AND PRELIMINARY CHECKS

Prior to testing of the research hypotheses, the collected data was prepared and checked via the following processes:

a. Integrity checks were performed to ensure that the values of imported data were correct.
b. 1st, 2nd and 3rd order latent variables were calculated.
c. Descriptive statistics of all observed and latent variables were assessed.
d. Variable distributions were checked for normality.
e. Representivity of the sample was assessed against the population together with potential data bias.
f. Multicollinearity checks were performed between variable to assess the potential impact on regression analyses.

The following paragraphs will describe the details of these processes with the relevant results presented in Chapter 6.

5.9.1 DATA INTEGRITY CHECKING

Due to the varied nature of contact centre operations where a centre may be inbound / outbound / both or focused on sales / customer service, etc., each statement in the questionnaire included a 'not applicable' (N/A) option. In order to maintain the integrity of the data, all 'N/A' responses had to be transformed into "missing values". This transformation allowed for the correct calculations of variable means for the sample. This technique is equivalent to imputing missing data with the variable mean. According to Bentler (1993), as cited in Dow et al (1999), this technique is only advisable if the amount of missing data is low. The results of the 'missing data analysis' is included in Chapter 6.

It is worth noting that the questionnaire design did not allow for actual missing values since all statements in a section had to be rated before a respondent could continue to the next section.

5.9.2 CALCULATION OF LATENT VARIABLES

In order to complete the dataset in preparation for analysis, the latent variables, as portrayed in the Quality Practice / Performance Model (Fig 4-1) (reproduced below for ease of reference) were calculated. The values of the latent variables were calculated as the "mean" of the constituent elements.

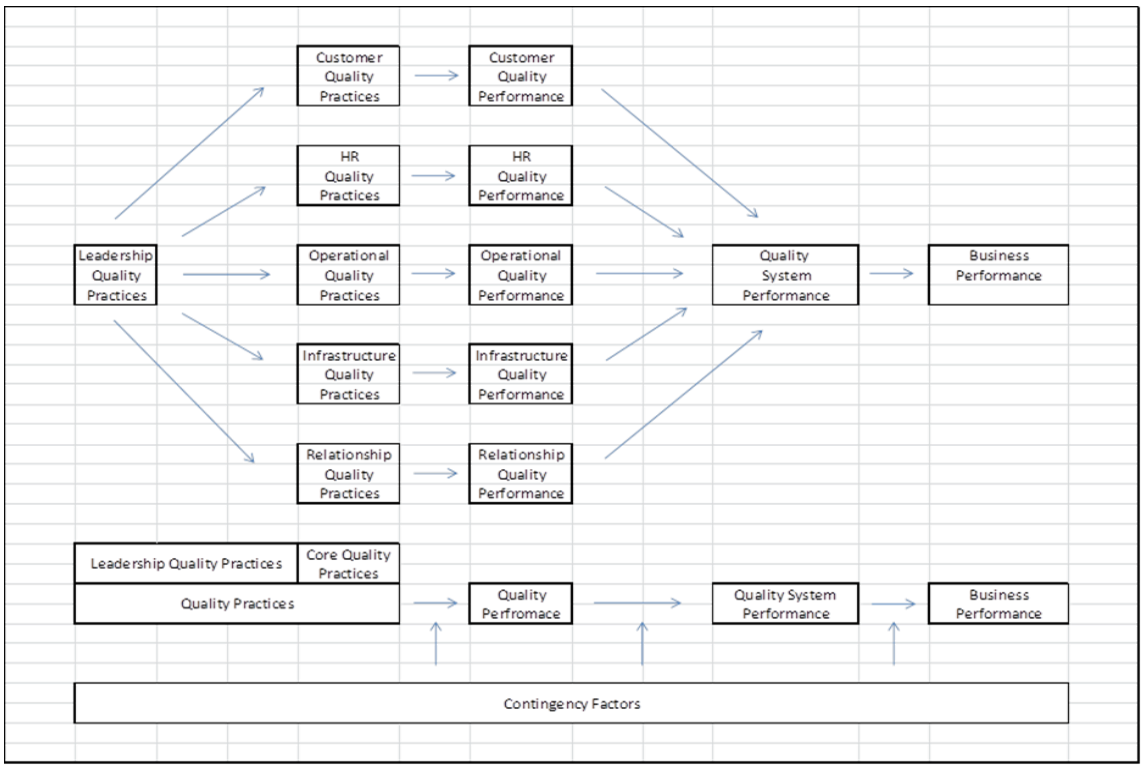


Table 5-4 provides details of these variables and the constituent elements. First order variables were computed as the mean values of the questionnaire items. Second order variables were

computed as the mean values of the relevant first order variables and the only third order variable (Quality Practices) was calculated as the mean of a first order variable (Leadership Practices) and a second order variable (Core Quality Practices).

Table 5-4: Latent Variables and Constituent Elements

Latent Variable		Constituent Elements
Practices		
1st Order	Leadership Practices	Questionnaire Items (6)
1st Order	Customer Practices	Questionnaire Items (13)
1st Order	HR Practices	Questionnaire Items (19)
1st Order	Operational Practices	Questionnaire Items (9)
1st Order	Infrastructure Practices	Questionnaire Items (11)
1st Order	Relationship Practices	Questionnaire Items (4)
2nd Order	Core Quality Practices	Customer Practices HR Practices Operational Practices Infrastructure Practices Relationship Practices
3rd Order	Quality Practices	Leadership Practices Core Quality Practices
Performance		
1st Order	Customer Performance	Questionnaire Items (6)
1st Order	HR Performance	Questionnaire Items (8)
1st Order	Operational Performance	Questionnaire Items (6)
1st Order	Infrastructure Performance	Questionnaire Items (3)
1st Order	Relationship Performance	Questionnaire Items (4)
2nd Order	Quality Performance	Customer Performance HR Performance Operational Performance Infrastructure Performance Relationship Performance
1st Order	Quality System Performance	Questionnaire Items (5)
1st Order	Business Performance	Questionnaire Items (5)
Contingency Factors		
1st Order	Management Knowledge	Questionnaire Items (3)
1st Order	Industry Rivalry	Questionnaire Items (3)
1st Order	Demand for Compliance	Questionnaire Items (3)
1st Order	Culture	Questionnaire Items (2)
1st Order	Organisational Structure	Questionnaire Items (1)
1st Order	Environmental Uncertainty	Questionnaire Items (2)

5.9.3 DESCRIPTIVE STATISTICS

The following descriptive statistics were generated for all statements and latent variables.

- Mean – This is the average score. Checks are normally for unusual means.
- Standard Deviation – Measure of dispersion of data. Checks for values that are too high.
- Skew – Describes the symmetry of data distribution. Used in normality checks.
- Kurtosis – Describes the pointiness of the data distribution. Used in normality checks.

The resulting statistics for each group of variables are presented on Chapter 6 while the details for each statement are included in Appendix H.

5.9.4 NORMALITY CHECKS

Determining the normality of data is necessary for the following reasons:

a. It is a pre-requisite in deciding on the types of statistical tests that should be used. Parametric tests are used for normally distributed data as opposed to non-parametric (NPar) tests for non-normal data. E.g. When comparing central tendencies of normal data, one uses ANOVA. For non-normal data the NPar Kolmogorov-Smirnov test may be used (Field, 2015).
b. Methods used in hypotheses testing such as regression (for Path Analysis) require normally distributed data. This pre-requisite may require the transformation of data using natural logarithms to compensate for any excessive skew and kurtosis (Field, 2015).
c. Factor analysis requires that skewness and kurtosis thresholds are not exceeded (Saraph et al, 1989). Skewness values must be below the threshold value of 2 and Kurtosis values must be below the threshold value of 6 (Sibanda, 2011).

The "One Sample Kolmogorov-Smirnov Test" has been applied to all latent variables to confirm the normality of distributions. Significance values < 0.05 indicate that the data is not normal given that the null hypothesis assumes that the data is normal (Field, 2015). The results are summarised in Chapter 6 and the details are included in Appendix H.

According to Field (2015:185), the Kolmogorov-Smirnov test should be used in conjunction with Histograms and P-P Plots to confirm normality due to these tests being based on 'null hypothesis significance testing' which means that:

a. In large samples they can be significant even for small unimportant effects and
b. In small samples they lack power to detect violations of assumptions

Histograms and P-P Plots for all latent variables are also included in Appendix H.

Histograms are plotted against a normal distribution such that a visual assessment of normality can be accomplished while P-P plot confirms normality when the points fall on the diagonal. See Figure 5-3 for example plots.

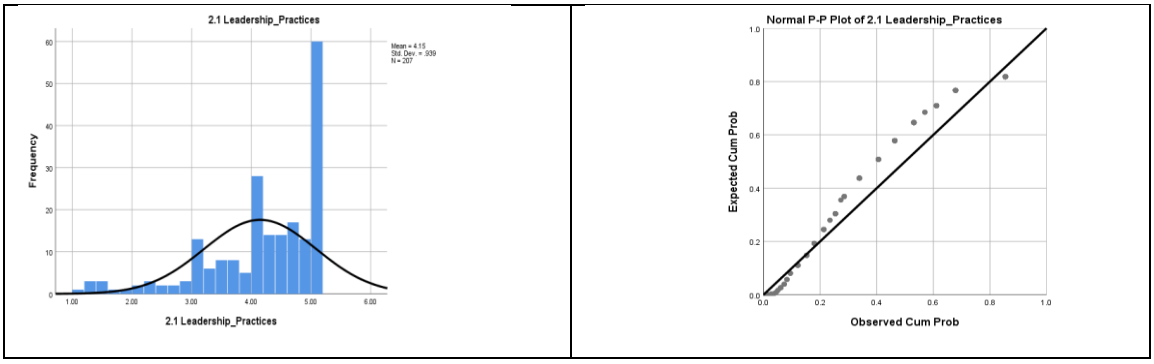


Figure 5-3: Example Histogram and P-P Plot

The Central Limit Theorem states that regardless of the shape of the population, parameter estimates of that population will have a normal distribution if the samples are 'big enough'. The widely accepted value of sample size is 30, although this number must be considered with caution and should be adjusted based on the expectation of outliers (Field, 2015:172). With the current sample size of 207, it is expected that lack of normality would not have an adverse impact on the processing of data.

Notwithstanding the effect of sample size, certain options are available to handle problems with data normality. These include 'Transformations' - such as "Log Transformations" that can correct for Skew or Kurtosis or 'Bootstrapping' – which is a tool for processing data when normality is in question (Field, 2015).

5.9.5 REPRESENTIVITY OF RESPONSES / DATA BIAS

The quality practice / performance model developed in this study aims to adequately represent the entire study population. It is therefore undesirable to have data influenced significantly by any group of respondents that share certain characteristics. To this end, the population has been profiled according to certain criteria that could potentially influence responses. These criteria, together with the motivation for their choice, include the following:

a. **Service Type (Captive vs. Outsourced)**

There is a significant difference in the way that captive and outsourced contact centres work. Captives may develop their own processes, and thus quality standards, while outsourced centres may subscribe to quality standards that are more recognised in the market. Compliance to recognised standards may be part of their service offering.

b. **Market Served (Domestic vs. International)**

Diversifying service provision from various parts of the globe may require a certain level of confidence in the quality of the service. Compliance to quality standards would contribute to such an assurance. It is expected that centres servicing international markets are either required to or adhere to more compliance to standards than those servicing purely domestic clients.

c. **Province (Gauteng/Western Cape/KZN/Other)**

The BPeSA Key Indicator Report (2015) shows that the key provinces in South Africa vary in the type of services provided. Gauteng focuses on Inbound Customer Service and Inbound Sales, the Western Cape focuses on Inbound Customer Service and Debt Collection, while KZN focuses on Outbound Sales and Debt Collection. The varying types of work may influence the adoption of standards.

d. **Size (Thresholds at 20/70/200 seats)**

The size of a contact centre may influence the extent to which operational initiatives such as quality practices are implemented. Larger centres may rely more on standard processes to control operations, hence noting a higher level of adoption, while smaller centres may rely more on tighter managerial control.

Table 5-5 presents the profile of the population in accordance with the above criteria.

Table 5-5: Population Profile

Total Population	Number	%			
	2049	100%			
Service Type		**Captive**	**Outsourced**	**Total**	
	%	55%	45%	100%	
	Number	1127	922	2049	
Markets Served		**Domestic**	**International**	**Total**	
	%	85%	15%	100%	
	Number (Seats)	190000	32500	222500	
Province		**WC**	**GAU**	**KZN**	**Other**
	%	20%	66%	13%	1%
	Number	410	1352	266	20
Size		**0-20**	**21-70**	**71-200**	**200+**
	%	22%	31%	26%	21%
	Number	451	635	533	430

Source: BPeSA

The following tasks were conducted to check for bias based on the population profile:

a. The profile of the respondents has been mapped against the population according to the above criteria and,
b. The differences in responses (based on the above criteria) have been checked for significance via Kruskal Wallis Tests. Significance values of < 0.05 indicate a statistically significant difference in the means hence a potential bias in the data. This determination allows for an assessment of the impact of instances where the respondent profile is different from that of the population.

The results of these tasks are included in Chapter 6.

5.9.6 MULTICOLLINEARITY

Multicollinearity exists when independent variables (as in a regression model) correlate with each other. According to Flynn et al (1995), when high levels of multicollinearity exit between independent variables, an analyst may find it difficult to draw inferences. However, Asher (1983), cited in Flynn et al (1995), has stated that even at relatively high values of correlation ($r = 0.8$) results can be close to true. He did further qualify that this may not hold at higher levels of correlation (i.e. $r > 0.8$).

At correlation levels higher than 0.8 consideration may be given to the Lewis-Beck suggestion that a "stronger indicator of multicollinearity is a high R^2 (coefficient of determination) value combined with statistically insignificant coefficients when each independent variable is regressed on all others" (Flynn et al, 1995:669).

Furthermore, during path analysis, the value of the Variance Inflation Factor (VIF) has been considered. According to Flynn et al (1995), this factor gives an estimate of the collinearities among the independent variables where a value less than 10 indicates that multicollinearity effects are not significant.

Multicollinearity checks have been accomplished by generating a bivariate correlation table for all practice and performance latent variables. The results are included in Chapter 6.

5.10 SCALE REFINEMENT AND VALIDATION

According to Ahire et al (1996), a thorough analysis of instruments used in empirical research is essential for reasons that include:

a. Providing confidence that the findings reflect the proposed constructs,
b. Producing validated scales that can be used by other studies and
c. Yielding valid tools for use by practitioners

The sections that follow will cover the methods that have been employed to refine and validate the scales.

5.10.1 EXPLORATORY VS CONFIRMATORY APPROACH

According to Ahire et al (1996), the fundamental approach to scale refinement (either exploratory or confirmatory) needs to be addressed before embarking on the process of scale refinement and validation. The decision here is based on whether the data structure is predefined or not.

In the typical exploratory approach to scale development there is no pre-defined structure to the data. Here measurement statements are identified within a particular domain, which in the current research would be "Quality Management". Data would then be collected, followed by conducting an "Exploratory Factor Analysis" (EFA) to identify the major factors based on factor loadings. Factors that may be identified could represent "Leadership Practices", "Customer Practices", etc. Ahire et al (1996) asserted that major limitations to this approach exist. These essentially include:

a. Items may load on more than one factor, thus affecting the measurement of both factors simultaneously. Here factors may not be distinct or,
b. Items may correlate with each other only statistically. When these items are put together, the factor may not have any clear identity.

EFA has been performed on the questionnaire items including the quality practice, performance and contingency items. The results, which are included in Chapter 6, illustrate the above limitations of the method. The detailed analysis is included in Appendix J.

The confirmatory approach is an alternative that assists in overcoming these limitations. In this approach the data structure is pre-defined into hypothesised factors (Field, 2015). Unidimensionality may then be established by performing an "Item Analysis" (IA) (Saraph et al, 1989) followed by a "Construct Validity Analysis" which is accomplished by a "Principal Components Analysis" (PCA) on each pre-defined factor.

An alternative would be to perform 'Confirmatory Factor Analysis' using Structural Equation Modelling (SEM), a technique that is beyond the scope of the current study. According to Basu and Bhola (2016), a goodness of fit index (GFI) of 0.90 for the model (specified for each construct in factor analysis) will indicate adequate unidimensionality.

Item Analysis and Principal Components Analysis will be elaborated on later in this chapter.

5.10.2 CONTENT VALIDITY

The validity of a measure refers to the extent to which it measures what it intends to measure (Field, 2015). According to Ahire et al (1996), when using a confirmatory approach, scales must be tested for content validity before any further refinement or validation takes place.

Kerlinger (1986) as cited in Dow (1999:6) stated that "assessing content validity is ultimately a matter of judgement. The content validity of an instrument depends on a careful assessment of the theory and past empirical work to build up a representative collection of items, and on adherence to 'sensible' procedures during the development stage of the instrument". This assertion is supported by Bohrnstedt (1983), cited in Ahire et al (1996:38), stating that "if items corresponding to various constructs of an instrument are derived from comprehensive analysis of relevant literature, content validity can be ensured".

In the current research content validity was maximised via the following three measures:

a. To ensure content validity at the early stages of the development of the measurement instrument, measurement statements were based on consultation of **recognised sources**. These included prescriptive literature from early prominent authors; key academic work on the impact of quality practices conducted over the past three decades; recognised international quality awards criteria; relevant domestic and international contact centre quality standards and significant industry reports.
b. The initial set of measurement statements were then reviewed by recognised **industry experts** (members of ICCCA).
c. This was followed by a **pre-test** that was conducted by Operations Managers at leading contact centres, thus further establishing content validity of the instrument. During pre-test interviews, the managers commented on the appropriateness of the items, critiqued their ease of comprehension, and suggested changes to improve the wording. Feedback is included in Appendix C.

The initial measurement instrument was adjusted based on the inputs received from the industry experts and the pre-test.

5.10.3 UNIDIMENSIONALITY

Items in a scale are unidimensional if they estimate a single construct thus justifying the use of a single value to represent such a construct (Field, 2015). A unidimensionality analysis may identify items that have been forced into a group (representing a construct) due to lack of conceptual clarity on a researcher's part (Ahire et al, 1996).

Nunnally (1967) developed a method, known as 'Item Analysis', to evaluate the assignment of items to scales. The method considers the correlation of each item with each scale. Specifically, the item-score to scale-score correlations are used to determine whether an item belongs to the scale as assigned, belongs to some other scale, or whether it should be eliminated. If an item does not correlate highly with any of the scales, it should be eliminated (Saraph et al, 1989).

Since the scale score is the average of the item scores, it is expected the item will correlate highly with the scale to which it contributes while having much lower correlation with other scales. An Item Analysis, to assess unidimensionality, has been conducted on all the quality practice and performance latent variables. Results are included in Chapter 6.

5.10.4 CONSTRUCT VALIDITY

Construct validity measures the extent to which the items in a scale all measure the same construct (Flynn et al, 1994). This may be established by "Principal Component Analysis" (PCA). As implied by the name, the method identifies the principal components present in a predefined factor. Ideally, a single component is identified where all of the items allocated to the factor load heavily to the single component.

Should items in a scale load to more than one component, a technique known as "Factor Rotation" may be employed to maximise the loading on a single component while minimising the loadings on other components. Rotation may either be "orthogonal" or "oblique" depending on whether components are allowed to correlate or not (Field, 2015:680). In this research an 'orthogonal rotation' method known as "Varimax Rotation" has been employed given that components should be independent.

Factor loadings of at least 0.40 are considered acceptable and an eigenvalue threshold value of 1 has been used as a cut-off to identify components (Flynn et al, 1994).

The Kaiser-Meyer-Olkin (KMO) measures sampling adequacy. According to Field (2015:684), "A value close to 1 indicates that patterns of correlation are relatively compact and so factor analysis should yield distinct and reliable factors. Values < 0.5 indicates that more data should be collected, or a reconsideration of the variables included."

The correlation between variables can be checked via "Bartlett's Test of Sphericity". This test checks whether the overall correlations between variables are significantly different from zero, and therefore not too small. In PCA, multicollinearity between variables i.e. high correlations is not a problem (Field, 2015: 685).

PCA has been conducted for all practice, performance and contingency latent variables. The results are summarised in Chapter 6 and details are included in Appendix K.

A Scree Plot is an additional aid that may utilised in a PCA. The point of inflection represents the cut-off point of significant components. The example shown in Figure 5-4 represents an ideal result where the point of inflection shows just one component with Eigenvalue > 1.

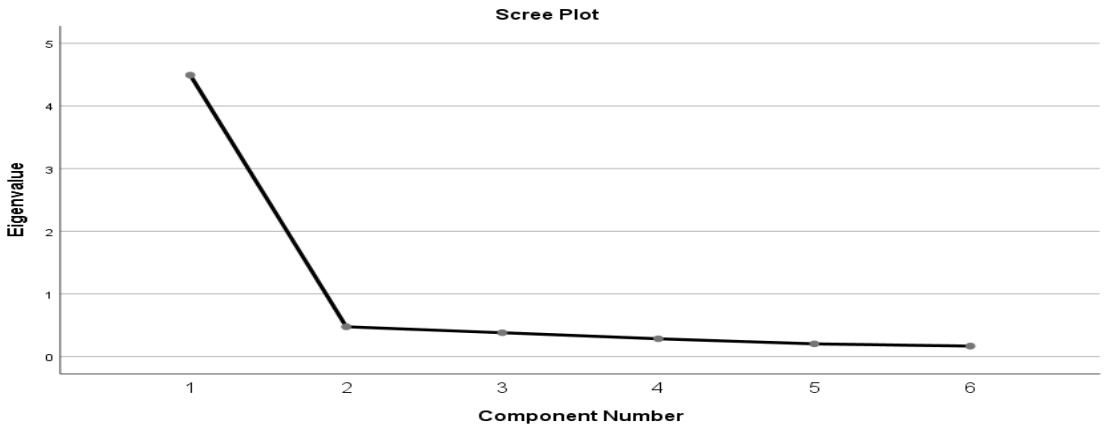


Figure 5-4: Example of a Scree Plot

5.10.5 RELIABILITY ANALYSIS

After the establishment of Unidimensionality and Construct Validity, the Reliability of the scales must be established before further validation (Ahire et al, 1996). Reliability refers to the degree of dependability, consistency or stability of a scale.

Saraph et al (1989), citing Nunally (1967), articulated four possible methods to assess reliability i.e. retest, alternate form, split halves and internal consistency. Due to limitations such as multiple administrations of the instrument, the internal consistency method is preferred. Internal consistency refers to the degree of homogeneity in a set of items and is the most general form of reliability estimation (Saraph et al, 1989).

Internal consistency can be estimated using a reliability coefficient such as Cronbach's Alpha (Cronbach, 1951). According to Van de Ven & Ferry (1979), cited in Powell (1995:24), "these coefficients should fall within a range of 0.70 to 0.90 for narrow constructs and 0.55 to 0.70 for moderately broad constructs." Maximisation of the Alpha coefficient may require the removal of certain scale items. Such item removal must, however, be conducted cautiously so as to not compromise the content validity.

Citing Bagozzi (1981), Ahire et al. (1996) stated that Cronbach's Alpha can be biased under certain conditions. The Wertz-Linn-Jorsekog coefficient (ρ_c) should therefore be used in conjunction with Cronbach's Alpha. A ρ_c value greater than 0.5 indicates scale reliability.

Internal consistency analysis has been performed for all latent variables. The results are summarised in Chapter 6 and detailed analysis is included in Appendix L.

According to Sluti (1992), reliability is also related to the source of the data i.e. who answered the survey. The current survey was aimed at Quality Mangers, Operations Managers and General Managers for it is managers in these roles that should be most familiar with the implementation and outcomes of operational initiatives such as the implementation of quality practices. Section 1 of the questionnaire requested that the respondent states his / her capacity in the organisation. The responses and analysis are included in Chapter 6 with the details in Appendix I. Specific attention has been paid to the "Other" category to gauge the appropriateness of the respondents stated capacity i.e. when they did not identify themselves as either Quality Manager, Operations Manager or General Manager.

5.10.6 CRITERION VALIDITY

According to Flynn et al. (1994), criterion-related validity is a measure of how well scales representing the various quality management practices are related to measures of quality performance. To establish the criterion-related validity of the various constructs, the practice variables have been correlated with the performance variables. The results are included in Chapter 6.

This method was also used by Saraph et al (1989:824) where they found that "the multiple correlation coefficient between the eight measures of quality management and the perceived quality performance measure offered strong evidence of criterion-related validity".

Kerlinger (1986), as cited in Dow (1999:6), suggests that "the single greatest difficulty with criterion-related validation is (obtaining) the criterion. An ideal test of criterion-related validity for the quality practice instruments would be a measure of product quality; yet it is that very relationship that we are questioning."

5.11 DATA ANALYSIS / HYPOTHESIS TESTING

The fundamental aim of this research is to determine the impact of quality practices on operational and business performance in the South African contact centre industry. As established in previous chapters, this aim will be achieved by developing a quality practice / performance path model

that represents the series of hypotheses to be tested. The significance, strength and direction of the relationships represented in the model must be tested via appropriate analysis methods.

The hypotheses are derived from the research questions as detailed in Chapter 4. Table 5-6 provides details on the analysis methodology utilised in answering the research questions.

Table 5-6: Analysis Method per Research Question

No	Research Question	Analysis Method
1	To what extent are quality practices deployed in the South African Contact Centre Industry?	Descriptive Statistics & Significance Tests
2	Are quality management practices deployed in unison or as individual practices?	Bivariate Correlations
3	How does Leadership Quality Practices influence the deployment of Core Quality Practices?	Linear Regression & Path Analysis
4	How do Quality Practices impact on Quality Performance?	Linear Regression & Path Analysis
5	How do Quality Practices impact on Quality System Performance?	Linear Regression & Path Analysis
6	How do Quality Practices impact on Business Performance?	Linear Regression & Path Analysis
7	Is there synergistic value in the deployment of Quality Practices?	Linear Regression & Path Analysis
8	How do contingency factors moderate the relationship between Quality Practices and Performance?	Partial Correlations

5.11.1 PATH ANALYSIS

Path Analysis will be utilised to answer **Research Questions 3 to 7.** These questions address the influence of leadership on the implementation of quality practices and the impact of quality practices on quality performance, quality system performance and business performance.

According to Anderson (1995:646), "path analysis is a multivariate analytical methodology for empirically examining sets of relationships represented in the form of linear causal models. Mathematically, path analysis decomposes the empirical correlations or covariances among the measured variables to estimate the path coefficients in the path diagram."

Furthermore, Anderson (1995:649) states that, "one advantage of path analysis over conventional regression analysis is the ability to extend the single-multiple-regression-equation treatment to a network of equations involving more than one equation". He adds that "the estimation of path coefficients also makes it possible to decompose the observed empirical correlation or covariance between any two variables into three components: Direct (D), Indirect (N), and Unexplained (U) effects. The unexplained effect, therefore, can serve as an indication of how well a proposed path

diagram is supported empirically and how descriptive the proposed theory is of the observed phenomenon of interest."

The unexplained effect is calculated as follows:

$$\mathbf{U_{ji} = r_{ji} - (D_{ji} + N_{ji})}$$

Where:

r_{ji} = empirical correlation between variables i and j;

U_{ji} = portion of the empirical correlation between variables i and j not accounted for by the sum of the direct and indirect effects of i on j;

D_{ji} = direct effect of variable i on variable j, denoted by the value of the path coefficient Pji;

N_{ji} = total indirect effect of variable i on variable j.

According to Flynn (1995:675), "There are no hard and fast rules for determining the magnitude of acceptable measurement error before concluding that the model specification is incomplete or inadequate; arbitrary decision rules, such as 'differences greater than 0.10 suggest the need for model revision' are often applied".

5.11.2 AN EARLY VIEW OF THE PRACTICE / PERFORMANCE RELATIONSHIP

Prior to testing the individual hypotheses, an early view of the quality practices / performance relationships was established.

This was first accomplished by correlating the practice variables with the performance variables while checking for relationship significance.

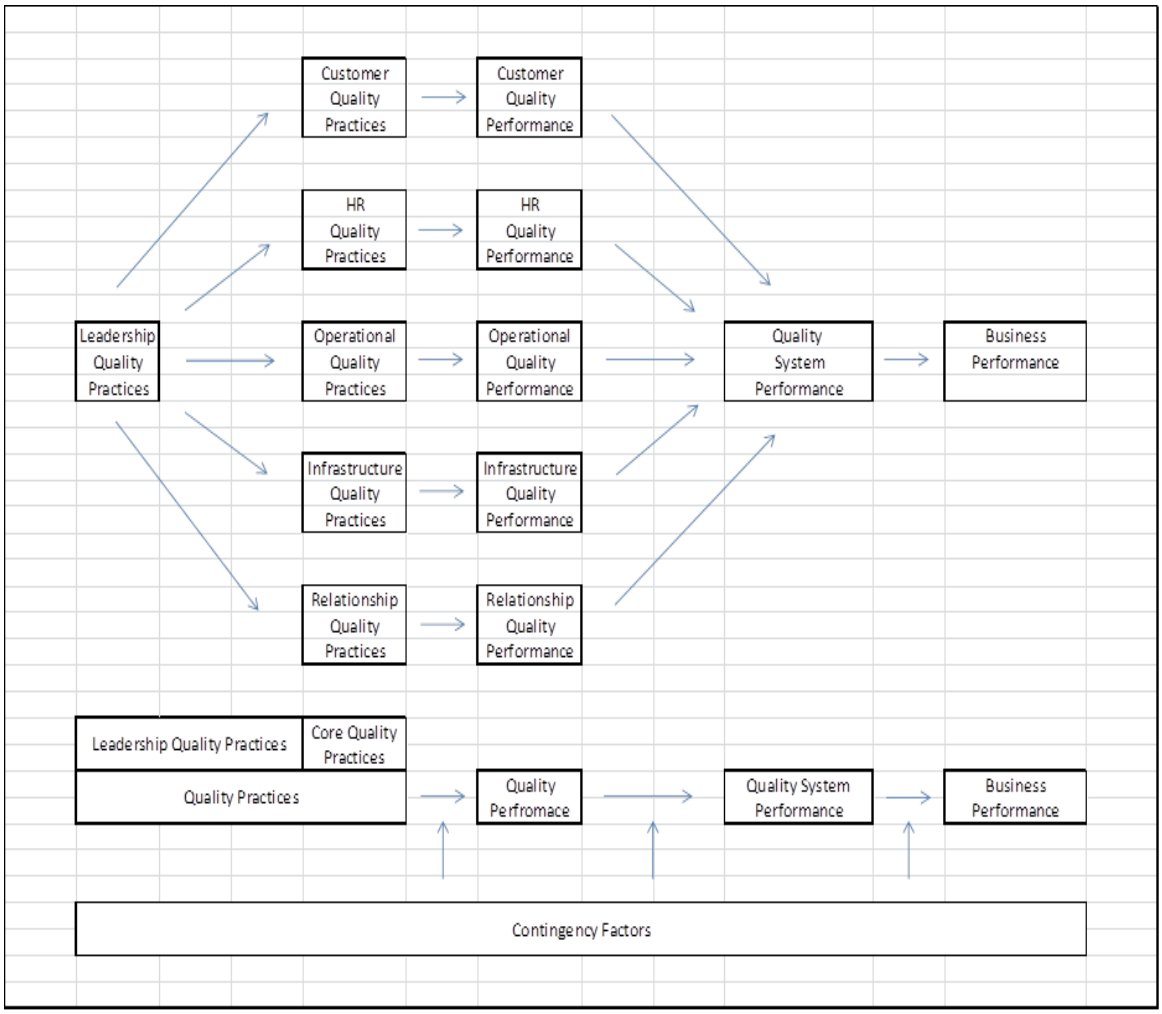
An alternate view of the practice / performance relationship was established by separating the sample into groups with high usage of quality practices and relative lower usage of such practices. This task was accomplished via the creation of "Dummy Variables" for the groups. NPar tests were then conducted between the groups and the performance variables to check for significance of relationships.

The results of the tests are included in Chapter 6.

5.11.3 TESTING HYPOTHESIS 1

The Quality Practice / Performance model developed in Chapter 4 is reproduced here for convenient reference before the details on hypotheses testing.

Quality Practice / Performance Model (Reproduction of Fig 4-1)



Hypothesis 1 is based on Research Question 1 i.e.

"To what extent are quality practices deployed in the South African Contact Centre Industry?"

and reads as follows:

Hypothesis 1 (H1): The South African Contact Centre Industry deploys quality management practices

The hypothesis was tested via descriptive statistics and significance testing. Descriptive statistics focused on the mean values of all quality practice statements while Kruskal Wallis Tests (Field, 2015) were employed to determine the significance of differences in the way various population groupings implement quality practices. This was done in accordance with the population profile criteria. i.e. Province, Size, Service Type and Market Served.

5.11.4 TESTING HYPOTHESIS 2

Hypothesis 2 is based on Research Question 2, i.e.

Are quality management practices deployed in unison or as individual practices?

and reads as follows:

> ***Hypothesis 2 (H2): The South African Contact Centre Industry deploys quality management practices in unison.***

This hypothesis was tested via bivariate correlations of the quality practice variables. Significance of the correlations was also considered.

5.11.5 TESTING HYPOTHESIS 3

Hypothesis 3 is based on Research Question 3, i.e.

How do Leadership Quality Practices influence the deployment of Core Quality Practices?

and reads as follows:

> ***Hypothesis 3 (H3): Leadership Quality Practices have a positive and significant impact on Core Quality Practices.***

The strength and direction of the relationship between Leadership Practices and each Core Quality Practice were determined by performing a Linear Regression with the Core Quality Practice as the dependent variable and Leadership Practices as the Independent variable.

The regression analysis for each pair includes the following (Field, 2015):

Step1. Checking that the conditions for regression are met by examining the following Plots:

- Histogram – Check for normal distribution.
- P-P Plot – Check that points fall on diagonal.
- Scatterplot – check for even distribution of points along each axis.

Figure 5-5 shows an example of the P lot series utilised in the pre-regression checks.

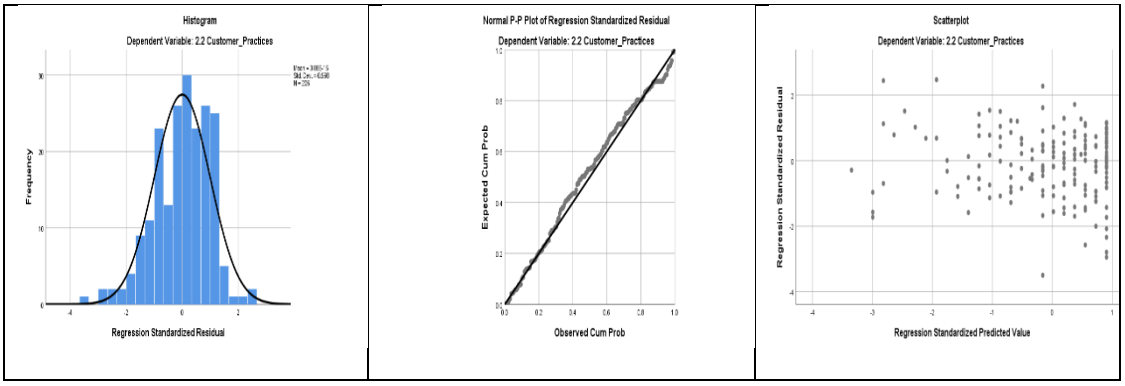


Figure 5-5: Example of Plot Series

Step 2. Check Collinearity Statistics

The Coefficients table generated in the regression analysis includes the collinearity statistics. Here Tolerance should be closer to 1 and VIF should be < 10 (Field, 2015). Table 5-7 provides an example of a Coefficients Table.

Table 5-7: Example Coefficients Table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.579	.160		9.874	.000	1.264	1.894		
	2.1 Leadership_Practices	.567	.038	.726	15.097	.000	.493	.641	1.000	1.000

a. Dependent Variable: 2.2 Customer_Practices

Step 3. Check ANOVA table for significance of the relationship between variables.

The relationship is considered significant if the significance value is < 0.05. Table 5-8 provides an example of an ANOVA Table.

Table 5-8: Example ANOVA Table

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	58.357	1	58.357	227.916	.000[b]
	Residual	52.233	204	.256		
	Total	110.590	205			

a. Dependent Variable: 2.2 Customer_Practices

b. Predictors: (Constant), 2.1 Leadership_Practices

Step 4. Check the Model Summary for the R-Square value which shows the % variance in the dependent variable explained by the independent variable. Table 5-9 provides an example of a Model Summary.

Table 5-9: Example Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.726[a]	.528	.525	.50601

a. Predictors: (Constant), 2.1 Leadership_Practices

b. Dependent Variable: 2.2 Customer_Practices

Step 5. Read the path coefficient from the Coefficients Table (5-7) in the "Standardised Beta Coefficient" column. This must be read in conjunction with the corresponding significance value.

A similar 5 step analysis was performed between Leadership Practices and all five Core Quality Practices. The full results for all variables included in the testing of Hypothesis 3 is included in Chapter 6 and the details regression analyses are include in Appendix M.

Given the single direct paths between Leadership Practices and the Core Quality Practices, the Path Analysis procedure that produces the "Unexplained Effect", merely compares the implied bivariate correlations between the pairs to the path coefficients.

5.11.6 TESTING HYPOTHESIS 4

Hypothesis 4 is based on Research Question 4 i.e.

How do Quality Practices impact on Quality Performance?

and reads as follows:

Hypothesis 4 (H4): Quality Practices have a positive and significant impact on Quality Performance.

A regression analysis similar to that performed for Hypothesis 3 was performed between each Core Quality Practice and the corresponding Quality Performance variable.

The indirect effect of Leadership Practices on Quality Performance variables was calculated by multiplying the direct coefficients between (*Leadership Practices and the Core Quality Practice*) and (*Core Quality Practice and Quality Performance*).

The results of the regression analyses and calculation of the indirect effects, together with the implied correlations (as generated in during the Criterion Validity checks) were used as inputs to calculate the unexplained effects. This calculation was performed via the Path Analysis equation explained in paragraph 5.11.1. i.e.

$$U_{ji} = r_{ji} - (D_{ji} + N_{ji})$$

where:

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

An example of the decomposition of path coefficients is shown in Table 5-10.

Table 5-10: Decomposition of Path Coefficients for Quality Performance Variables

Dependent Variable (j)	Independent Variable (i)	Direct Effect D_{ji}	Indirect Effect N_{ji}	Total Effect $D_{ji} + N_{ji}$	Implied Correlation	Unexplained Effect U_{ji}
Customer Performance	Customer Practices	.792	0	.792	.767	-.025
	Leadership Practices	0	.726x.792 = .575	.575	.696	.121

The full results for all variables included in the testing of Hypothesis 4 is included in Chapter 6 and the details regression analyses are include in Appendix N.

5.11.7 TESTING HYPOTHESIS 5

Hypothesis 5 is based on Research Question 5 i.e.

How do Quality Practices impact on Quality System Performance?

and reads as follows:

> ***Hypothesis 5 (H5): Quality Practices have a positive and significant impact on Quality System Performance.***

A regression analysis similar to that performed for Hypothesis 3 was performed between Quality System Performance (dependent variable) and the 5 Quality Performance variables (independent variables).

The indirect effect of the Quality Practice variables on Quality System Performance was calculated by multiplying the direct coefficients between (*Leadership Practices, Core Quality Practices and Quality Performance variables*.)

The results of the regression analysis are included in Chapter 6 and the detailed regression analysis is included in Appendix O.

A table of results similar to Table 5-11 includes the decomposition of Path Coefficients for Quality System Performance Variable.

5.11.8 TESTING HYPOTHESIS 6

Hypothesis 6 is based on Research Question 6 i.e.

How do Quality Practices impact on Business Performance?

and reads as follows:

> ***Hypothesis 6 (H6): Quality Practices have a positive and significant impact on Business Performance.***

A regression analysis similar to that performed for Hypothesis 3 was performed between Business Performance (dependent variable) and Quality System Performance (independent variables).

The indirect effect of the Quality Practice variables on Business Performance was calculated by multiplying the direct coefficients between (*Leadership Practices, Core Quality Practices, Quality Performance and Quality System Performance variables*). The results of the regression analysis are included in Chapter 6 and the detailed regression analysis is included in Appendix P.

A table of results similar to Table 5-11 includes the decomposition of Path Coefficients for the Business Performance Variable.

5.11.9 TESTING HYPOTHESIS 7

Hypothesis 7 is based on Research Question 7 i.e.

Is there synergistic value in the deployment of Quality Practices?

and reads as follows:

Hypothesis 7 (H7): Synergistic value exists in the deployment of Quality Practices.

In order to test this hypothesis, an alternate model was generated and compared to the original model conceived in Fig 4-1. This alternate model is depicted in Fig 5-6.

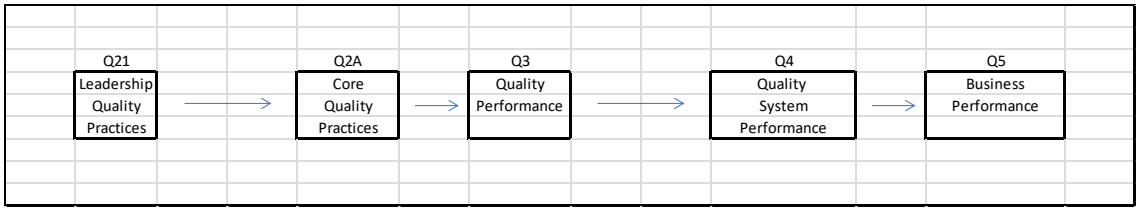


Figure 5-6: An Alternate Quality Practice / Performance model

In this model higher order variables are utilised to represent a consolidated quality practice variable and a consolidated quality performance variable.

The measure of "model fit" i.e. the value of the Unexplained effect (U) (Anderson, 1995) has been calculated for this alternate model and then compared to the "U" already calculated under Hypothesis 6 tests. A better model fit of the alternate model indicates that synergistic value does exists in the deployment of quality practices (Dow et al, 1999). The results are included in Chapter 6 and the detailed regression analysis is included in Appendix Q.

This test is akin to tests performed by Dow et al (1999) where Structural Equation Modelling (SEM) was used to compare a "Best Practice Model", where quality outcomes were represented by a single higher order quality practice construct to a "Baseline Model" where quality outcomes were represented by a collection of separate constructs. The "Best Practice Model" implied that

there is synergistic value in the deployment of quality practices while the "Baseline Model" implied that quality practices had independent impacts on quality outcomes.

Figures 5-7 and 5-8 show the current research's equivalent to the "Best Practice" and "Baseline" Models.

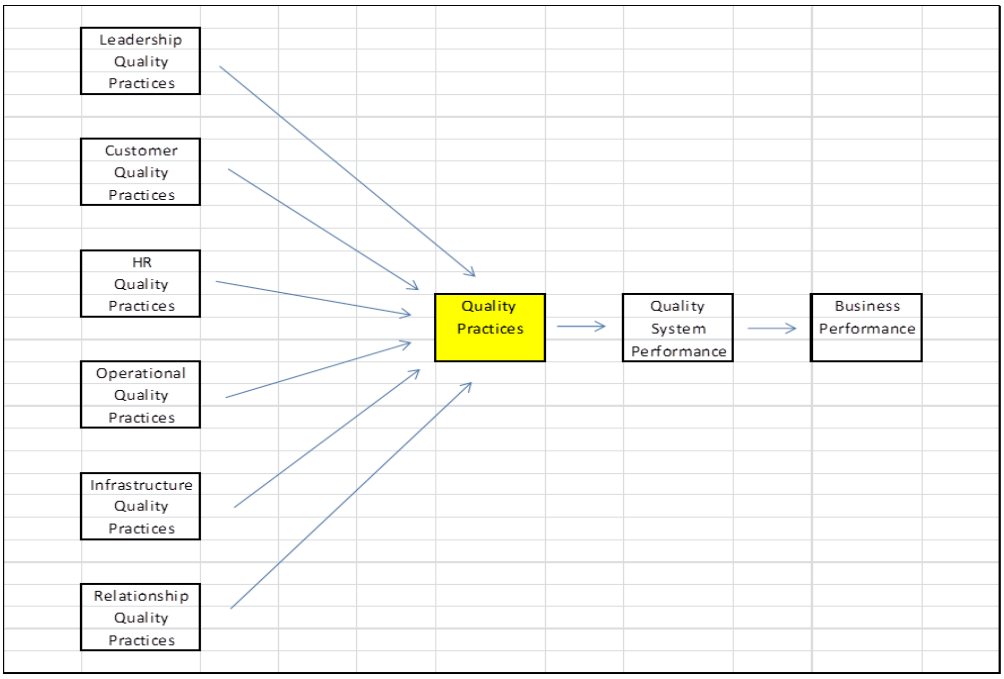


Figure 5-7: Best Practice Model Equivalent

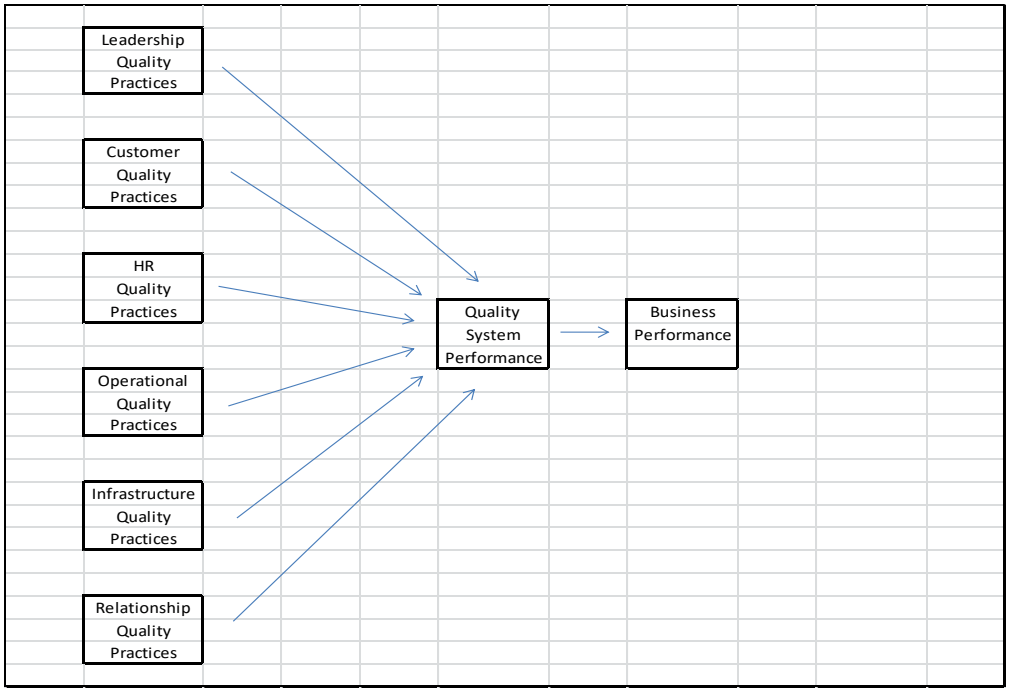


Figure 5-8: Baseline Model Equivalent

5.11.10 TESTING HYPOTHESIS 8

Hypothesis 8 is based on Research Question 8 i.e.

How do contingency factors moderate the relationship between Quality Practices and Performance?

and reads as follows:

> ***Hypothesis 8 (H8): Contingency factors have a moderating impact on the relationship between Quality Practices and Performance.***

This hypothesis was tested via Partial Correlations. Similar to analysis conducted by Powell (1995), zero-order and partial correlations were analysed to assess the impact of contingency factors on the practice-performance relationships.

The moderating impact of the contingency factors on the following relationships was assessed:

1. The relationship between Quality Practices and Quality Performance.

Here the 3rd order 'Quality Practices' variable was correlated with the second order 'Quality Performance' variable.

2. The Relationship between Quality Practices and Quality System Performance.

3. The relationship between Quality Practices and Business Performance.

For each relationship, the zero-order correlations were compared to the partial correlations calculated by controlling for each of the contingency variables.

Table 5-11 includes the contingency variables that were considered -

Table 5-11: Contingency Variables

Variable Number	Variable Name and Elaboration
1	Management Knowledge (Extent of knowledge of quality practices and standards)
2	Industry Rivalry (Extent of competition in the industry)
3	External Demand for Quality (Requirements from Clients, Industry Bodies, Government)
4	Culture (Degree of openness and flexibility in an organisation)
5	Organisational Structure (The number of reporting levels in an organisation)
6	Environmental Uncertainty (degree of volatility in the business environment)

Partial correlations were also performed by controlling for certain demographic variables. These variables are included in Table 5-12.

Table 5-12: Demographic Variables

Variable Number	Variable Name and Elaboration
1	Province (Gauteng / Western Cape / KZN / Other)
2	Service Type (Captive / Outsourced / Both)
3	Markets Served (Domestic / International / Both)
4	Ownership (Mostly SA Owned / Mostly Foreign Owned)
5	Size (Number of Seats) (0 - 20, 21 - 70, 71 – 200, 200 +)
6	Age (Years) (0 – 2, 2 – 5, 5+)

Significance values of Zero-order and Partial correlations are also provided.

5.12 ETHICAL CONSIDERATIONS

The research has pledged compliance with UKZN's ethical standards and policies.

Consent from respondents was obtained via a mandatory field in the landing page of the online survey. It was not possible to enter the survey without consenting to participation.

Respondents were required to agree to the following statement:

"I hereby confirm that I understand the nature of the research project, and I consent to my participation. I understand that I am at liberty to withdraw from the project at any time, should I so desire."

Additionally, the following paragraph on the survey landing page assured the respondent of confidentiality and anonymity, whilst also providing contact details for the Key Researcher.

"Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time. Confidentiality and anonymity of records is assured in accordance with UKZN's Ethical Guidelines. If you have any questions or concerns about completing the questionnaire or about participating in this project, you may contact the Key Researcher, Mr Rajesh Ramchunder on 0319428888 or qualitysurvey@researchlabs.co.za "

A guarantee of data privacy was also provided in the email sent out by the Trade Association:

DATA PRIVACY GUARANTEE

"The Privacy of your data is guaranteed by CCMG and UKZN. Information provided will only be used to generate the research results" – S. Haigh, MD of CCMG.

This guarantee is supported by the following statement in paragraph 3.2 of the "Code of Conduct for Research" included in the UKZN Research Policy V (2007).

"In no way do the requirements for data availability override the right to confidentiality and privacy of individuals or organisations who are the subjects of research."

5.13 LIMITATIONS OF THE RESEARCH DESIGN

The following limitations of the research should be noted:

- Having employed a survey method, this research is subject to a fundamental limitation inherent in survey designs i.e. questions may be subject to the respondent's interpretation without a researcher available (as in an interview) to provide clarity.
- The study employs a cross-sectional sample at a point in time. While causal relationships may be inferred, they cannot be claimed to persist in time. A longitudinal design would address this limitation to some extent.
- While perceptual data is acceptable in this type of research, it invites considerable subjectivity based on the respondent's perceptions. This may be further influenced by respondents wanting to project a positive image of themselves and their organisations.

5.14 CHAPTER SUMMARY

This chapter on research methodology began with a recap of the research questions and objectives in an effort to maintain focus and reaffirm the platform for elaborating on the research design. The design covered aspects elaborated on in previous chapters from understanding the research environment, stating the problem, objectives and questions to the development of the model representing hypotheses and the resultant measurement instrument.

Details of the population (and profile) preceded the sampling method. This was followed by the description of the measurement instrument implemented as an online survey. Data collection channels and data preparation techniques were discussed in detail. These include integrity, representivity/bias, normality and multicollinearity checks. Reliability analysis using Cronbach's alpha was described together with the three types of validity checks, being *content, criterion and construct* validity. Finally, methods for analysing the data to answer the eight research questions were discussed. These included descriptive statistics, correlation analysis and path analysis. The chapter was concluded by considering ethical issues and limitations of the research design.

The next chapter will focus on the presentation of the results.

CHAPTER 6

PRESENTATION OF RESULTS

6.1 INTRODUCTION

This chapter covers the presentation of the study results, including the demographic profile of the respondents, descriptive statistics for all variables and data pre-checks for normality, bias and collinearity. This is followed by a presentation of the results of the hypotheses testing. A data integrity analysis is included as a starting point.

6.2 DATA INTEGRITY CHECKING

While the questionnaire design did not allow for missing data, all N/A responses were transformed to missing answers in order to maintain the integrity of the calculated latent variables. Table 6-1 provides an analysis of the induced 'missing' data for all latent variables.

Table 6-1: Missing Data Analysis

Variable	Total Missing Data	No of Statements	No of Respondents	Total Data Expected	Missing Data Percentage
Leadership Practices	8	6	207	1242	1%
Customer Practices	159	13	207	2691	6%
HR Practices	44	19	207	3933	1%
Operational Practices	20	9	207	1863	1%
Infrastructure Practices	55	11	207	2277	2%
Relationship Practices	77	4	207	828	9%
Customer Performance	156	6	207	1242	13%
HR Performance	92	8	207	1656	6%
Operational Performance	65	6	207	1242	5%
Infrastructure Performance	18	3	207	621	3%
Relationship Performance	98	4	207	828	12%
Quality System Performance	24	5	207	1035	2%
Business Performance	93	5	207	1035	9%
Management Knowledge	19	3	207	621	3%
Industry Rivalry	29	3	207	621	5%
Demand for Compliance	18	3	207	621	3%
Culture	5	3	207	621	1%
Organisational Structure	2	1	207	207	1%
Environmental Uncertainty	10	2	207	414	2%
Average					**4%**

The highest percentages of missing data have been highlighted. The statements that measure these variables are not applicable to certain contact centres. The average data missing percentage across statements is 4%. The details of the missing data for each questionnaire statement are included in Appendix H (Variable Profiles).

6.3 DEMOGRAPHIC DATA

This section presents the frequency counts and percentages of the demographic data that describe the profile of the respondents.

6.3.1 CAPACITY OF PERSONS COMPLETING THE SURVEY

Figure 6-1 provides a visual representation of the capacity of persons that responded to the survey while Table 6-2 includes the corresponding frequency counts and percentages.

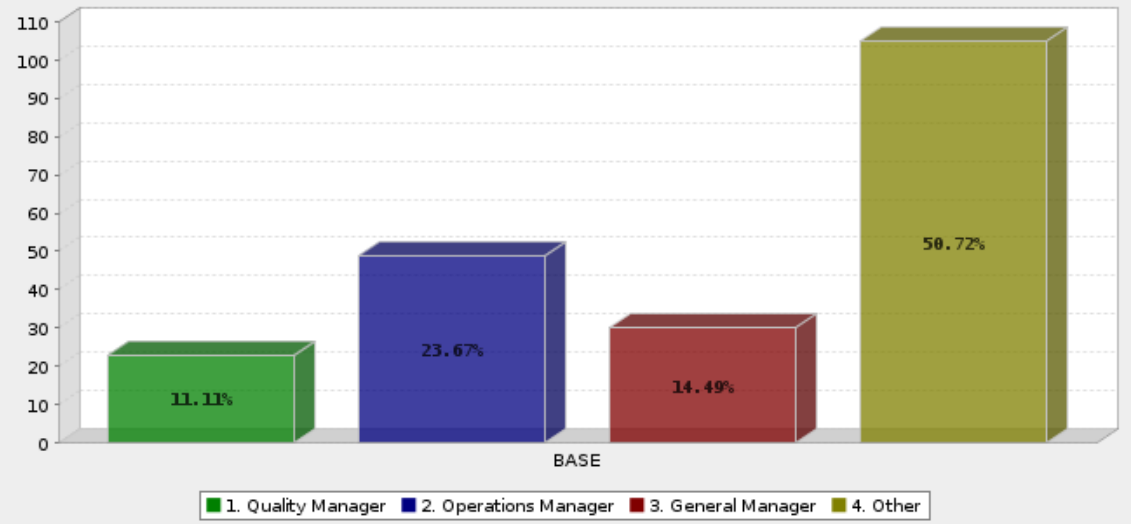


Figure 6-1: Capacity of Person who completed the survey

Table 6-2: Capacity of Person who completed the survey

	Answer	Count	Percent
1.	Quality Manager	23	11.11%
2.	Operations Manager	49	23.67%
3.	General Manager	30	14.49%
4.	Other	105	50.72%
	Total	207	100%

The survey was aimed at Quality Mangers, Operations Managers and General Managers for it is managers in these roles who should be most familiar with the implementation and outcomes of operational initiatives such as quality management practices.

The high percentage (50.72%) of respondents that selected category 4 (i.e. “Other”) warrants a deeper analysis. Appendix I shows the details of respondents who selected category 4 in table 6-2. 93 of the 105 respondents in this category (i.e. 89%) occupy a relatively senior position in their organisation which would afford them insight into operational initiatives such as quality programmes and the impact thereof. Adding these respondents to the respondents who selected categories 1 to 3, determines that approximately 94% of respondents are well suited to this study. The remaining 6% that provide insight from lower levels in their organisations are also considered valuable. Flynn et al (1994) considered inputs from varying organisational levels to be a strength.

6.3.2 PROVINCE

Figure 6-2 provides a visual representation of the province of the respondents while Table 6-3 includes the corresponding frequency counts and percentages.

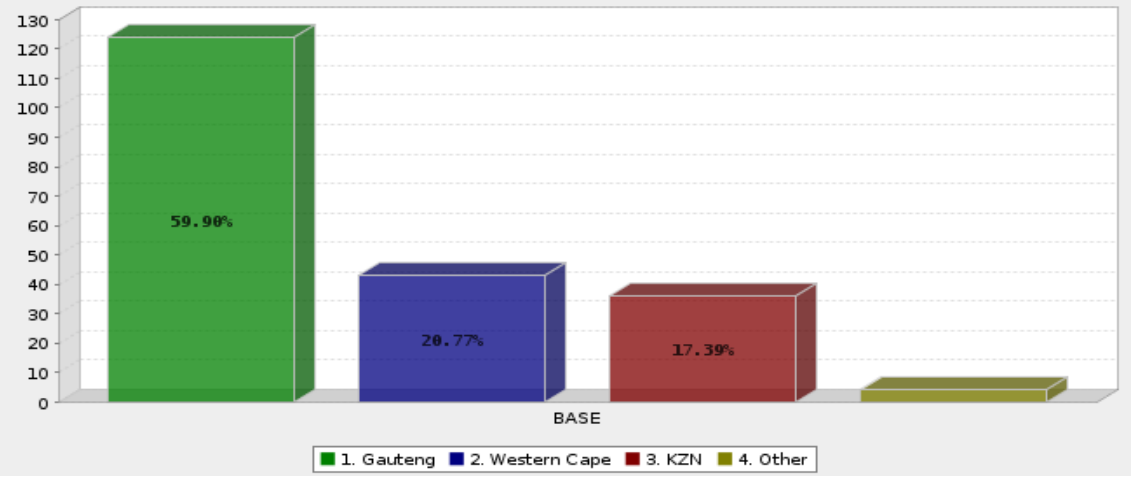


Figure 6-2: Province of Respondents

Table 6-3: Province of Respondents

	Answer	Count	Percent
1.	Gauteng	124	59.90%
2.	Western Cape	43	20.77%
3.	KZN	36	17.39%
4.	Other	4	1.93%
	Total	207	100%

As shown in Table 6-4, the distribution of respondents across provinces compares well with that of the population. The highest variance is evident in Gauteng where respondents’ representation was 6% lower than the population. This deficit was mostly taken up by KZN where the representation of respondents was 4% higher than that of the population. The impact of this variance will be tested in the section on data bias.

Table 6-4: Province of Respondents vs. Population

Province		WC	GAU	KZN	Other
Population	Number (%)	410 (20%)	1352 (66%)	266 (13%)	20 (1%)
Responses	Number (%)	43(21%)	124(60%)	36(17%)	4(2%)
Variance	(%)	+1%	-6%	+4%	+1%

6.3.3 SERVICE TYPE

Figure 6-3 provides a visual representation of the respondents' Service Type while Table 6-5 includes the corresponding frequency counts and percentages.

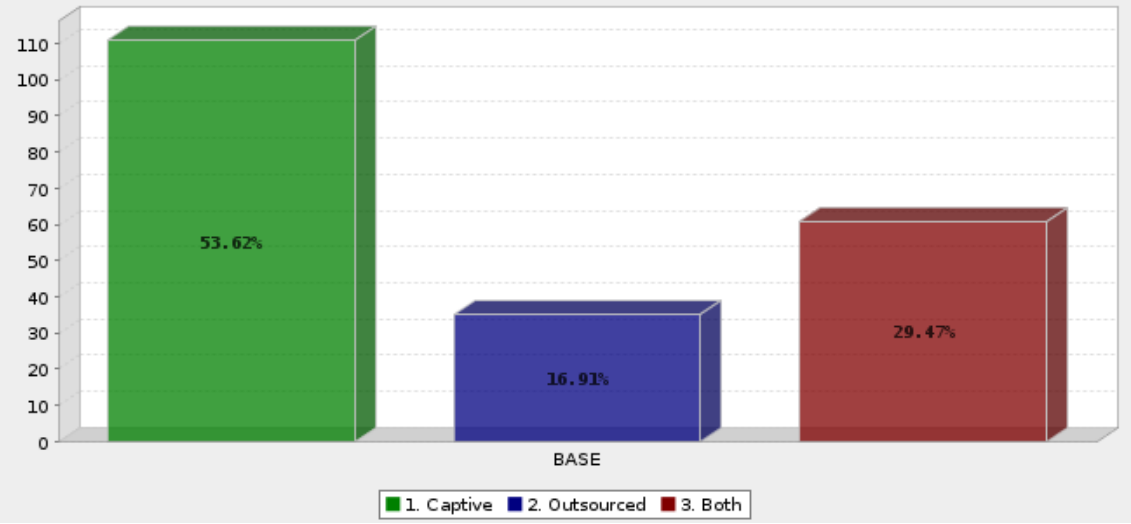


Figure 6-3: Service Type of Respondents

Table 6-5: Service Type of Respondents

	Answer	Count	Percent
1.	Captive	111	53.62%
2.	Outsourced	35	16.91%
3.	Both	61	29.47%
	Total	207	100%

While population statistics are not available for centres that operate as both Captive and Outsourced, it is reasonable to distribute the 29.47% of responded who identified as "both" equally across categories 1 and 2 (i.e. Captive and Outsourced respectively). The result of the adjustment and the comparison to the population is shown in Table 6-6. Captive respondents account for 13% more than that of the population. The impact of this variance will be tested in the section on data bias.

Table 6-6: Service Type of Respondents vs. Population

Service Type		Captive	Outsourced	Both	
Population	Number (%)	1127 (55%)	922 (45%)		
Responses	Number (%)	111(54%)	35(17%)	61(29%)	
Adjusted	(%)	68%	32%		
Variance	(%)	+13%	- 13%		

6.3.4 MARKETS SERVED

Figure 6-4 provides a visual representation of the Markets Served by the respondents while Table 6-7 includes the corresponding frequency counts and percentages.

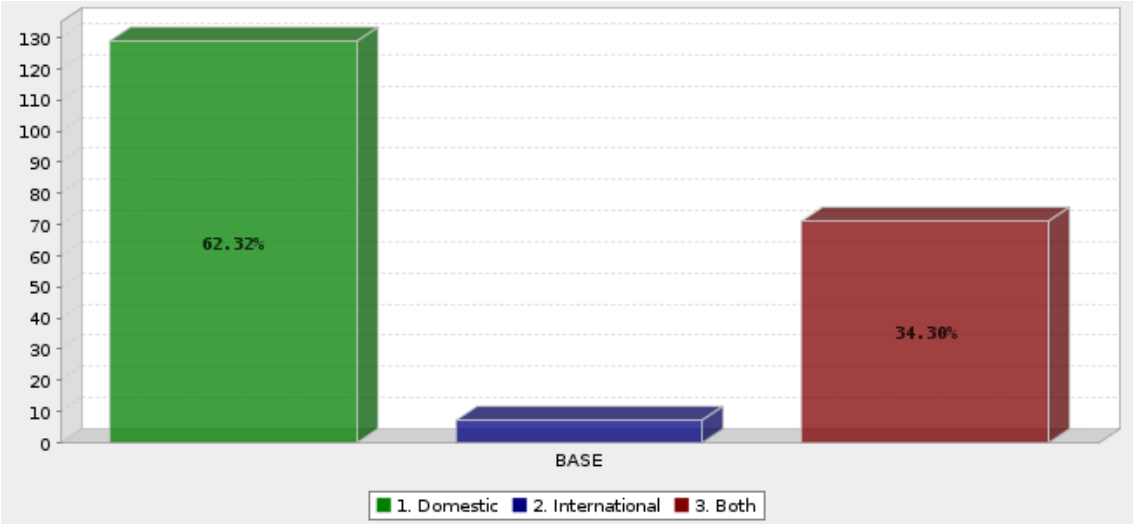


Figure 6-4: Markets Served by Respondents

Table 6-7: Markets Served by Respondents

	Answer	Count	Percent
1.	Domestic	129	62.32%
2.	International	7	3.38%
3.	Both	71	34.30%
	Total	207	100%

Due to the unavailability of population statistics for centres that service both Domestic and International markets, the 34% who responded as 'both' were again equally distributed across categories 1 and 2 (i.e. Domestic and International respectively). The result of the adjustment and the comparison to the population is shown in Table 6-8. The number of respondents serving domestic markets is 6% lower than that of the population. The impact of this variance will be tested in the section on data bias.

Table 6-8: Markets Served by Respondents vs. Population

Markets Served		Domestic	International	Both	
Population	Number (%)	190000 (85%)	32500 (15%)		
Responses	(%)	62%	4%	34%	
Adjusted	(%)	79%	21%		
Variance	(%)	-6%	+6%		

Given that the population is measured in number of seats, and the sample is measured in number of contact centres, there is insufficient data to measure the representativeness of the population from this point of view. The impact of markets served will, however, be tested in the section on data bias.

Table 6-9 provides a cross tabulation between Markets Served and Call Centre Size. The results show that the sample consists of a fairly balanced distribution of contact centres sizes serving either domestic, international or both markets. The Chi-squared result in Table 6-10 shows that the difference in contact centre sizes serving these markets are not significant.

Table 6-9: Markets Served by Respondents vs. Contact Centre Size

1.7 Markets Served * 1.11 Call Centre Size Cross tabulation

			1.11 Call Centre Size				
			0 - 20	21 - 70	71 - 200	200 +	Total
1.7 Markets Served	Domestic	Count	37	41	24	27	129
		% within 1.7 Markets Served	28.7%	31.8%	18.6%	20.9%	100.0%
		% within 1.11 Call Centre Size	60.7%	59.4%	64.9%	67.5%	62.3%
	International	Count	1	4	0	2	7
		% within 1.7 Markets Served	14.3%	57.1%	0.0%	28.6%	100.0%
		% within 1.11 Call Centre Size	1.6%	5.8%	0.0%	5.0%	3.4%
	Both	Count	23	24	13	11	71
		% within 1.7 Markets Served	32.4%	33.8%	18.3%	15.5%	100.0%
		% within 1.11 Call Centre Size	37.7%	34.8%	35.1%	27.5%	34.3%
Total		Count	61	69	37	40	207
		% within 1.7 Markets Served	29.5%	33.3%	17.9%	19.3%	100.0%
		% within 1.11 Call Centre Size	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6-10: Chi-Squared Test for Market Served vs. Contact Centre Size

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.388[a]	6	.624
Likelihood Ratio	5.546	6	.476
Linear-by-Linear Association	.818	1	.366
N of Valid Cases	207		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.25.

6.3.5 OWNERSHIP

Figure 6-5 provides a visual representation of the ownership of the responding contact centres while Table 6-11 includes the corresponding frequency counts and percentages.

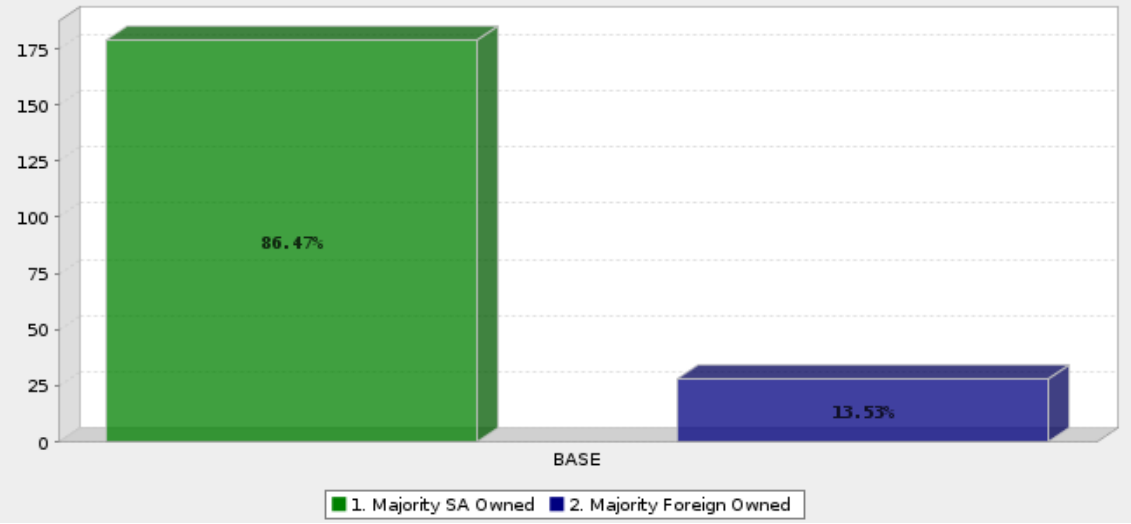


Figure 6-5: Ownership of Respondents

Table 6-11: Ownership of Respondents

	Answer	Count	Percent
1.	Majority SA Owned	179	86.47%
2.	Majority Foreign Owned	28	13.53%
	Total	207	100%

Table 6-11 shows that approximately 86% of the respondents are majority SA-owned while approximately 14% are majority foreign owned. Table 6-12 shows a cross tabulation of this result against markets served and the corresponding Chi-squared test in Table 6-13.

Table 6-12: Markets Served by Respondents vs. Ownership

1.7 Markets Served * 1.8 Ownership Cross tabulation

			1.8 Ownership		
			Majority SA Owned	Majority Foreign Owned	Total
1.7 Markets Served	Domestic	Count	118	11	129
		% within 1.7 Markets Served	91.5%	8.5%	100.0%
		% within 1.8 Ownership	65.9%	39.3%	62.3%
	International	Count	5	2	7
		% within 1.7 Markets Served	71.4%	28.6%	100.0%
		% within 1.8 Ownership	2.8%	7.1%	3.4%
	Both	Count	56	15	71
		% within 1.7 Markets Served	78.9%	21.1%	100.0%
		% within 1.8 Ownership	31.3%	53.6%	34.3%
Total		Count	179	28	207
		% within 1.7 Markets Served	86.5%	13.5%	100.0%
		% within 1.8 Ownership	100.0%	100.0%	100.0%

Table 6-13: Chi-Squared Test for Market Served vs. Ownership

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.617[a]	2	.022
Likelihood Ratio	7.266	2	.026
Linear-by-Linear Association	6.497	1	.011
N of Valid Cases	207		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .95.

While the significant difference is expected i.e. SA companies serve mostly domestic markets and foreign companies based in SA serve mostly foreign markets, it is interesting to note the balance of SA companies competing in foreign markets (approx. 34%) compared to foreign companies competing purely in the SA markets (approx. 39%). This observation entrenches the important of service quality differentiation – a key competitive driver underpinning this study.

6.3.6 SERVICES BREAKDOWN

Figure 6-6 provides a visual representation of the service breakdown of the responding contact centres while Table 6-14 includes the corresponding frequency counts and percentages.

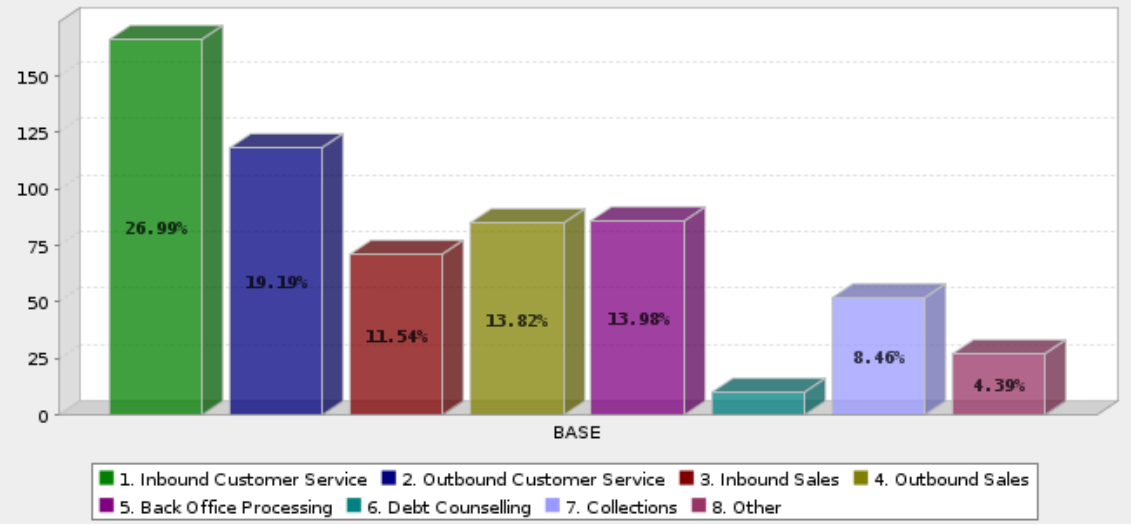


Figure 6-6: Service Breakdown of Respondents

Table 6-14: Service Breakdown of Respondents

	Answer	Count	Percent
1.	Inbound Customer Service	166	26.99%
2.	Outbound Customer Service	118	19.19%
3.	Inbound Sales	71	11.54%
4.	Outbound Sales	85	13.82%
5.	Back Office Processing	86	13.98%
6.	Debt Counselling	10	1.63%
7.	Collections	52	8.46%
8.	Other	27	4.39%
	Total	615	100%

Here the counts are higher than the sample number. This is due to the fact that respondents could choose more than one type of service. Many contact centres are diversified in terms of their service provision.

The results show a dominance of Customer Service centres (46%) followed by Sales at 26 %. Within these categories, Inbound is more prevalent in Customer Service while Inbound and Outbound are well balanced in Sales-based contact centres.

6.3.7 SECTOR SERVED

Figure 6-7 provides a visual representation of the sectors served by the responding contact centres while Table 6-15 includes the corresponding frequency counts and percentages.

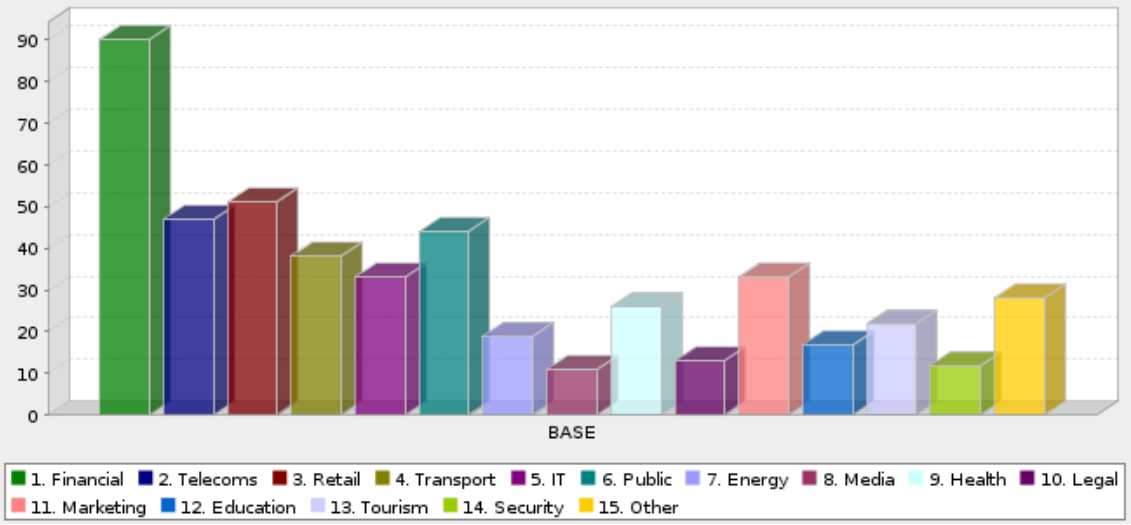


Figure 6-7: Sectors served by Respondents

Table 6-15: Sectors served by Respondents

	Answer	Count	Percent
1.	Financial	90	18.60%
2.	Telecoms	47	9.71%
3.	Retail	51	10.54%
4.	Transport	38	7.85%
5.	IT	33	6.82%
6.	Public	44	9.09%
7.	Energy	19	3.93%
8.	Media	11	2.27%
9.	Health	26	5.37%
10.	Legal	13	2.69%
11.	Marketing	33	6.82%
12.	Education	17	3.51%
13.	Tourism	22	4.55%
14.	Security	12	2.48%
15.	Other	28	5.79%
	Total	484	100%

This demographic also includes counts that are higher than the sample number due to respondents servicing more than one sector. The industry sector with the highest count is Financial Services, followed by Retail, Telecoms and Public Services respectively. This result closely resembles that found in the BPeSA Key Indicators Report (2016).

6.3.8 CONTACT CENTRE SIZE (SEATS)

Figure 6-8 provides a visual representation of the size of the responding contact centres while Table 6-16 includes the corresponding frequency counts and percentages.

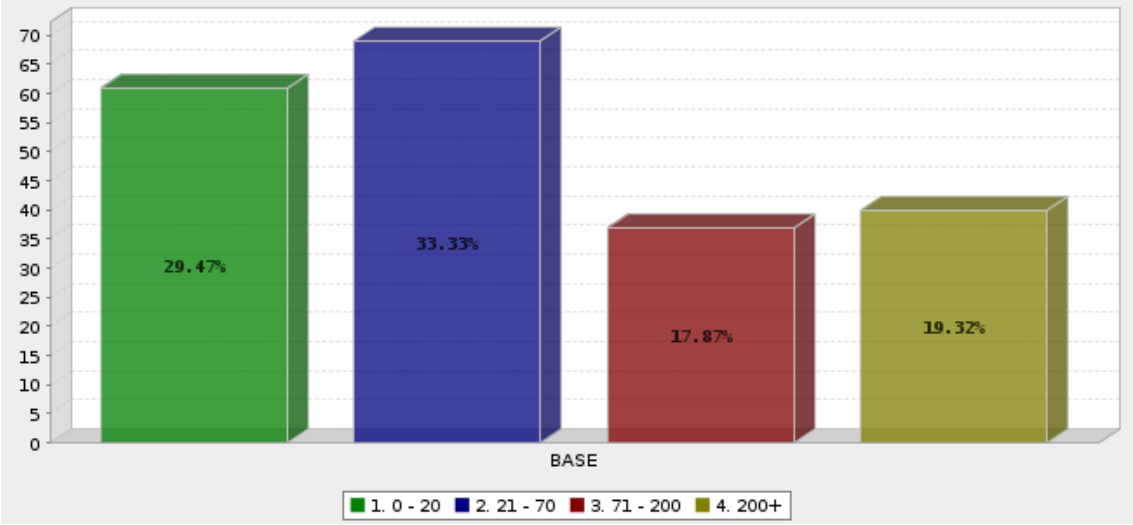


Figure 6-8: Size of Responding Contact Centres

Table 6-16: Size of Responding Contact Centres

	Answer	Count	Percent
1.	0 - 20	61	29.47%
2.	21 - 70	69	33.33%
3.	71 - 200	37	17.87%
4.	200+	40	19.32%
	Total	207	100%

The frequency count shows that the highest percentage of respondents fall within the 21-70 seats category while the 71-200 seats category has the lowest count.

The profile of the respondents is compared to the population in table 6-17. The variance across categories is within 8%.

Table 6-17: Size of Responding Contact Centre vs. Population

Size		**0-20**	**21-70**	**71-200**	**200+**
Population	Number (%)	451 (22%)	635 (31%)	533 (26%)	430 (21%)
Responses	Number (%)	61(30%)	69(33%)	37(18%)	40(19%)
Variance	(%)	+8%	+2%	-8%	-2%

The Chi-squared test result in Table 6-18 indicates that the spread of respondents is significantly different from an even spread. The impact of contact centre size is tested in the data bias section.

Table 6-18: Chi-squared Test for Size of Responding Contact Centres

	1.11 Call Centre Size
Chi-Square	14.275[a]
df	3
Asymp. Sig.	.003

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 51.8.

6.3.9 AGE OF CONTACT CENTRE (YEARS)

Figure 6-9 provides a visual representation of the age of the responding contact centres while Table 6-19 includes the corresponding frequency counts and percentages.

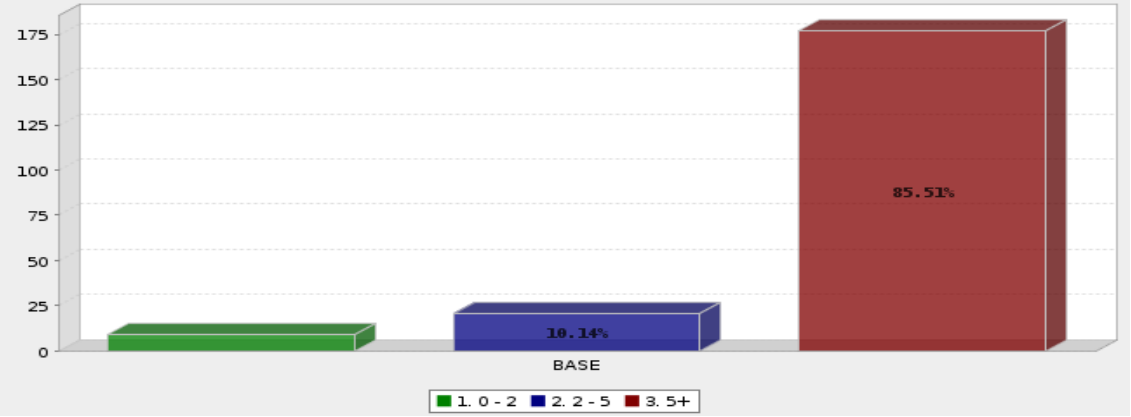


Figure 6-9: Age of Responding Contact Centres

Table 6-19: Age of Responding Contact Centres

	Answer	Count	Percent
1.	0 - 2	9	4.35%
2.	2 - 5	21	10.14%
3.	5+	177	85.51%
	Total	207	100%

The age analysis shows that over 95% of the responding centres are over two years old with over 85% being older than five years. This result bodes well for the study, as the implementation of quality management practices is more likely to occur in relatively mature contact centres.

6.4 DESCRIPTIVE STATISTICS

In this section the 1st, 2nd and 3rd order latent variables, computed as per section 5.9.2, will be described within the following five major groups (in accordance with the Practice / Performance Model presented in Fig 4-1):

- Quality Practices
- Quality Performance
- Quality System Performance
- Business Performance
- Contingency Factors

Descriptive statistics for each group include central tendency (Mean), dispersion (Standard Deviation), symmetry (Skew) and pointedness (Kurtosis). The group level statistics will be presented in this chapter while the descriptive statistics for each latent variable are included in the "Variable Profiles" that constitutes Appendix H. The profiles also include the following for each latent variable:

- A graphical representation of frequency counts per questionnaire statement
- A table of mean scores per questionnaire statement
- A Histogram mapped against a normal distribution
- A Normal P-P Plot
- A One-Sample Kolmogorov-Smirnov Test

The Histogram, P-P Plot and Kolmogorov-Smirnov Test are produced / performed on a latent variable level and confirm deviations from normal distributions.

6.4.1 QUALITY PRACTICES

Quality Practices includes the 1st, 2nd and 3rd order latent variables included in Table 6-20.

Table 6-20: Quality Practice Variables

1st Order	Leadership Practices
1st Order	Customer Practices
1st Order	HR Practices
1st Order	Operational Practices
1st Order	Infrastructure Practices
1st Order	Relationship Practices
2nd Order	Core Quality Practices
3rd Order	Quality Practices

Table 6-21 includes the descriptive statistics for the Quality Practice latent variables.

Table 6-21: Quality Practice Descriptive Statistics

		2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
N	Valid	207	206	207	206	206	201	207	207
	Missing	0	1	0	1	1	6	0	0
Mean		4.1478	3.9336	4.1027	4.0803	3.9589	4.1671	4.0452	4.0629
Std. Deviation		.93867	.73448	.79451	.83946	.78220	.87466	.73144	.73722
Skewness		-1.294	-.706	-.833	-.953	-.718	-1.128	-1.016	-1.093
Std. Error of Skewness		.169	.169	.169	.169	.169	.172	.169	.169
Kurtosis		1.218	.435	.208	.731	.339	1.217	1.137	1.333
Std. Error of Kurtosis		.337	.337	.337	.337	.337	.341	.337	.337

Table 6-22 summarises the observations for this group of variables.

Table 6-22: Summary of Observations for Quality Practice variables

Measure	Values	Comment
Mean	Range : 3.93 to 4.17	High for all variables
Standard Deviation	Range : 0.73 to 0.93	Low relative to Means
Skew	Range : -1.29 to -0.71	Negative Skew
Kurtosis	Range : 0.21 to 1.33	Positive Skew
Histograms	Does not approximate normal curve	Non-Normal distribution for all variables
P-P Plots	Points off diagonals	Non-Normal distribution for all variables
Kolmogorov-Smirnov Test	Sig values range from .000 to .003	Non-Normal distribution for all variables

The following may be deduced from the observations in Table 6-22:

a. The high mean values for these variables indicate that respondents have reported that quality practices are implemented at their organisations.

b. The low values of standard deviation relative to the means indicate that there is a high degree of consistency in the responses.
c. The non-zero skew and kurtosis values indicate a departure from normal distribution varying from slight to moderate.
d. The histogram and P-P plot visually confirm a departure from normal distribution.
e. The significant result of the Kolmogorov-Smirnov Test further confirms a non-normal distribution.

6.4.2 QUALITY PERFORMANCE

Quality Performance includes the 1st and 2nd order latent variables included in Table 6-23.

Table 6-23: Quality Performance Variables

1st Order	Customer Performance
1st Order	HR Performance
1st Order	Operational Performance
1st Order	Infrastructure Performance
1st Order	Relationship Performance
2nd Order	Quality Performance

Table 6-24 includes the descriptive statistics for the Quality Performance latent variables.

Table 6-24: Quality Performance Descriptive Statistics

		3.1 Customer_Performance	3.2 HR_Performance	3.3 Operational_Performance	3.4 Infrastructure_Performance	3.5 Relationship_Performance	3. Quality_Performance
N	Valid	205	206	204	205	203	207
	Missing	2	1	3	2	4	0
Mean		3.9037	3.8351	3.8078	4.0992	3.9963	3.9326
Std. Deviation		.87953	.86068	.83183	.83606	.85517	.76671
Skewness		-.444	-.449	-.454	-1.020	-.629	-.500
Std. Error of Skewness		.170	.169	.170	.170	.171	.169
Kurtosis		-.591	-.486	.111	1.092	-.034	-.167
Std. Error of Kurtosis		.338	.337	.339	.338	.340	.337

Table 6-25 summarises the observations for this group of variables.

Table 6-25: Summary of Observations for Quality Performance variables

Measure	Values	Comment
Mean	Range : 3.81 to 4.10	High for all variables
Standard Deviation	Range : 0.77 to 0.88	Low relative to Means
Skew	Range : -1.02 to -0.44	Negative Skew
Kurtosis	Range : -0.59 to 1.09	Negative to Positive Skews
Histograms	Does not approximate normal curve	Non-Normal distribution for all variables
P-P Plots	Points off diagonals	Non-Normal distribution for all variables
Kolmogorov-Smirnov Test	Sig values range from .000 to .002	Non-Normal distribution for all variables

The following may be deduced from the observations in Table 6-25:

a. The high mean values for these variables indicate that respondents have reported that performance is relatively good within the specific areas of quality at their organisations.
b. The low values of standard deviation relative to the means indicate that there is a high degree of consistency in the responses.
c. The non-zero skew and kurtosis values indicate a departure from normal distribution varying from slight to moderate.
d. The histogram and P-P plot visually confirm a departure from normal distribution.
e. The significant result of the Kolmogorov-Smirnov Test further confirms a non-normal distribution.

6.4.3 QUALITY SYSTEM PERFORMANCE

Quality System Performance is a single 1st Order latent variable. The descriptive statistics are included in Table 6-26.

Table 6-26: Quality System Performance Descriptive Statistics

4. Quality_System_Performance

N	Valid	206
	Missing	1
Mean		3.8785
Std. Deviation		.84967
Skewness		-.466
Std. Error of Skewness		.169
Kurtosis		-.484
Std. Error of Kurtosis		.337

The following may be deduced from the observations in Table 6-26 and Appendix H:

a. The high mean value for this variable indicates that respondents have reported that performance is relatively good at their organisations from a quality system point of view.
b. The low value of standard deviation relative to the mean indicate that there is a high degree of consistency in the responses.
c. The non-zero skew and kurtosis values indicate a departure from normal distribution.
d. The histogram and P-P plot visually confirm a departure from normal distribution.
e. The significant result of the Kolmogorov-Smirnov Test further confirms a non-normal distribution.

6.4.4 BUSINESS PERFORMANCE

Business Performance is a single 1st Order latent variable. The descriptive statistics are included in Table 6-27.

Table 6-27: Business Performance Descriptive Statistics

5. Business_Performance

N	Valid	203
	Missing	4
Mean		3.8447
Std. Deviation		.96633
Skewness		-.816
Std. Error of Skewness		.171
Kurtosis		.429
Std. Error of Kurtosis		.340

The following may be deduced from the observations in Table 6-27 and Appendix H:

a. The high mean value for this variable indicates that respondents have reported that performance is relatively good from a business point of view at their organisations.
b. The low value of standard deviation relative to the mean indicate that there is a high degree of consistency in the responses.
c. The non-zero skew and kurtosis values indicate a departure from normal distribution.
d. The histogram and P-P plot visually confirm a departure from normal distribution.
e. The significant result of the Kolmogorov-Smirnov Test further confirms a non-normal distribution.

6.4.5 CONTINGENCY FACTORS

The six contingency factors are all single 1st Order latent variables. The descriptive statistics are included in Table 6-28

Table 6-28: Contingency Factors Descriptive Statistics

		6.1 Management Knowledge	6.2 Industry_Rivalry	6.3 Demand_for_ Compliance	6.4 Culture	6.5 Org_Structure	6.6 Env_Uncertainty
N	Valid	206	201	204	206	205	204
	Missing	1	6	3	1	2	3
Mean		3.6958	3.6932	4.1062	3.6893	3.7220	3.4289
Std. Deviation		1.03605	.87456	.83646	1.09124	1.19055	1.02246
Skewness		-.373	-.281	-.914	-.460	-.714	-.071
Std. Error of Skewness		.169	.172	.170	.169	.170	.170
Kurtosis		-.663	-.037	1.033	-.861	-.404	-.842
Std. Error of Kurtosis		.337	.341	.339	.337	.338	.339

Table 6-29 summarises the observations for this group of variables.

Table 6-29: Summary of Observations for Contingency Factor variables

Measure	Values	Comment
Mean	Range : 3.43 to 4.11	High for all variables
Standard Deviation	Range : 0.84 to 1.19	Low relative to Means
Skew	Range : -0.91 to -0.07	Negative Skew
Kurtosis	Range : -0.86 to 1.03	Negative to Positive Skews
Histograms	Does not approximate normal curve	Non-Normal distribution for all variables
P-P Plots	Points off diagonals	Non-Normal distribution for all variables
Kolmogorov-Smirnov Test	Sig values range from .000 to .000	Non-Normal distribution for all variables

The following may be deduced from the observations in Table 6-26:

a. The high mean values for these variables indicate that respondents have reported a high presence of these contingency factors at their organisations.
b. The low values of standard deviation relative to the means indicate that there is a high degree of consistency in the responses.

c. The non-zero skew and kurtosis values indicate a departure from normal distribution varying from slight to moderate.
d. The histogram and P-P plot visually confirm a departure from normal distribution
e. The significant result of the Kolmogorov-Smirnov Test further confirms a non-normal distribution.

6.5 REPRESENTIVITY OF RESPONSES / DATA BIAS

In order to assess data bias, the following checks were performed:

Step 1: The profile of the respondents was mapped against the profile of the population along specific criteria that may influence the implementation of quality practices.

Step 2: Kruskal Wallis Tests (Field, 2015) were performed on the Quality Practice variables groups in accordance with each profile criteria to test whether there is a significant difference in the way each group implements quality practices.

Table 6-30 maps the sample against the population in accordance with each criterion.

Table 6-30: Sample mapped against Population

Total Population	Number	%			
	2049	100%			
Total Sample	207	10%			
Province		**WC**	**GAU**	**KZN**	**Other**
Population	Number (%)	410 (20%)	1352 (66%)	266 (13%)	20 (1%)
Responses	Number (%)	43(21%)	124(60%)	36(17%)	4(2%)
Variance	(%)	+1%	-6%	+4%	+1%
Size		**0-20**	**21-70**	**71-200**	**200+**
Population	Number (%)	451 (22%)	635 (31%)	533 (26%)	430 (21%)
Responses	Number (%)	61(30%)	69(33%)	37(18%)	40(19%)
Variance	(%)	+8%	+2%	-8%	-2%
Service Type		**Captive**	**Outsourced**	**Both**	
Population	Number (%)	1127 (55%)	922 (45%)		
Responses	Number (%)	111(54%)	35(17%)	61(29%)	
Adjusted	(%)	68%	32%		
Variance	(%)	+13%	13%		
Markets Served		**Domestic**	**International**	**Both**	
Population	Number (%)	190000 (85%)	32500 (15%)		
Responses	(%)	62%	4%	34%	
Adjusted	(%)	79%	21%		
Variance	(%)	-6%	+6%		

6.5.1 TESTS FOR BIAS BASED ON PROVINCE

Regarding the "Province" criterion, the highest variance is found in Gauteng where the sample is 6% lower than the population (Table 6-30). The average variance between the sample and population is 3% across provinces which indicate that the sample is a good representation of the population.

Table 6-31 includes the Kruskal Wallis Test for significant differences in the implementation of quality practices across provinces. The result shows that the difference is significant for all 1st, 2nd and 3rd order quality practice variables. Accordingly, there would have been a significant bias had the sample not been representative of the population.

Table 6-31: Significance Test – Quality Practices vs. Province

	2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
Kruskal-Wallis H	11.842	11.315	20.429	15.151	12.045	15.106	17.990	18.100
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.008	.010	.000	.002	.007	.002	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: 1.5 Province

6.5.2 TESTS FOR BIAS BASED ON SIZE

Regarding the "Size" criterion, the highest variances are in the 0-20 seat category where the sample is 8% higher than the population and the 71-200 seat category where the sample is 8% lower than the population (Table 6-30). The average variance between the sample and population is 5% across all size categories, which indicates that the sample is a good representation of the population.

Table 6-32 includes the Kruskal Wallis Test for significant differences in the implementation of quality practices across contact centre sizes. The result shows that that the difference is not significant for all 1st, 2nd and 3rd order quality practice variables. Accordingly, the variance in the sample and population would not bias the study.

Table 6-32: Significance Test – Quality Practices vs. Contact Centre Size

	2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
Kruskal-Wallis H	4.048	2.316	1.208	1.472	.467	.702	.648	1.215
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.256	.509	.751	.689	.926	.873	.885	.749

a. Kruskal Wallis Test

b. Grouping Variable: 1.11 Call Centre Size

6.5.3 TESTS FOR BIAS BASED ON SERVICE TYPE

Regarding the "Service Type" criterion, the adjusted sample demographic shows that there is 13% variance across categories, as the sample of Captive contact centres is 13% higher than the population and 13% lower for Outsourced contact centres (Table 6-30).

Table 6-33 includes the Kruskal Wallis Test for significant differences in the implementation of quality practices across service types. The result shows that the difference is only significant for the 'Relationship Practices' variable. With this being only one of six quality practices, coupled with the insignificant result for the 2nd and 3rd order variables, it is not expected that the variance in the sample and population would bias the study.

Table 6-33: Significance Test – Quality Practices vs. Service Type

	2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
Kruskal-Wallis H	1.664	4.170	3.149	4.003	1.805	9.117	3.918	3.905
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.435	.124	.207	.135	.405	.010	.141	.142

a. Kruskal Wallis Test

b. Grouping Variable: 1.6 Service Type

6.5.4 TESTS FOR BIAS BASED ON MARKETS SERVED

Regarding the "Markets Served" criterion, the adjusted sample variance is 6% across categories where the sample is 6% lower on domestic markets while being 6% higher on centres that service international markets (Table 6-30).

Table 6-34 includes the Kruskal Wallis Test for significant differences in the implementation of quality practices across markets served. The result shows that the difference is not significant for all 1st, 2nd and 3rd order quality practice variables. Accordingly, the variance in the sample and population would not bias the study.

Table 6-34: Significance Test – Quality Practices vs. Markets Served

	2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
Kruskal-Wallis H	.536	2.355	1.778	3.413	2.420	.681	2.043	1.850
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.765	.308	.411	.182	.298	.711	.360	.396

a. Kruskal Wallis Test

b. Grouping Variable: 1.7 Markets Served

6.6 MULTICOLLINEARITY CHECKS

Multicollinearity checks have been accomplished by generating a bivariate correlation table for all practice and performance latent variables. The results for practice variables are included in Table 6-35 and the results for performance variables are included in Table 6-36.

Due to the non-normal distribution of the variables, the correlations are obtained using Spearman's Rho as opposed to Pearson's r (Field, 2015).

Multicollinearity will also be checked during Path Analysis via the value of the Variance Inflation Factor (VIF) as discussed in section 5.9.6.

Table 6-35: Bivariate Correlations for Practice Variables

			2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices
Spearman's rho	2.1 Leadership_Practices	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	207					
	2.2 Customer_Practices	Correlation Coefficient	.703**	1.000				
		Sig. (2-tailed)	.000	.				
		N	206	206				
	2.3 HR_Practices	Correlation Coefficient	.745**	.747**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	207	206	207			
	2.4 Operational_Practices	Correlation Coefficient	.650**	.722**	.847**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	206	205	206	206		
	2.5 Infrastucture_Practices	Correlation Coefficient	.675**	.754**	.805**	.796**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.000	.	
		N	206	205	206	206	206	
	2.6 Relationship_Practices	Correlation Coefficient	.577**	.601**	.689**	.693**	.717**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	201	200	201	200	200	201

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

Bivariate correlations above .8 are found between Human Resource Practices and Operational Practices and also between Human Resource Practices and Infrastructure Practices.

Note that Practice / Performance Model does not call for regression analysis with multiple independent practice variables.

Table 6-36: Bivariate Correlations for Performance Variables

			3.1 Customer_Performance	3.2 HR_Performance	3.3 Operational_Performance	3.4 Infrastructure_Performance	3.5 Relationship_Performance
Spearman's rho	3.1 Customer_Performance	Correlation Coefficient	1.000				
		Sig. (2-tailed)	.				
		N	205				
	3.2 HR_Performance	Correlation Coefficient	.824**	1.000			
		Sig. (2-tailed)	.000	.			
		N	205	206			
	3.3 Operational_Performance	Correlation Coefficient	.812**	.831**	1.000		
		Sig. (2-tailed)	.000	.000	.		
		N	203	204	204		
	3.4 Infrastructure_Performance	Correlation Coefficient	.678**	.668**	.722**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.	
		N	203	204	202	205	
	3.5 Relationship_Performance	Correlation Coefficient	.781**	.820**	.805**	.699**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	202	203	201	201	203

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

Bivariate correlations above .8 are observed in 5 of the 10 relationships tested in Table 6-36.

Note that the Practice / Performance Model does call for a regression analysis with multiple independent variables in testing Hypothesis 5, i.e. the impact of Quality Performance on Quality System Performance.

The value of the Variance Inflation Factor (VIF) will be considered for this analysis.

6.7 SCALE REFINEMENT AND VALIDATION

The scale refinement and validation processes include confirming the factor analysis approach followed by conducting analyses of Unidimensionality, Construct Validity, Reliability and Criterion Validity.

6.7.1 EFA VS CFA APPROACH

As explained in section 5.10.1, the choice of Exploratory or Confirmatory Factor Analysis is based on whether or not a hypothesised data structure exists. In this study the data was pre-structured into factors based on recognised literature and content validation in the Pilot Phase. A confirmatory factor analysis was therefore employed in the form of a Principle Component Analysis (PCA).

Exploratory Factor Analysis (EFA) was not considered for this study due to the pre-defined data structure and certain limitations of the method. However, an EFA was performed to illustrate these limitations. The results are included in Table 6-37 and Appendix J.

The EFA was performed for all practice and performance statements. Table 6-37 shows that 15 factors were extracted with eigenvalues higher than 1 and that approximately 62% of the variance is explained by a single factor. This unusable result is confirmed in Appendix J which shows that most of the statements load heavily on this single factor.

Table 6-37: Factors Extracted via EFA

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	69,832	61,799	61,799	69,832	61,799	61,799
2	4,479	3,964	65,762	4,479	3,964	65,762
3	3,848	3,405	69,168	3,848	3,405	69,168
4	2,727	2,413	71,581	2,727	2,413	71,581
5	2,269	2,008	73,588	2,269	2,008	73,588
6	2,173	1,923	75,512	2,173	1,923	75,512
7	1,948	1,724	77,235	1,948	1,724	77,235
8	1,779	1,574	78,809	1,779	1,574	78,809
9	1,705	1,509	80,318	1,705	1,509	80,318
10	1,500	1,327	81,645	1,500	1,327	81,645
11	1,439	1,274	82,919	1,439	1,274	82,919
12	1,312	1,161	84,080	1,312	1,161	84,080
13	1,235	1,093	85,173	1,235	1,093	85,173
14	1,181	1,045	86,218	1,181	1,045	86,218
15	1,059	0,937	87,155	1,059	0,937	87,155

6.7.2 UNIDIMENSIONALITY ANALYSIS

Given the confirmatory approach taken in this study, unidimensionality of the predefined data structure may be established via an Item Analysis (IA) as explained in section 5.3.10. The analysis was performed by correlating the Item scores to Scale scores, i.e. each questionnaire statement is correlated with the latent variable with which it is associated.

Table 6-38 shows the result for the practice variables and Table 6-39 shows the results for the performance variables.

Table 6-38: Unidimensionality Analysis for Practice Variables

	2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices
2.1.1 Assumes responsibility	.832**	.565**	.620**	.537**	.528**	.428**
2.1.2 Determines customer experience	.767**	.535**	.560**	.466**	.547**	.414**
2.1.3 Allocates adequate resources	.863**	.631**	.659**	.563**	.606**	.498**
2.1.4 Actively communicate commitment	.869**	.618**	.672**	.570**	.593**	.494**
2.1.5 Evaluated on Quality Performance	.831**	.571**	.642**	.577**	.586**	.511**
2.1.6 Integrates Quality Focus	.860**	.646**	.658**	.601**	.631**	.591**
2.2.1 Customer requirements	.449**	.606**	.417**	.423**	.392**	.385**
2.2.2 Consistent across all channels	.520**	.707**	.591**	.551**	.595**	.376**
2.2.3 Information is accurate, etc.	.609**	.687**	.670**	.623**	.648**	.508**
2.2.4 Customer Satisfaction Surveys	.372**	.596**	.420**	.406**	.450**	.369**
2.2.5 Complaints Analysis	.371**	.613**	.462**	.466**	.494**	.339**
2.2.6 Social Media, Employee Feedback, etc.	.430**	.689**	.495**	.478**	.533**	.378**
2.2.7 Processes for handling complaints	.536**	.663**	.649**	.612**	.608**	.540**
2.2.8 Resolve complaints quickly	.545**	.668**	.634**	.597**	.565**	.528**
2.2.9 Identity made clear	.531**	.607**	.581**	.527**	.541**	.550**
2.2.10 Legal, financial and contractual implications	.452**	.603**	.493**	.441**	.466**	.450**
2.2.11 Contact not wanted is terminated	.391**	.603**	.410**	.437**	.396**	.404**
2.2.12 Services are personalised	.487**	.670**	.436**	.471**	.480**	.393**
2.2.13 Customer journeys are tracked	.574**	.777**	.544**	.514**	.516**	.431**
2.3.1 Code of Conduct	.480**	.567**	.661**	.653**	.566**	.520**
2.3.2 Quality awareness	.630**	.688**	.830**	.744**	.679**	.655**
2.3.3 Right staff with the right skills	.653**	.670**	.829**	.734**	.694**	.558**
2.3.4 Suitable work environment	.629**	.609**	.799**	.682**	.706**	.543**
2.3.5 Organisational structure and reporting lines	.595**	.537**	.763**	.651**	.682**	.530**

2.3.6 QA functions are carried out	.591**	.534**	.723**	.618**	.630**	.579**
2.3.7 Training, development and coaching	.630**	.579**	.770**	.654**	.651**	.554**
2.3.8 Compliance	.608**	.617**	.801**	.662**	.682**	.629**
2.3.9 Product / Service knowledge	.648**	.629**	.788**	.664**	.734**	.603**
2.3.10 Role functions and performance requirements	.626**	.601**	.826**	.719**	.693**	.533**
2.3.11 Appropriate language skills	.550**	.575**	.740**	.602**	.612**	.595**
2.3.12 Good problem-solving skills	.591**	.640**	.804**	.696**	.661**	.535**
2.3.13 Encouraged to ask questions, etc.	.596**	.645**	.813**	.700**	.631**	.514**
2.3.14 Competencies are reviewed	.484**	.504**	.688**	.549**	.512**	.477**
2.3.15 Pursue formal qualifications	.460**	.426**	.654**	.517**	.539**	.365**
2.3.16 Performance data	.564**	.556**	.784**	.655**	.642**	.554**
2.3.17 Recognised for quality performance	.586**	.586**	.758**	.708**	.638**	.592**
2.3.18 Staff satisfaction is measured	.647**	.597**	.817**	.708**	.643**	.522**
2.3.19 Staff Attrition and Absenteeism	.615**	.564**	.817**	.688**	.637**	.561**
2.4.1 Work processes are clearly communicated	.486**	.540**	.718**	.797**	.620**	.516**
2.4.2 Customer contact handling	.550**	.580**	.725**	.830**	.664**	.547**
2.4.3 Processes are in place for escalation	.530**	.567**	.713**	.814**	.658**	.565**
2.4.4 Processes are in place for service recovery	.597**	.620**	.762**	.884**	.716**	.596**
2.4.5 Forecast and scheduling processes	.579**	.603**	.710**	.819**	.672**	.636**
2.4.6 Contingency plans	.531**	.632**	.738**	.865**	.687**	.597**
2.4.7 Samples are measured and monitored	.509**	.608**	.689**	.795**	.649**	.604**
2.4.8 Root Cause Analysis is conducted	.479**	.571**	.567**	.756**	.631**	.572**
2.4.9 Key processes are systematically improved	.654**	.688**	.715**	.838**	.714**	.665**
2.5.1 Migration to Digital Channels is a priority	.434**	.510**	.527**	.525**	.701**	.515**
2.5.2 Implementing Cloud based solutions	.371**	.474**	.463**	.484**	.635**	.429**
2.5.3 Systems to record customer interaction history	.507**	.597**	.647**	.645**	.765**	.628**
2.5.4 Customer interaction details	.427**	.457**	.567**	.538**	.734**	.518**
2.5.5 Data and information is accessible	.531**	.584**	.641**	.670**	.773**	.542**
2.5.6 Customer Interactions in a single system	.459**	.488**	.486**	.444**	.656**	.399**
2.5.7 Customer data secure, controlled and monitored	.493**	.526**	.627**	.652**	.713**	.596**
2.5.8 Suitable work environment, ergonomics, etc.	.588**	.591**	.714**	.658**	.811**	.583**
2.5.9 Minimize the impact of noise	.566**	.585**	.681**	.641**	.745**	.575**
2.5.10 Continuation of service in case of emergencies	.566**	.606**	.651**	.645**	.739**	.636**
2.5.11 Risk Management procedures	.500**	.544**	.588**	.663**	.682**	.592**
2.6.1 Documented agreement with client	.556**	.564**	.624**	.642**	.638**	.881**
2.6.2 Performance monitored against KPIs	.576**	.580**	.655**	.655**	.657**	.879**
2.6.3 Supplier relationships are governed by SLAs	.531**	.549**	.588**	.623**	.647**	.830**
2.6.4 Fewer suppliers and long-term relationships	.465**	.476**	.554**	.552**	.568**	.834**

The analysis for the practice statements show that each statement correlates highest with the latent variable to which it has been allocated thus confirming the hypothesised structure of the quality practice data.

Table 6-39: Unidimensionality Analysis for Performance Variables

	3.1 Customer_Performance	3.2 HR_Performance	3.3 Operational_Performance	3.4 Infrastructure_Performance	3.5 Relationship_Performance
3.1.1 Performance related to Customers has improved	.880**	.783**	.753**	.680**	.774**
3.1.2 Customer Satisfaction scores (CSat) have improved	.883**	.694**	.682**	.562**	.672**
3.1.3 Net Promoter Scores (NPS) have improved	.885**	.725**	.741**	.584**	.722**
3.1.4 Social Media Sentiment has improved	.824**	.624**	.730**	.604**	.690**
3.1.5 Complaints as a % of total interactions has reduced	.890**	.749**	.701**	.611**	.703**
3.1.6 Opt out rate has reduced	.859**	.775**	.750**	.564**	.670**
3.2.1 Accuracy / completeness of information improved	.757**	.865**	.759**	.649**	.784**
3.2.2 Contact Quality has improved	.747**	.871**	.749**	.626**	.739**
3.2.3 Sales conversion rates have improved	.685**	.821**	.696**	.644**	.729**
3.2.4 First contact resolutions has increased	.692**	.849**	.734**	.656**	.756**
3.2.5 Ratio of repeat calls reduced	.732**	.853**	.717**	.585**	.710**
3.2.6 Staff Satisfaction Scores improved	.794**	.896**	.784**	.647**	.747**
3.2.7 Absenteeism has reduced	.663**	.808**	.622**	.438**	.626**
3.2.8 Attrition has reduced	.651**	.856**	.686**	.513**	.671**
3.3.1 Total interactions responded to increased	.528**	.581**	.725**	.552**	.579**
3.3.2 Customer abandonment rate has reduced	.644**	.680**	.825**	.616**	.671**
3.3.3 Agent occupancy has improved	.725**	.731**	.857**	.645**	.687**
3.3.4 Scheduling Accuracy has improved	.755**	.764**	.885**	.685**	.746**
3.3.5 Contactability of customers has improved	.705**	.675**	.822**	.563**	.684**
3.3.6 Response time across digital channels have improved	.698**	.695**	.800**	.648**	.710**
3.4.1 System availability has increased	.648**	.665**	.703**	.851**	.708**
3.4.2 Data security risks have decreased	.579**	.552**	.622**	.915**	.580**
3.4.3 Increased compliance regulations	.626**	.607**	.627**	.849**	.672**
3.5.1 Client Satisfaction scores improved	.770**	.744**	.759**	.717**	.881**
3.5.2 Higher quality interaction with internal support	.718**	.778**	.766**	.640**	.900**
3.5.3 Higher quality interaction with external support	.747**	.750**	.745**	.627**	.936**
3.5.4 Improved supplier relationships	.736**	.780**	.752**	.673**	.930**

The analysis for the performance statements show that each statement correlates highest with the latent variable to which it has been allocated thus confirming the hypothesised structure of the quality performance data.

6.7.3 CONSTRUCT VALIDITY

Construct validity measures the extent to which the items in a scale all measure the same construct. This may be established through 'Principal Component Analysis' (PCA). The results of the PCA for all first order latent variables are summarised in Table 6-40. The detailed analysis for each variable is included in Appendix K.

Table 6-40: Principal Component Analysis for 1st Order Latent Variables

	KMO Measure	Bartlett's Test (Sig. Value)	Number of Factors	% Explained by First Factor	% Explained by Second Factor	% Explained by Third Factor	% Explained by Fourth Factor	Factor Loading Range
Practices								
Leadership Practices	.889	.000	1	74.873	N/a	N/a	N/a	.830 - .906
Customer Practices	.859	.000	4	45.339*	10.093*	8.044*	7.856*	.593 - .771*
HR Practices	.952	.000	2	61.032*	5.689*	N/a	N/a	.618 - .854*
Operational Practices	.917	.000	1	69.097	N/a	N/a	N/a	.751 - .879
Infrastructure Practices	.882	.000	2	52.173*	9.180*	N/a	N/a	.564 - .794*
Relationship Practices	.815	.000	1	73.601	N/a	N/a	N/a	.806 - .883
Performance								
Customer Performance	.893	.000	1	75.466	N/a	N/a	N/a	.807 - .913
HR Performance	.919	.000	1	74.855	N/a	N/a	N/a	.823 - .900
Operational Performance	.893	.000	1	69.108	N/a	N/a	N/a	.740 - .888
Infrastructure Performance	.721	.000	1	76.438	N/a	N/a	N/a	.849 - .893
Relationship Performance	.854	.000	1	86.010	N/a	N/a	N/a	.898 - .950
Quality System Performance	.859	.000	1	77.551	N/a	N/a	N/a	.809 - .924
Business Performance	.878	.000	1	89.440	N/a	N/a	N/a	.920 - .964
Contingency Factors								
Management Knowledge	.645	.000	1	79.659	N/a	N/a	N/a	.776 - .948
Industry Rivalry	.638	.000	1	63.073	N/a	N/a	N/a	.703 - .845
Demand for Compliance	.688	.000	1	76.273	N/a	N/a	N/a	.807 - .910
Culture	.500	.000	1	86.907	N/a	N/a	N/a	.932 - .932
Organisational Structure	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a
Environmental Uncertainty	.500	.000	1	72.889	N/a	N/a	N/a	.854 - .854

* Unrotated

The results of the PCA can be summarised as follows:

- The Kaiser-Meyer-Olkin (KMO) values are all > 0.5 indicating that patterns of correlation are relatively compact and so factor analysis should yield distinct and reliable factors.

- "Bartlett's Test of Sphericity" values are all significant indicating that the overall correlations between variables are significantly different from zero, hence not too small.
- The number of factors extracted for all variables is one except for Customer Practices (four), HR Practices (two) and Operational Practices (two). The variance explained by the first factor for each of these variables are considerably higher than that explained by the second and subsequent factors where relevant.
- The factor loadings for all statements are higher than the 0.4 threshold. Note that for the variables with more than one factor, the unrotated solution is used for factor loading values.
- Analysis of the Scree Plots in Appendix K confirms the number of factors extracted.

The results show that the variables all exhibit adequate construct validity.

6.7.4 RELIABILITY ANALYSIS

The internal consistency method for assessing reliability of scales has been employed in this study. Internal consistency refers to the degree of homogeneity in a set of items and is estimated via Cronbach's Alpha (reliability coefficient). The results of the reliability analysis are included in Table 6-41 and the details are included in Appendix L.

Table 6-41: Reliability Analysis

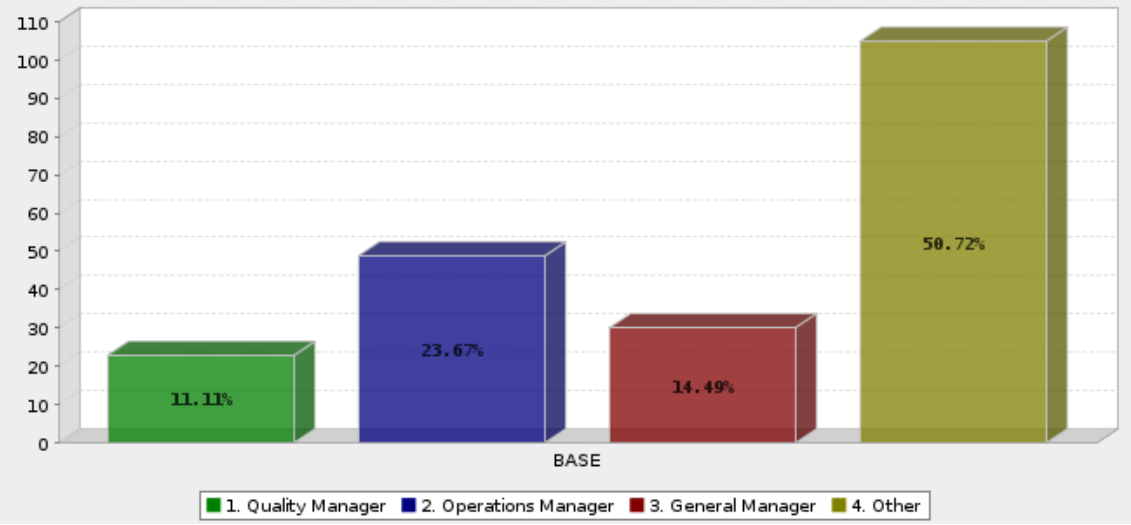
	Cronbach's Alpha	**Number of Items**
Practices		
Leadership Practices	.932	6
Customer Practices	.895	13
HR Practices	.964	19
Operational Practices	.942	9
Infrastructure Practices	.900	11
Relationship Practices	.879	4
Performance		
Customer Performance	.934	6
HR Performance	.951	8
Operational Performance	.910	6
Infrastructure Performance	.844	3
Relationship Performance	.945	4
Quality System Performance	.925	5
Business Performance	.970	5
Contingency Factors		
Management Knowledge	.872	3
Industry Rivalry	.689	3
Demand for Compliance	.844	3
Culture	.848	2
Organisational Structure	N/a	1
Environmental Uncertainty	.624	2

Cronbach's Alpha for all variables is above the 0.7 threshold with the exception of "Industry Rivalry" and "Environmental Uncertainty". These can be considered broadly defined concepts and thus accepts a lower value of the reliability coefficient (see section 5.10.5).

Given the high values of the reliability coefficient, none of the items were considered for deletion even in the rare event that deletion would improve the Alpha score.

An addition aspect of reliability considered in this study is the appropriateness of the person that completed the questionnaire. This aspect was analysed in section 6.3.1, where it was found that 94% of respondents were considered suitable for this study. Details of respondents not designated as Quality Mangers, Operations Managers or General Managers (i.e. the targeted respondents) are included in Appendix I. The remaining 6% that provide insight from lower levels in their organisations are also considered valuable.(Flynn et al, 1994).

Figure 6-1 and Table 6-3 are reproduced here for convenient reference.



	Answer	Count	Percent
1.	Quality Manager	23	11.11%
2.	Operations Manager	49	23.67%
3.	General Manager	30	14.49%
4.	Other	105	50.72%
	Total	207	100%

6.7.5 CRITERION VALIDITY

Criterion-related validity is a measure of how well scales representing the various quality management practices are related to measures of quality performance. To establish the criterion-related validity of the various constructs, the practice variables have been correlated with the performance variables. The results are included in Table 6-42.

Table 6-42: Criterion Validity Analysis

		2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastucture_Practices	2.6 Relationship_Practices	3.1 Customer_Performance	3.2 HR_Performance	3.3 Operational_Performance	3.4 Infrastructure_Performance	3.5 Relationship_Performance	4. Quality_System_Performance	5. Business_Performance
2.1	CC	1,00												
	Sig													
2.2	CC	.703**	1,00											
	Sig	0,0												
2.3	CC	.745**	.747**	1,00										
	Sig	0,00	0,00											
2.4	CC	.650**	.722**	.847**	1,00									
	Sig	0,00	0,00	0,00										
2.5	CC	.675**	.754**	.805**	.796**	1,00								
	Sig	0,00	0,00	0,00	0,00									
2.6	CC	.577**	.601**	.689**	.693**	.717**	1,00							
	Sig	0,00	0,00	0,00	0,00	0,00								
3.1	CC	.696**	.767**	.759**	.740**	.803**	.686**	1,00						
	Sig	0,00	0,00	0,00	0,00	0,00	0,00							
3.2	CC	.715**	.693**	.776**	.719**	.753**	.607**	.824**	1,00					
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00						
3.3	CC	.629**	.685**	.709**	.727**	.732**	.601**	.812**	.831**	1,00				
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0					
3.4	CC	.553**	.574**	.605**	.575**	.682**	.582**	.678**	.668**	.722**	1,00			
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
3.5	CC	.660**	.711**	.725**	.717**	.717**	.654**	.781**	.820**	.805**	.699**	1,00		
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			
4	CC	.711**	.737**	.769**	.731**	.768**	.619**	.785**	.841**	.841**	.685**	.852**	100	
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		
5	CC	.580**	.616**	.683**	.692**	.665**	.610**	.704**	.720**	.769**	.611**	.770**	.777**	1,00
	Sig	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	

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

The results show that the correlations between the practice variables and relevant performance variables are all positive and significant ($p < 0.01$) thus confirming criterion related validity.

6.8 DATA ANALYSIS / HYPOTHESES TESTING

This section covers the testing of the eight hypotheses. An early view of the Practice / Performance relationship precedes the analyses.

6.8.1 AN EARLY VIEW OF THE PRACTICE / PERFORMANCE RELATIONSHIP

Prior to testing the specific hypotheses, an early view of the Practice / Performance relationship has been determined. This was achieved via the following steps:

Step 1 The data was sorted in an ascending manner, based on the values of the 3rd order quality practice variable (Q2. Quality Practices)

Step 2 A cut-off point was determined to separate the respondents into two groups i.e. 'Low Users' of quality practices (Group 1) and 'High Users' of quality practices (Group 2). This cut-off point was set at a value of 3.99 to achieve a significant number of users in each group (81 in Group 1 and 126 in Group 2).

Step 3 A dummy variable was created (Q7. Use of Quality Practices) that was used to assign the group number to each response.

Step 4 A Non-parametric test (Kruskal Wallis) for significance in the performance of each group was conducted.

The performance of each group was tested against three separate performance variables i.e. Quality Performance, Quality System Performance and Business Performance. The results are shown in Tables 6-43 and 6-44.

Table 6-43: Group Ranks for Low and High Users of Quality Practices

	7. Use of Quality Practices	N	Mean Rank
3. Quality_Performance	1.00 (Low Users)	81	51.07
	2.00 (High Users)	126	138.03
	Total	207	
4. Quality_System_Performance	1.00 (Low Users)	81	55.19
	2.00 (High Users)	125	134.81
	Total	206	
5. Business_Performance	1.00 (Low Users)	80	57.55
	2.00 (High Users)	123	130.91
	Total	203	

Table 6-44: Significance Test Results for Low and High Users of Quality Practices

	3. Quality_Performance	4. Quality_System_Performance	5. Business_Performance
Kruskal-Wallis H	104.018	88.640	77.435
df	1	1	1
Asymp. Sig.	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: 7. Use of Quality Practices

Table 6-44 shows that the results are significant ($p < .001$) for all three performance measures i.e. the performance of 'Low Users' of quality practices is significantly lower than 'High Users' of quality practices when measured on quality performance, quality system performance and business performance.

6.8.2 HYPOTHESIS 1 – DEPLOYMENT OF QUALITY PRACTICES 1

Hypothesis 1 is based on Research Question 1 i.e.

"To what extent are quality practices deployed in the South African Contact Centre Industry?"

and reads as follows:

Hypothesis 1 (H1): The South African Contact Centre Industry deploys quality management practices

Table 6-45 summarises the mean values for the calculated 1st, 2nd and 3rd order latent quality practice variables while Tables 6-46 to 6-51 include the mean values for the quality practice questionnaire statements.

Table 6-45: Mean Values for Latent Quality Practice Variables

Level	Quality Practice Variable	Mean Value
1st Order	Leadership Practices	4.145
1st Order	Customer Practices	3.916
1st Order	HR Practices	4.105
1st Order	Operational Practices	4.070
1st Order	Infrastructure Practices	3.933
1st Order	Relationship Practices	4.164
2nd Order	Core Quality Practices	4.0452
3rd Order	Quality Practices	4.0629

Table 6-46: Mean Values for Leadership Practice Statements

	Question	Count	Score
1.	Leadership assumes responsibility for Quality Performance	207	4.290
2.	Leadership determines the customer experience and quality goals	207	4.252
3.	Leadership allocates adequate resources for Quality Improvement efforts	207	4.053
4.	Leadership actively communicate their Quality commitment to employees	207	4.146
5.	Leadership is evaluated on Quality Performance	207	4.054
6.	Integration of Quality Focus in all activities is regularly reviewed	207	4.073
		Average	**4.145**

Table 6-47: Mean Values for Customer Practice Statements

	Question	Count	Score
1.	We use customer requirements as a basis for quality	207	4.078
2.	All customer interactions are consistent across all communication channels	207	3.751
3.	Information provided is accurate, relevant and easily understood	207	3.971
4.	Customer Experience is measured via Customer Satisfaction Surveys	207	3.888
5.	Customer Experience is measured via Complaints Analysis	207	3.812
6.	Customer Experience is measured via other means such as Social Media, Employee Feedback, etc.	207	3.585
7.	Processes are in place for handling complaints about the Call Centre or Products/Services	207	4.317
8.	Customer service employees are empowered to resolve complaints quickly	207	4.063
9.	The Identity of the Call Centre is made clear in each interaction	207	4.305
10.	Customers are clearly informed about legal, financial and contractual implications	207	4.063
11.	A contact that is not wanted by the customer is terminated and the customer is not contacted again	207	3.752
12.	Services are personalised based on Customer profiles	207	3.681
13.	Customer journeys are tracked across various channels	207	3.639
		Average	**3.916**

Table 6-48: Mean Values for Human Resource Practice Statements

	Question	Count	Score
1.	The Code of Conduct is well defined and communicated	207	4.360
2.	We build quality awareness among employees on an on-going basis	207	4.112
3.	The right staff with the right skills are provided at the right times across all channels	207	3.772
4.	A suitable work environment is provided to deliver the desired customer experience	207	4.088
5.	Organisational structure and reporting lines are well defined and communicated	207	4.257
6.	QA functions are carried out	207	4.222
7.	Training, development and Coaching is conducted	207	4.218
8.	Compliance - knowledge of customer and data legislation is available	207	4.149
9.	Product / Service knowledge and content management is available	207	4.170
10.	All role functions and performance requirements are specified and understood by employees	207	4.227
11.	Agents have appropriate language skills to meet the needs of the target customer base	207	4.127
12.	Agents have good problem-solving skills	207	3.777
13.	Agents are encouraged to ask questions, report problems and express ideas	207	4.087
14.	Agents competencies are reviewed at least annually	207	4.094
15.	Agents are encouraged to pursue formal qualification and accreditation schemes	207	3.946
16.	Agent performance data is available (scorecards)	207	4.183
17.	Agents are recognised for superior quality performance	207	4.088
18.	Staff satisfaction is measured to understand staff needs and take action to improve as required	207	3.903
19.	Staff Attrition and Absenteeism is monitored and managed	207	4.223
		Average	**4.105**

Table 6-49: Mean Values for Operational Practice Statements

	Question	Count	Score
1.	Work processes are clearly communicated to employees	207	4.192
2.	Processes are in place for customer contact handling	207	4.284
3.	Processes are in place for escalation	207	4.255
4.	Processes are in place for service recovery	207	4.097
5.	Forecast and scheduling processes are in place in order to deal with customer demands in a timely manner	207	4.000
6.	Contingency plans to deal with unexpected peaks of workload or lower than forecast staff availability are in place	207	3.801
7.	Samples of customer interactions for all channels and service types offered are measured and monitored	207	4.064
8.	Root Cause Analysis is conducted when failures occur	207	3.922
9.	Key processes are systematically improved to achieve better quality	207	4.019
		Average	**4.070**

Table 6-50: Mean Values for Infrastructure Practice Statements

	Question	Count	Score
1.	Migration to Digital Channels (Web Chat, Social Media, etc) is a priority	207	3.495
2.	Implementing Cloud based solutions is a priority	207	3.407
3.	Systems are in place that record customer interaction history	207	4.197
4.	Customer interaction details are easily accessible and available to agents	207	4.086
5.	Data and information is accessible to enable agents to deliver quick and accurate answers to customers	207	3.990
6.	All Customer Interactions (across channels) are processed in a single system	207	3.553
7.	All customer data is handled, stored and retrieved in a secure, access controlled and monitored environment	207	4.281
8.	A suitable work environment, taking into account ergonomics, is provided	207	4.067
9.	Steps are taken to minimize the impact of noise on agents and customers	207	3.919
10.	Processes are in place to ensure continuation of service in case of emergencies	207	4.081
11.	Risk Management (fraud / bribery / corruption) procedures are well defined and communicated	207	4.186
		Average	**3.933**

Table 6-51: Mean Values for Relationship Practice Statements

	Question	Count	Score
1.	Where applicable, the Call Centre has a documented agreement with the client that addresses the details of the service	207	4.145
2.	Performance is monitored against KPIs agreed with the client	207	4.185
3.	Supplier relationships are governed by SLAs	207	4.307
4.	Fewer suppliers are used and long-term relationships are encouraged	207	4.020
		Average	**4.164**

It is immediately apparent from the results included in Table 6-46 to 6-51 that the mean values for quality practice are on the higher end of the Likert Scale, with the lowest mean value of 3.407 for the second statement under Infrastructure Practices relating to cloud-based solutions and the highest mean found in the first statement under Human Resource Practices relating to the Code of Conduct. The resulting mean values for the calculated 1st, 2nd and 3rd order variable (Table 6-41) are also high ranging from 3.916 to 4.145.

These results support the first hypothesis that the South African Contact Centre Industry does deploy quality management practices.

Section 5.9.5 provided motivations as to why certain population characteristics may influence the deployment of quality practices. These characteristics included:

- Province (Gauteng, Western Cape, KZN, Other)
- Service Type (Captive, Outsourced, Both)
- Markets Served (Domestic, International, Both)
- Size (0-20, 21-70, 71-200, 200+ seats)

Kruskal Wallis Tests for significance in the deployment of quality practices were conducted against the four criteria, the results of which are included in Tables 6-31 to 6-34. The following results were found:

1. Contact centre size did not significantly influence the deployment of quality practices

2. Markets served did not significantly influence the deployment of quality practices

3. Under Service Type, only Relationship Practices were significantly different (Table 6-33)

4. Under Province, all 6 groups of Quality Practices were significantly different (Table 6-31)

A deeper analysis of result 3 above was undertaken. Table 6-52 includes the results of "Fisher's Exact Test" for Significance. This statistic was included in the Mann-Whitney test between two Independent samples.

Table 6-52: Fisher's Significance Test for Service Type vs. Relationship Statements

	2.6.1 Documented agreement with client	2.6.2 Performance monitored against KPIs	2.6.3 Supplier relationships are governed by SLAs	2.6.4 Fewer suppliers and long term relationships
Captive vs. Outsourced	.048	.179	.035	.000
Captive vs. Both	.783	.782	.758	.315
Outsourced vs. Both	.105	.153	.071	.025

The results show a significance difference ($p < .05$) between Captive and Outsourced centres for three of the four Relationship statements and between Outsourced and Both for the last Relationship statement. Tables 6-53 and 6-54 shows that Outsourced centres have higher mean values and lower standard deviations for each of these comparisons i.e. Outsourced centres agreed more strongly with these statements and answered more consistently.

It is worth noting the high number of "missing values" for these statements - ranging from 4.3% to 15% as shown in Table 6-55. As per section 6.2, missing values were induced into the data by transforming all N/A responses to missing values. One would expect that some of the statements were not applicable to Captive centres, especially the first 2 statements hence the high missing values.

Table 6-53: Statistics for Captive and Outsourced Centres vs. Relationship Statements

	1.6 Service Type	N	Mean	Std. Deviation	Std. Error Mean
2.6.1 Documented agreement with client	Captive	84	4.02	1.172	.128
	Outsourced	35	4.54	.561	.095
2.6.2 Performance monitored against KPIs	Captive	96	4.15	1.105	.113
	Outsourced	33	4.52	.619	.108
2.6.3 Supplier relationships are governed by SLAs	Captive	105	4.23	.983	.096
	Outsourced	34	4.62	.697	.120
2.6.4 Fewer suppliers and long term relationships	Captive	102	3.89	.994	.098
	Outsourced	32	4.56	.619	.109

Table 6-54: Statistics for Outsourced and Both Centres vs. Relationship Statements

	1.6 Service Type	N	Mean	Std. Deviation	Std. Error Mean
2.6.1 Documented agreement with client	Outsourced	35	4.54	.561	.095
	Both	57	4.09	1.123	.149
2.6.2 Performance monitored against KPIs	Outsourced	33	4.52	.619	.108
	Both	56	4.07	1.189	.159
2.6.3 Supplier relationships are governed by SLAs	Outsourced	34	4.62	.697	.120
	Both	59	4.31	.895	.117
2.6.4 Fewer suppliers and long term relationships	Outsourced	32	4.56	.619	.109
	Both	58	4.00	1.139	.150

Table 6-55: Missing Values for Relationship Practice Statements

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
2.6.1 Documented agreement with client * 1.6 Service Type	176	85.0%	31	15.0%	207	100.0%
2.6.2 Performance monitored against KPIs * 1.6 Service Type	185	89.4%	22	10.6%	207	100.0%
2.6.3 Supplier relationships are governed by SLAs * 1.6 Service Type	198	95.7%	9	4.3%	207	100.0%
2.6.4 Fewer suppliers and long term relationships * 1.6 Service Type	192	92.8%	15	7.2%	207	100.0%

An analysis of result 4 above was also undertaken. Table 6-56 includes the results of "Fisher's Exact Test" for Significance. This statistic was included in the Mann-Whitney test between two Independent Samples.

Table 6-56: Fisher's Significance Test for Province vs. Quality Practice Statements

	2.1 Leadership_ Practices	2.2 Customer_Pr actices	2.3 HR_ Practices	2.4 Operational_ Practices	2.5 Infrastucture Practices_	2.6 Relationship Practices_	2A. Core_Quality Practices_	2. Quality_ Practices
GAU vs. WC	.134	.900	.078	.171	.842	.184	.224	.191
GAU vs. KZN	.002	.003	.000	.000	.001	.000	.000	.000
GAU vs. Other	.092	.075	.019	.109	.142	.790	.113	.064
WC vs. KZN	.168	.029	.042	.050	.013	.017	.026	.029
WC vs. Other	.312	.133	.092	.285	.185	.566	.239	.256
KZN vs. Other	.777	.463	.445	.776	.754	.229	.980	1.000

The results show a significant difference ($p < .05$) between Gauteng and KZN for all Quality Practices, between Gauteng and Other provinces for HR Practices and between Western Cape and KZN for five of six Quality Practices plus the second and third order practice variables. Tables 6-57 and 6-58 shows that KZN reports higher levels of implementing Quality Practices (higher mean values) together with more consistent replies (lower standard deviation).

Table 6-57: Statistics for Gauteng and KZN vs. Quality Practices

	1.5 Province	N	Mean	Std. Deviation	Std. Error Mean
2.1 Leadership_Practices	Gauteng	124	4.0116	.96477	.08664
	KZN	36	4.4583	.83796	.13966
2.2 Customer_Practices	Gauteng	123	3.8490	.73512	.06628
	KZN	36	4.2460	.54394	.09066
2.3 HR_Practices	Gauteng	124	3.9353	.80817	.07258
	KZN	36	4.5102	.58199	.09700
2.4 Operational_Practices	Gauteng	123	3.9368	.84306	.07602
	KZN	36	4.4784	.60906	.10151
2.5 Infrastucture_Practices	Gauteng	123	3.8617	.79864	.07201
	KZN	36	4.3170	.61620	.10270
2.6 Relationship_Practices	Gauteng	122	4.0335	.88657	.08027
	KZN	35	4.6286	.56351	.09525
2A. Core_Quality_Practices	Gauteng	124	3.9191	.73645	.06614
	KZN	36	4.4339	.49559	.08260
2. Quality_Practices	Gauteng	124	3.9357	.74025	.06648
	KZN	36	4.4378	.52724	.08787

Table 6-58: Statistics for Western Cape and KZN vs. Quality Practices

	1.5 Province	N	Mean	Std. Deviation	Std. Error Mean
2.2 Customer_Practices	Western Cape	43	3.8640	.81408	.12415
	KZN	36	4.2460	.54394	.09066
2.3 HR_Practices	Western Cape	43	4.1804	.78676	.11998
	KZN	36	4.5102	.58199	.09700
2.4 Operational_Practices	Western Cape	43	4.1106	.90350	.13778
	KZN	36	4.4784	.60906	.10151
2.5 Infrastucture_Practices	Western Cape	43	3.8912	.79455	.12117
	KZN	36	4.3170	.61620	.10270
2.6 Relationship_Practices	Western Cape	41	4.1890	.93838	.14655
	KZN	35	4.6286	.56351	.09525
2A. Core_Quality_Practices	Western Cape	43	4.0421	.79154	.12071
	KZN	36	4.4339	.49559	.08260
2. Quality_Practices	Western Cape	43	4.0715	.79526	.12128
	KZN	36	4.4378	.52724	.08787

6.8.3 HYPOTHESIS 2 – DEPLOYMENT OF QUALITY PRACTICES 2

Hypothesis 2 is based on Research Question 2 i.e.

Are quality management practices deployed in unison or as individual practices?

and reads as follows:

> ***Hypothesis 2 (H2): The South African Contact Centre Industry deploys quality management practices in unison.***

This hypothesis was tested via bivariate correlations of the quality practice variables. Significance of the correlations was also considered. Table 6-59 includes the results.

Table 6-59: Bivariate Correlation of Quality Practice Variables

		2.1 Leadership_Practices	2.2 Customer_Practices	2.3 HR_Practices	2.4 Operational_Practices	2.5 Infrastructure_Practices	2.6 Relationship_Practices	2A. Core_Quality_Practices	2. Quality_Practices
2.1 Leadership_Practices	Corr. Coefficient	1.000							
	Sig. (2-tailed)	.							
	N	207							
2.2 Customer_Practices	Corr. Coefficient	.703**	1.000						
	Sig. (2-tailed)	.000	.						
	N	206	206						
2.3 HR_Practices	Corr. Coefficient	.745**	.747**	1.000					
	Sig. (2-tailed)	.000	.000	.					
	N	207	206	207					
2.4 Operational_Practices	Corr. Coefficient	.650**	.722**	.847**	1.000				
	Sig. (2-tailed)	.000	.000	.000	.				
	N	206	205	206	206				
2.5 Infrastucture_Practices	Corr. Coefficient	.675**	.754**	.805**	.796**	1.000			
	Sig. (2-tailed)	.000	.000	.000	.000	.			
	N	206	205	206	206	206			
2.6 Relationship_Practices	Corr. Coefficient	.577**	.601**	.689**	.693**	.717**	1.000		
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.		
	N	201	200	201	200	200	201		
2A. Core_Quality_Practices	Corr. Coefficient	.749**	.852**	.920**	.912**	.916**	.829**	1.000	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	
	N	207	206	207	206	206	201	207	
2. Quality_Practices	Corr. Coefficient	.828**	.857**	.924**	.894**	.906**	.809**	.990**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.
	N	207	206	207	206	206	201	207	207

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

The positive and significant correlations among Quality Practice variables indicate that quality practices are deployed in unison thus supporting Hypothesis 2.

This result is congruent with the result obtained for the "Management Knowledge" statements included as a contingency factor. As shown visually in Figure 6-9 together with Table 6-60, South African contact centre managers are well familiar with quality management practices. Respondents have also indicated that managers are familiar with the SANS 990 domestic standards that were released in 2008 and to a lesser extent familiar with the new contact centre ISO standards released in 2017.

These standards, similar to other sources covered in the literature advocate quality systems that include a wide range of quality practices as opposed to isolated initiatives.

Figure 6-9: Responses for Management Knowledge Statements

Table 6-60: Mean values for Management Knowledge Statements

	Question	Count	Score
1.	Managers are familiar with Quality Practices	207	4.073
2.	Managers are familiar with SA Call Centre Standards (SAN990 : 2009)	207	3.502
3.	Managers are familiar with ISO Call Centre Standards (ISO 18295 : 2017)	207	3.382
		Average	**3.652**

6.8.4 HYPOTHESIS 3 – LEADERSHIP PRACTICES AND CORE PRACTICES

Hypothesis 3 is based on Research Question 3 i.e.

How do Leadership Quality Practices influence the deployment of Core Quality Practices?

and reads as follows:

> ***Hypothesis 3 (H3): Leadership Quality Practices have a positive and significant impact on the deployment Core Quality Practices.***

The strength and direction of the relationship between Leadership Practices and each Core Quality Practice has been determined by performing a Linear Regression with the Core Quality Practice as the dependent variable and Leadership Practices as the independent variable.

The regression analysis for each pair includes the following:

Step1. Checking that the conditions for regression are met by examining the following Plots:

- Histogram – Check for normal distribution.
- P-P Plot – Check that points fall on diagonal.
- Scatterplot – check for even distribution of points along each axis.

Step 2. Check Collinearity Statistics

The Coefficients table generated in the regression analysis includes the collinearity statistics. Here Tolerance should be closer to 1 and VIF should be < 10.

Step 3. Check ANOVA table for significance of the relationship between variables.

The relationship is considered significant if the significance value is < 0.05.

Step 4. Check the Model Summary for the R-Square value which shows the % variance in the dependent variable explained by the independent variable.

Step 5. Read the path coefficient from the Coefficients Table in the "Standardised Beta Coefficient" column in conjunction with the corresponding significance value.

While the Step 1 normality checks reveal non-normal distribution for the regression variables, the large sample size affords the distributions the benefits of the "Central Limit Theorem" which satisfies the pre-conditions for linear regression.

The results for the regression analysis of Leadership Practices and each of the Core Quality Practices are summarised in Table 6-61 with the full details included in Appendix M.

Table 6-61: Results of Hypothesis 3 Regression Analyses

Regression Variables		Standardized Coefficients		Collinearity Stats		ANOVA	R^2
Independent Variable	**Dependent Variable**	**Beta**	**Sig**	**Tolerance**	**VIF**	**Sig**	
Leadership Practices	Customer Practices	.726	.000	1.000	1.000	.000	.528
Leadership Practices	Human Resource Practices	.776	.000	1.000	1.000	.000	.603
Leadership Practices	Operational Practices	.698	.000	1.000	1.000	.000	.487
Leadership Practices	Infrastructure Practices	.714	.000	1.000	1.000	.000	.509
Leadership Practices	Relationship Practices	.624	.000	1.000	1.000	.000	.389

The results show a strong, positive and significant ($p < .001$) relationship between Leadership Practices and each of the Core Quality Practices thus supporting Hypothesis 3. The Path Diagram that relates to Hypothesis 3 is shown in Figure 6-10.

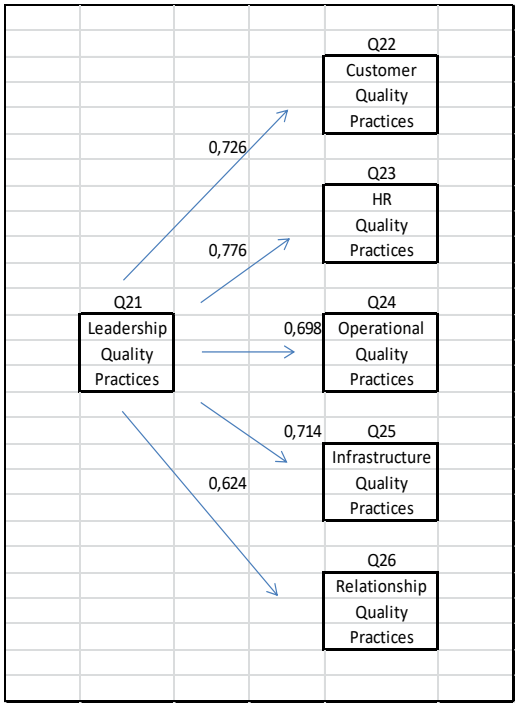


Figure 6-10: Path Diagram related to Hypothesis 3

Given the single direct paths between Leadership Practices and the Core Quality Practices with no indirect paths, the Path Analysis procedure merely compares the implied bivariate correlations between the pairs and the path coefficients. The results are shown in Table 6-62.

Table 6-62: Hypothesis 3 Comparisons of Paths Coefficients and Implied Correlations

Dependent Variable (j)	**Independent Variable (i)**	**Direct Effect D_{ji}**	**Indirect Effect N_{ji}**	**Total Effect $D_{ji} + N_{ji}$**	**Implied Correlation**	**Unexplained Effect U_{ji}**
Customer Practices	Leadership Practices	.726	0	.726	.703	-0.023
Human Resource Practices	Leadership Practices	.776	0	.776	.745	-0.031
Operational Practices	Leadership Practices	.698	0	.698	.650	-0.048
Infrastructure Practices	Leadership Practices	.714	0	.714	.675	-0.039
Relationship Practices	Leadership Practices	.624	0	.624	.577	-0.047

The results show that the path coefficients and implied correlations are very closely related hence negligible unexplained effects.

6.8.5 HYPOTHESIS 4 – QUALITY PRACTICES AND QUALITY PERFORMANCE

Hypothesis 4 is based on Research Question 4 i.e.

How do Quality Practices impact on Quality Performance?

and reads as follows:

> ***Hypothesis 4 (H4): Quality Practices have a positive and significant impact on Quality Performance.***

A regression analysis similar to that performed for Hypothesis 3 was performed between each Core Quality Practice and the corresponding Quality Performance variable. The regression results are shown in Table 6-63. The details of the regression analyses included in Appendix N.

Table 6-63: Results of Hypothesis 4 Regression Analyses

Regression Variables		Standardized Coefficients		Collinearity Stats		ANOVA	R^2
Independent Variable	**Dependent Variable**	**Beta**	**Sig**	**Tolerance**	**VIF**	**Sig**	
Customer Practices	Customer Performance	.792	.000	1.000	1.000	.000	.628
Human Resource Practices	Human Resource Performance	.781	.000	1.000	1.000	.000	.610
Operational Practices	Operational Performance	.723	.000	1.000	1.000	.000	.523
Infrastructure Practices	Infrastructure Performance	.746	.000	1.000	1.000	.000	.556
Relationship Practices	Relationship Performance	.672	.000	1.000	1.000	.000	.452

The results show a strong, positive and significant ($p < .001$) relationship between the Core Quality Practice and Quality Performance variables. The Hypothesis 4 Path Diagram is shown in Figure 6-11.

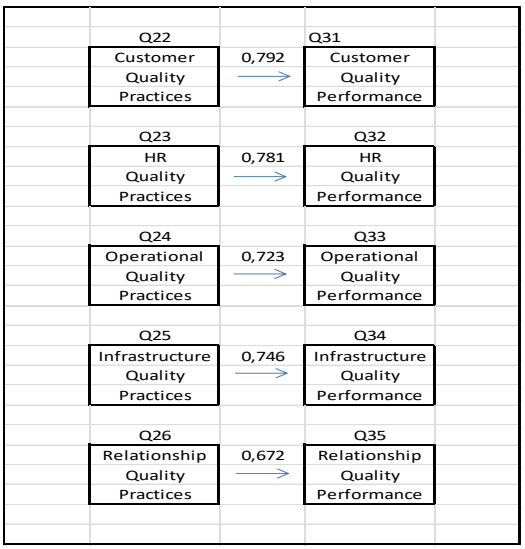


Figure 6-11: Path Diagram related to Hypothesis 4

The indirect effect of Leadership Practices on Quality Performance variables was calculated by multiplying the direct coefficients between (Leadership Practices and the Core Quality Practice in Figure 6-10) and (Core Quality Practice and Quality Performance in Figure 6-11). The results are shown in Table 6-64 where the indirect effects range from .419 to .606. This implies that Leadership Practices have a strong and positive impact on Quality Performance. The direct and indirect impact of Quality Practices on Quality Performance are strong and positive **thus supporting Hypothesis 4.**

The results of the regression analyses and calculation of the indirect effects, together with the implied correlations (as generated in during the Criterion Validity checks -Table 6-42) were used as inputs to calculate the "Unexplained Effects". This calculation was performed via the Path Analysis equation explained in paragraph 5.11.1. i.e.

$$U_{ji} = r_{ji} - (D_{ji} + N_{ji})$$

The results of the path analyses are shown in Table 6-64. The resulting "Unexplained Effects" (U_{ji}) for all relationships tested are below or approximately equal to the 0.1 threshold indicating a **good model fit**. The only relationship that show a relatively higher value for U_{ji} is the indirect relationship between Leadership Practices and Relationship Performance (U_{ji} = .241). This result can be expected given that Relation Performance is a fairly broad construct that may be influenced by factors not considered in this study.

Table 6-64: Decomposition of Path Coefficients for Quality Performance Variables

Dependent Variable (j)	Independent Variable (i)	Direct Effect D_{ji}	Indirect Effect N_{ji}	Total Effect $D_{ji} + N_{ji}$	Implied Correlation	Unexplained Effect U_{ji}
Customer Performance	Customer Practices	.792	0	.792	.767	-.025
	Leadership Practices	0	.726x.792 = .575	.575	.696	.121
Human Resource Performance	Human Resource Practices	.781	0	.781	.776	-.005
	Leadership Practices	0	.776x.781 = .606	.606	.715	.109
Operational Performance	Operational Practices	.723	0	.723	.727	.004
	Leadership Practices	0	.698x.723 = .505	.505	.629	.124
Infrastructure Performance	Infrastructure Practices	.746	0	.746	.682	-.064
	Leadership Practices	0	.714x.746 = .533	.533	.553	.02
Relationship Performance	Relationship Practices	.672	0	.672	.654	-.018
	Leadership Practices	0	.624x.672 = .419	.419	.660	.241

6.8.6 HYPOTHESIS 5 – QUALITY PRACTICES AND QUALITY SYSTEM PERFORMANCE

Hypothesis 5 is based on Research Question 5 i.e.

How do Quality Practices impact on Quality System Performance?

and reads as follows:

> ***Hypothesis 5 (H5): Quality Practices have a positive and significant impact on Quality System Performance.***

A regression analysis similar to that performed for Hypothesis 3 was performed between Quality System Performance (dependent variable) and the five Quality Performance variables (independent variables). The regression results are shown in Table 6-65. The details of the regression analyses included in Appendix P.

Table 6-65: Results of Hypothesis 5 Regression Analyses

Regression Variables		Stand. Coeffs		Collinearity Stats		ANOVA	R^2
Independent Variable	**Dependent Variable**	**Beta**	**Sig**	**Tolerance**	**VIF**	**Sig**	
Customer Performance	Quality System Performance	.788	.000	1.000	1.000	.000	.620
Human Resource Performance	Quality System Performance	.852	.000	1.000	1.000	.000	.726
Operational Performance	Quality System Performance	.854	.000	1.000	1.000	.000	.730
Infrastructure Performance	Quality System Performance	.716	.000	1.000	1.000	.000	.513
Relationship Performance	Quality System Performance	.860	.000	1.000	1.000	.000	.740

The results show a strong, positive and significant ($p < .001$) relationship between Quality Performance and Quality System Performance. The Path Diagram is shown in Figure 6-12.

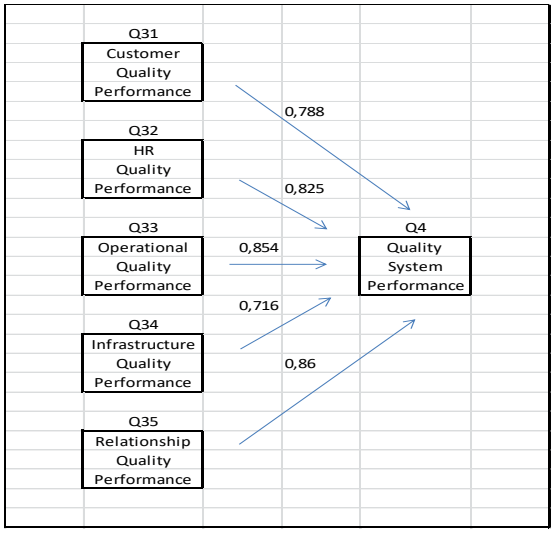


Figure 6-12: Path Diagram related to Hypothesis 5

The indirect effect of Quality Practices on Quality System Performance was calculated by multiplying the direct coefficients between (Leadership Practices, Core Quality Practices and Quality Performance variables). The results are shown in Table 6-66. The indirect effects of Core Quality Practices on Quality System Performance range from .534 to .644 and the indirect impact of Leadership Practices on Quality System Performance range from .361 to .500. All indirect effects of Quality Practices on Quality System Performance, transmitted through Quality Performance, are strong and positive **thus supporting Hypothesis 5**.

Table 6-66 also reveals a relatively **good model fit** with the "Unexplained Effect" ranging from -.031 to .016 for the Quality Performance variables, .041 to .243 for Quality Practice variable and .211 to .350 for Leadership Practices. The increasing tendency of the "Unexplained Effect" is expected as the degree of separation between the variables increases.

Table 6-66: Decomposition of Path Coefficients for Quality System Performance

Dependent Variable (j)	Independent Variable (i)	Direct Effect D_{ji}	Indirect Effect N_{ji}	Total Effect $D_{ji} + N_{ji}$	Implied Correlation	Unexplained Effect U_{ji}
Quality System Performance	Customer Performance	.788	0	.788	.785	-.003
	Customer Practices	0	.792x.788 =.624	.624	.737	.113
	Leadership Practices	0	.726x.792x.788 = .453	.453	.711	.258
Quality System Performance	Human Resource Performance	.825	0	.825	.841	.016
	Human Res. Practices	0	.781x.825 .644	.644	.769	.125
	Leadership Practices	0	.776x.781x.825 = .500	.500	.711	.211
Quality System Performance	Operational Performance	.854	0	.854	.841	-.013
	Operational Practices	0	.723x.854 = .617	.617	.731	.114
	Leadership Practices	0	.698x.723x.854 = .431	.431	.711	.280
Quality System Performance	Infrastructure Performance	.716	0	.716	.685	-.031
	Infrastructure Practices	0	.746x.716 = .534	.534	.768	.243
	Leadership Practices	0	.714x.746x.716 = .381	.381	.711	.330
Quality System Performance	Relationship Performance	.860	0	.860	.852	-.008
	Relationship Practices	0	.672x.860 = .578	.578	.619	.041
	Leadership Practices	0	.624x.672x.860 = .361	.361	.711	.350

6.8.7 HYPOTHESIS 6 – QUALITY PRACTICES AND BUSINESS PERFORMANCE

Hypothesis 6 is based on Research Question 6 i.e.

How do Quality Practices impact on Business Performance?

and reads as follows:

> ***Hypothesis 6 (H6): Quality Practices have a positive and significant impact on Business Performance.***

A regression analysis similar to that performed for Hypothesis 3 was performed between Business Performance (dependent variable) and Quality System Performance (independent variables). The regression results are shown in Table 6-67. The details of the regression analyses included in Appendix P.

Table 6-67: Results of Hypothesis 6 Regression Analyses

Regression Variables		**Standardized Coefficients**		**Collinearity Stats**		**ANOVA**	**R^2**
Independent Variable	**Dependent Variable**	**Beta**	**Sig**	**Tolerance**	**VIF**	**Sig**	
Quality System Performance	Business Performance	.806	.000	1.000	1.000	.000	.650

The results shows a strong, positive and significant ($p < .001$) relationship between Quality System Performance and Business Performance. The Path Diagram that relates to Hypothesis 6 is shown in Figure 6-13.

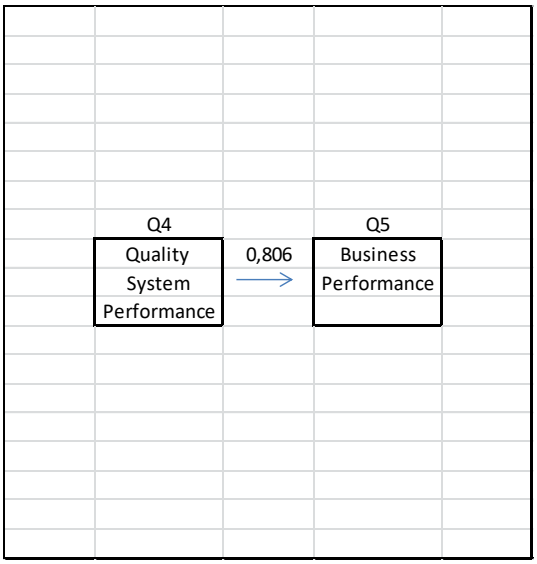


Figure 6-13: Path Diagram related to Hypothesis 6

The indirect effect of the Quality Practices variables on Business Performance was calculated by multiplying the direct coefficients between (Leadership Practices, Core Quality Practices, Quality Performance and Quality System Performance variables). The results of the path analyses are shown in Table 6-68. Analysis of the indirect impact of Quality Practices on Business Performance, transmitted through Quality Performance and Quality System Performance, shows strong and positive relationships **thus supporting Hypothesis 6**.

Table 6-68: Decomposition of Path Coefficients for Business Performance

Dependent Variable (j)	Independent Variable (i)	Direct Effect D_{ji}	Indirect Effect N_{ji}	Total Effect $D_{ji} + N_{ji}$	Implied Correlation	Unexplained Effect U_{ji}
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Customer Performance	0	.788x.806 = 635	.635	.704	.069
	Customer Practices	0	.792x.788x.806=503	.503	.616	.113
	Leadership Practices	0	.726x.792x.788x.806 = 365	.365	.580	.215
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Human Resource Performance	0	.825x.806 = 687	.687	.720	.015
	Human Resource Practices	0	.781x.825x.806 = 536	.536	.683	.120
	Leadership Practices	0	.776x.781x.825x.806 = 416	.416	.580	.164
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Operational Perf.	0	.854x.806 = 688	.688	.769	.081
	Operational Practices	0	.723x.854x.806 = .498	.498	.692	.194
	Leadership Practices	0	.698x.723x.854x.806 = .347	.347	.580	.206
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Infrastructure Perf.	0	.716x.806 = .577	.577	.611	.034
	Infrastructure Practices	0	.746x.716x.806 = .431	.431	.665	.234
	Leadership Practices	0	.714x.746x.716x.806 = .307	.307	.580	.273
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Relationship Performance	0	.860x.806 = .693	.693	.770	.077
	Relationship Practices	0	.672x.860x.806 = .466	.466	.610	.144
	Leadership Practices	0	.624x.672x.860x.806 = .291	.291	.580	.289

The results show a relatively **good model fit** with the highest "Unexplained Effect" occurring between Leadership Practices and Business Performance (ranging from -.164 to .289). This result is expected given the 4 levels of separation between the variables.

6.8.8 CONSOLIDATING THE PRACTICE / PERFORMANCE PATH MODEL

Figure 6-14 consolidates the path diagrams shown in Figures 6-10 to 6-13 and represents the completed Practice / Performance Model proposed in Figure 4-1.

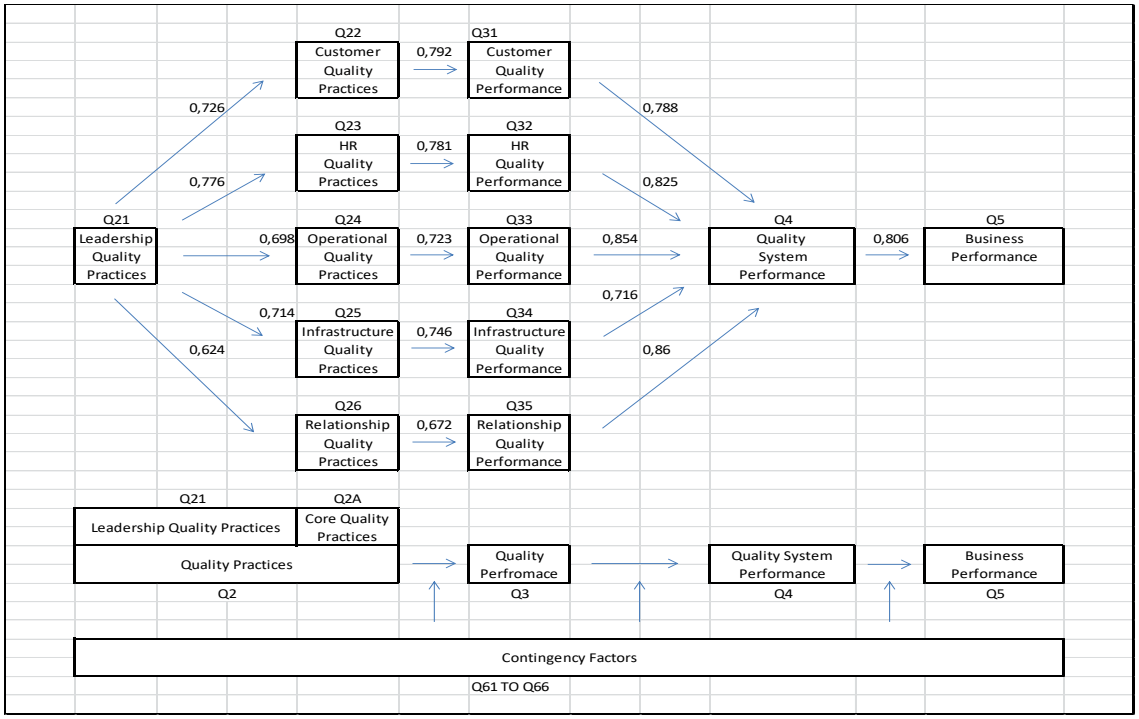


Figure 6-14: Practice / Performance Model including Path Coefficients

The populated model summarises the results of tests performed for Hypotheses 3 to 6. The findings may be stated as follows:

1. A strong, positive and significant ($p < .001$) relationship exists between Leadership Practices and Core Quality Practices thus supporting Hypothesis 3.
2. The strong, positive and significant ($p < .001$) direct relationships between Core Quality Practices and Quality Performance together with the resultant strong and positive indirect relationships between Leadership Practices and Quality Performance supports Hypothesis 4.
3. The strong, positive and significant ($p < .001$) direct relationships between the Quality Performance and Quality System Performance results in the strong and positive indirect relationships between Quality Practices and Quality System Performance thus supporting Hypothesis 5.
4. The strong, positive and significant ($p < .001$) direct relationship between Quality System Performance and Business Performance together with the strong and positive direct relationships between the Quality Performance and Quality System Performance results in the strong and positive indirect relationships between Quality Practices and Business Performance thus supporting Hypothesis 6.

6.8.9 HYPOTHESIS 7 – SYNERGY AMONG QUALITY PRACTICES

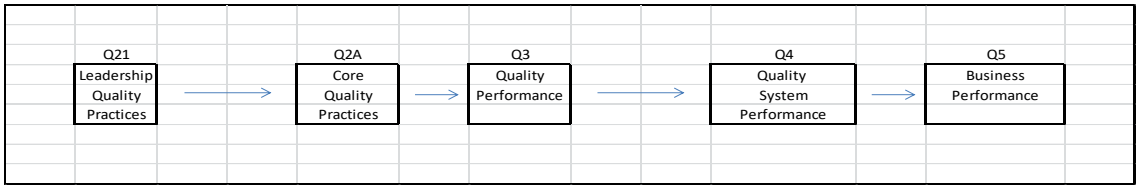
Hypothesis 7 is based on Research Question 7 i.e.

Is there synergistic value in the deployment of Quality Practices?

and reads as follows:

Hypothesis 7 (H7): Synergistic value exists in the deployment of Quality Practices.

In order to test this hypothesis, an alternate model was generated and compared to the original model conceived in Figure 4-1. This alternate model is depicted in Figure 5-5 and reproduced here for convenient reference



In this model higher order variables are utilised to represent a consolidated Quality Practice variable (Core Quality Practices - Q2A) and a consolidated Quality Performance variable (Q3).

The measure of "model fit" i.e. the value of the "Unexplained Effect" (U) has been calculated for this alternate model and then compared to the 'U' already calculated under Hypothesis 6 tests. A better model fit of the alternate model indicates that synergistic value does exists in the deployment of quality practices.

The regression results are included in Table 6-69 and the detailed regression analysis is included in Appendix Q.

Table 6-69: Results of Regression Analyses for Alternate Model

Regression Variables		**Standardized Coefficients**		**Collinearity Stats**		**ANOVA**	**R^2**
Independent Variable	**Dependent Variable**	**Beta**	**Sig**	**Tolerance**	**VIF**	**Sig**	
Leadership Practices	Core Quality Practices	.776	.000	1.000	1.000	.000	.602
Core Quality Practices	Quality Performance	.866	.000	1.000	1.000	.000	.750
Quality Performance	Quality System Performance	.902	.000	1.000	1.000	.000	.814
Quality System Performance	Business Performance	.806	.000	1.000	1.000	.000	.650

The regression analyses show strong, positive and significant ($p < .001$) relationships between the independent and dependent variables. The path coefficients are used as inputs in the path analysis that follows.

A further input required for the path analysis is the implied correlations among the variables. The NPar Correlations are shown in Table 6-70.

Table 6-70: Correlation of Variables utilised in the Alternate Model

			2.1 Leadership_Practices	2A. Core_Quality_Practices	3. Quality_Performance	4. Quality_System_Performance	5. Business_Performance
Spearman's rho	2.1 Leadership_Practices	Correlation Coefficient	1.000				
		Sig. (2-tailed)	.				
		N	207				
	2A. Core_Quality_Practices	Correlation Coefficient	.749**	1.000			
		Sig. (2-tailed)	.000	.			
		N	207	207			
	3. Quality_Performance	Correlation Coefficient	.729**	.851**	1.000		
		Sig. (2-tailed)	.000	.000	.		
		N	207	207	207		
	4. Quality_System_Performance	Correlation Coefficient	.711**	.805**	.887**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.	
		N	206	206	206	206	
	5. Business_Performance	Correlation Coefficient	.580**	.722**	.782**	.777**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	203	203	203	203	203

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

The results of the correlations show positive and significant relationships between the variable in this model. Table 6-71 shows the path analysis, the results of which are compared to the analysis conducted for Hypothesis 6 (Table 6-66).

Table 6-71: Decomposition of Path Coefficients for Business Performance (Alt Model)

Dependent Variable (j)	Independent Variable (i)	Direct Effect D_{ji}	Indirect Effect N_{ji}	Total Effect $D_{ji} + N_{ji}$	Implied Correlation	Unexplained Effect U_{ji}
Business Performance	Quality System Performance	.806	0	.806	.777	-.209
	Quality Performance	0	.902x.806 = .727	.727	.782	.055
	Core Quality Practices	0	.866x.902x.806=.630	.630	.722	.092
	Leadership Practices	0	.776x.866x.902x.806 = .489	.489	.580	.091

In this alternate model the "Unexplained Effect" (U_{ji}) between Leadership Practices and Business Performance (.091) is lower than those found in Table 6-66. This result indicates that the alternate model provides a better fit for the data.

The interpretation of the result is that quality practices, when viewed as a consolidated system explains the observed data more adequately than individual quality practices. Synergistic value therefore does exist in the deployment of quality practices hence **Hypothesis 7 is supported**.

6.8.10 HYPOTHESIS 8 – CONTINGENCY FACTORS

Hypothesis 8 is based on Research Question 8 i.e.

How do contingency factors moderate the relationship between Quality Practices and Performance?

and reads as follows:

Hypothesis 8 (H8): Contingency factors have a moderating impact on the relationship between Quality Practices and Performance.

This hypothesis was tested via partial correlations. Zero-order and partial correlations were analysed to assess the impact of contingency factors on the practice-performance relationships.

The moderating impact of the contingency factors on the following relationships was assessed:

1. The relationship between Quality Practices and Quality Performance.

2. The Relationship between Quality Practices and Quality System Performance

3. The relationship between Quality Practices and Business Performance.

For each relationship the zero-order correlations were compared to the partial correlations calculated by controlling for each of the contingency variables.

Table 5-12 included the contingency variables that were considered. These include:

Variable Number	Variable Name and Elaboration
1	Management Knowledge (Extent of knowledge of quality practices and standards)
2	Industry Rivalry (Extent of competition in the industry)
3	External Demand for Quality (Requirements from Clients, Industry Bodies, Government)
4	Culture (Degree of openness and flexibility in an organisation)
5	Organisational Structure (The number of reporting levels in an organisation)
6	Environmental Uncertainty (degree of volatility in the business environment)

The results of the partial correlations for these variables are included in Table 6-72.

Table 6-72: Zero-Order and Partial Correlations for Contingency Variables

Control Variable		Quality Performance			Quality System Performance			Business Performance		
		Zero Order	Partial	Delta	Zero Order	Partial	Delta	Zero Order	Partial	Delta
Management Knowledge	**r**	**.874**	**.768**	**.106**	**.809**	**.648**	**.161**	**.723**	**.502**	**.221**
	sig	.000	.000		.000	.000		.000	.000	
Industry Rivalry	**r**	**.874**	**.834**	**.040**	**.809**	**.754**	**.055**	**.723**	**.639**	**.084**
	sig	.000	.000		.000	.000		.000	.000	
External Demand for Quality	**r**	**.874**	**.778**	**.096**	**.809**	**.693**	**.116**	**.723**	**.516**	**.207**
	sig	.000	.000		.000	.000		.000	.000	
Culture	**r**	**.874**	**.801**	**.073**	**.809**	**.721**	**.088**	**.723**	**.575**	**.148**
	sig	.000	.000		.000	.000		.000	.000	
Organisational Structure	**r**	**.874**	**.873**	**.001**	**.809**	**.807**	**.002**	**.723**	**.714**	**.009**
	sig	.000	.000		.000	.000		.000	.000	
Environmental Uncertainty	**r**	**.874**	**.861**	**.013**	**.809**	**.793**	**.016**	**.723**	**.699**	**.024**
	sig	.000	.000		.000	.000		.000	.000	

The top 3 highest impacts on each of the performance measurements have been highlighted. The results show that ‘Management Knowledge’ has the highest impact on all measures followed by ‘External Demand for Quality’ followed by ‘Culture’.

The results will be discussed in Chapter 7.

Partial correlations were also performed by controlling for certain demographic variables. These variables (as included in Table 5-13) are:

Variable Number	Variable Name and Elaboration
1	Province (Gauteng / Western Cape / KZN / Other)
2	Service Type (Captive / Outsourced / Both)
3	Markets Served (Domestic / International / Both)
4	Ownership (Mostly SA Owned / Mostly Foreign Owned)
5	Size (Number of Seats) (0 - 20, 21 - 70, 71 – 200, 200 +)
6	Age (Years) (0 – 2, 2 – 5, 5+)

The results of the Partial Correlations for these variables are included in Table 6-73.

Table 6-73: Zero-Order and Partial Correlations for Demographic Variables

Control Variable		Quality Performance			Quality System Performance			Business Performance		
		Zero Order	Partial	Delta	Zero Order	Partial	Delta	Zero Order	Partial	Delta
Province	**r**	**.874**	**.868**	**.006**	**.809**	**.800**	**.009**	**.723**	**.716**	**.007**
	sig	.000	.000		.000	.000		.000	.000	
Service Type	**r**	**.874**	**.873**	**.001**	**.809**	**.808**	**.001**	**.723**	**.720**	**.003**
	sig	.000	.000		.000	.000		.000	.000	
Markets Served	**r**	**.874**	**.873**	**.001**	**.809**	**.808**	**.001**	**.723**	**.721**	**.002**
	sig	.000	.000		.000	.000		.000	.000	
Ownership	**r**	**.874**	**.872**	**.002**	**.809**	**.810**	**-.001**	**.723**	**.716**	**.007**
	sig	.000	.000		.000	.000		.000	.000	
Size	**r**	**.874**	**.874**	**0**	**.809**	**.809**	**0**	**.723**	**.734**	**-.011**
	sig	.000	.000		.000	.000		.000	.000	
Age	**r**	**.874**	**.874**	**0**	**.809**	**.810**	**-.001**	**.723**	**.726**	**-.003**
	sig	.000	.000		.000	.000		.000	.000	
	sig	.000	.000		.000	.000		.000	.000	

The results show that the demographic variables have a negligible impact on the relationships between Quality Practices and Performance measures.

6.9 CHAPTER SUMMARY

This chapter covered the presentation of the study results, including the demographic profile of the respondents, descriptive statistics for all variables, pre-checks for normality, bias and collinearity before presenting the results of the hypotheses testing. A data integrity analysis was included as a starting point.

The results presented in this chapter will be discussed in the next chapter in accordance with the outcomes of the study.

CHAPTER 7

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter discusses the main focus areas of the study. The research setting, problem statement, objectives and research questions are recapped as an entry point for the discussion that follows. While the main aim of the study is to develop a quality practice / performance model for the South African contact centre industry, the two key antecedent outcomes are discussed first. These are the development of a new quality management measurement instrument and the exploration of the extent of quality practice deployment in the industry. The discussion based on the quality practice / performance model covers the importance of top management commitment, the impact of quality practices on functional and organisational performance, synergistic value in the deployment of quality practices and the impact on business performance. Finally, the impact of contingency factors on the quality practice / performance relationships are discussed. The chapter concludes with a summary and implications of the outcomes, the study significance and limitations, recommendations and possible directions for future related work.

7.2 DISCUSSION

Against the background of South Africa's extreme youth unemployment problem, the country seeks to identify and support industries that may offer substantial solutions to the problem. The employment potential of the contact centre industry was recognised by the South African government as far back as 2004. By capitalising on comparative advantages, such as lower labour costs, South Africa has successfully claimed a place amongst the preferred international customer service destinations. While lower costs remain a key driver behind the outsourcing of services to offshore destinations like South Africa, a shift in focus towards the 'quality of service' is increasingly featured in outsourcing decisions. It follows that, in order to maintain the competitive momentum amidst intense international rivalry, it is imperative that contact centre managers understand the relationship between quality practices and the impact on operational and business performance, hence the problem statement:

"How do quality management practices impact on operational and business performance in the South African Contact Centre Industry?"

The literature shows that the relationships between quality practices and business performance have been investigated across various industry sectors and in various locations globally from as far back as the early 90s. However, such relationships have never before been investigated in the

contact centre environment and specifically not in the South African context. The primary objective of this study was to address this gap by developing a model that reveals the nature of the Quality Practice / Performance relationships together with the moderating impact of contingency factors. It is expected that the model will serve as a valuable, context-specific, industry reference while academically contributing towards the development of quality management theory.

This problem was addressed by aiming to achieve the following objectives:

Objective 1: Explore the deployment of quality management practices in the South African Contact Centre Industry.

This objective was met by answering the following research questions:

Research Question 1: To what extent are quality practices deployed in the South African contact centre industry?

Research Question 2: Are quality management practices deployed in unison or as individual practices?

Objective 2: Develop a Quality Practice / Performance Model for the South African Contact Centre Industry.

This objective was met by answering the following research questions:

Research Question 3: How do Leadership Quality Practices influence the deployment of Core Quality Practices?

Research Question 4: How do Quality Practices impact on Quality Performance?

Research Question 5: How do Quality Practices impact on Quality System Performance?

Research Question 6: How do Quality Practices impact on Business Performance?

Research Question 7: Is there synergistic value in the deployment of Quality Practices?

Objective 3: Assess the moderating effect of contingency factors on the relationship between quality practices and performance.

This objective was met by answering the following research question:

Research Question 8: How do contingency factors moderate the relationship between quality practices and performance?

Elements of the discussion that follow are aligned with the key outputs of this study. These include:

- Development of a new quality management measurement instrument for the contact centre industry
- Empirical confirmation of the deployment of quality practices in the South African contact centre industry (Research Question 1)
- Development of a quality management practice / performance model for the industry that illustrates:
    - The influence of leadership on the deployment of quality practices (Research Question 3)
    - The impact of quality practices on quality and system performance together with synergistic effect of quality practices (Research Questions 4,5,2 & 7)
    - The impact of quality practices on business performance (Research Question 6)
- The impact of contingency factors on the quality practice / performance relationships (Research Question 8)

An elaboration of each of these discussion areas follow.

7.2.1 A NEW QUALITY MANAGEMENT MEASUREMENT INSTRUMENT

The literature review revealed that while the quality practice / performance relationships have been investigated in various industries and across various locations globally, no such research has been conducted in the contact centre industry and specifically not in the South African context. **Antecedent to addressing this gap required the development of a new, industry-relevant quality management measurement instrument.**

The quality practice, performance and contingency dimensions of the measurement instrument were derived from a wide range of literature sources. The search for definition of the constructs began with generic prescriptive literature that included inputs from early prominent authors and recognised international quality awards criteria. Academic literature, largely based on prescriptive literature provided further definition of constructs together with suggested measurement scales for each construct in an effort to establish the validity and reliability of quality management measurement instruments. Finally, industry-specific practice literature in the form of international and domestic quality management standards and prominent industry reports were consulted to ensure that the constructs were current, relevant and measurable.

The first four decades of Quality Management literature (approx. 1950 to 1990) focused almost exclusively on quality management practice (prescriptive literature) developed by authors who worked either as consultants, researchers or managers across various organisations. The most prominent of these authors include Deming (1981, 1982, 1986), Juran (1986, 1970) and Crosby (1979), who prescribed steps for organisational quality improvement (Saraph et al, 1989). Deming initially approached quality management from a statistical point of view using control techniques in the manufacturing environment. His theories rest upon his system of 'profound knowledge', his 14 principles of quality management, and the Deming Cycle (Deming, 1981). Juran's work focused on management and technical aspects of quality and culminated in his three basic processes that is known as the 'Quality Trilogy' comprised of quality planning, quality control and quality improvement (Juran 1986). Juran asserted that in order to achieve a successful quality improvement project, the improvement tasks must be carefully planned and controlled. In contrast to Deming and Juran, Crosby emphasised the cultural and behavioural aspects of quality management. His work was based on what he called the 'four absolutes of quality improvement' leading his fourteen steps to creating quality.

At that time (in the 70s and 80s), given the relative novel field of quality management, early authors emphasised the philosophy of quality management and aimed to embed its practice in established company culture. **There is evidence of leadership quality practices, customer related practices, employee related practices, processes and relationship practices**. Researchers such as Anderson et al (1995) asserted that despite the impact that Deming's points have had on quality management practices, there was a lack of empirical support for the effectiveness of the method beyond anecdotal and case studies. The constructs underlying Deming's 14 points were extracted by a panel of experts that engaged in a three-round Delphi study. These constructs included visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfilment and customer satisfaction.

Broadly based on the prescripts of early authors in the field, Total Quality Management (TQM) emerged as a quality strategy that emphasises quality in every aspect of the business, aligned with business objectives and based on customer requirements. Considered a rather abstract philosophy, initially there was widespread confusion regarding its elements and the implementation thereof. The introduction of "Quality Award Models" offered a resolution to the problem (Hongyi et al, 2004). The US-based Malcolm Baldridge National Quality Awards (MBNQA) focus on leadership and results within a customer and market focused strategy, supported by information and analysis while the European Foundation for Quality Management (EFQM) Excellence Model asserts that processes are the means via which an organisation harnesses and releases the talents of its people to produce results. **These awards models together with the Deming Prize (Japan)**

all advocate leadership, customer focused planning, human resource development, streamlined processes and product design.

Evidence of business success based on the widespread adoption of prescripts advocated by prominent authors and quality awards models is mostly anecdotal as opposed to results obtained from rigorous testing (Powell, 1995). This predicament formed the departure point for most academic studies that aimed to empirically test the impact of quality management practices on business results.

The first known quality management empirical study was conducted by Garvin (1983). He developed a set of critical factors based on observations of air conditioner manufacturers in Japan and the United States. Later, Saraph et al. (1989) extracted 120 prescriptions that were consolidated into eight factors. Using generally accepted psychological principles they developed the first quality management measurement instrument that was shown to be both reliable and valid. The almost three decades that followed (until present day) saw innumerable authors investigate the impact of quality practices on business performance across various industries in various locations. A range of key studies was analysed in an effort to identify the common quality practice, performance and contingency dimensions utilised by researchers. As per the literature review, 29 quality practice dimensions were extracted from 27 studies. While at face-value there seems to be little consensus on the dimensionality of the quality construct – as evidenced in Flynn et al's (1994) seven core dimensions, Saraph et al's (1989) eight core dimensions or Powell's (1995) twelve variables – **there is a core focus that includes Leadership Involvement, Customer Focus, Human Resources, Supplier Management, Process and Information Management**. Regarding the measurement of performance, the empirical studies revealed the varied nature of the operational and business performance measures utilised. . While some studies considered financial performance measures (Powell, 1995; Das et al, 2000; Kaynak, 2003), others considered operational performance measures (Flynn et al, 1995; Dow et al. 1999) while others looked at customer-oriented measures (Anderson et al, 1995; Adam et al, 1997). Finally, Sousa and Voss (2008) noted that the appearance in the literature of the impact of contingency factors on the relationship between quality practices and performance was also accompanied by a wide variation in the selection of these factors. These included factors such as corporate support, management knowledge, complexity of products, organisational uncertainty, industry, country, culture, product diversity, amongst others (Sitkin et al, 1994; Ahire et al, 1996; Sousa & Voss, 2001).

The contributions of early authors, quality awards models and empirical studies produced generic quality practice, performance and contingency dimensions that could be applied across various industry types. However, the profiles of most studies indicate a definite manufacturing bias. This

is to be expected given that the concept of quality management is rooted in the manufacturing environment. In order to establish the relevance of the dimensions to the contact centre industry, significant international and domestic quality standards and industry reports were consulted. The most important standards included the South African SANS 990 Series and the International ISO 18295. Further definition of quality dimensions was obtained from UK standards and recognised international commercial standards such as COPC and CCA. **The standards shows that dimensions strongly advocated include Leadership, Customers, Human Resources, Operations, Infrastructure and Relationship quality practices**. Performance measures are directly related to each of these practice dimensions in addition to system level quality and business performance.

The resulting instrument for this study included six quality practice dimensions measured by 62 statements, seven performance dimensions measured by 37 statements and six contingency factors measured by 14 statements.

According to Ahire et al (1996), a thorough analysis of instruments used in empirical research is essential for reasons that include providing confidence that the findings reflect the proposed constructs, producing validated scales that can be used by other studies and yielding valid tools for use by practitioners.

The **content validity** of the instrument was maximised in the early stages of development. This was achieved by consulting recognised sources for the development of the practice, performance and contingency dimensions, and the representative measurement statements; consulting with recognised industry experts regarding the proposed dimensions and statements and conducting a pre-test at leading contact centres to verify the ease of comprehension and answerability of the statements. Due to the predetermined structure of the dimensions, **construct validity** was confirmed via a confirmatory rather than exploratory approach. An Exploratory Factor Analysis (EFA) was however conducted to demonstrate the inadequacy of the method. As per Table 6-37, 15 factors were extracted with eigenvalues higher than one and that approximately 62% of the variance is explained by a single factor – thus confirming an unusable result. The Confirmatory Factor Analysis (CFA) that determined principal components within each dimension was more successful. Table 6-40 shows that the Kaiser-Meyer-Olkin (KMO) values were all > 0.5 indicating that patterns of correlation are relatively compact; “Bartlett's Test of Sphericity” values were all significant indicating that the overall correlations between variables are significantly different from zero, and the number of factors extracted for all dimension were one except for Customer Practices (four), HR Practices (two) and Operational Practices (two). However, the variances explained by the first factor for each of these dimensions were considerably higher than that explained by the second and subsequent factors. Analysis of the Scree Plots for each variable

confirmed the number of factors extracted. The factor loadings for all statements were higher than the 0.4 threshold. The CFA was supported by an Item Analysis (IA) that tested the unidimensionality of the predefined data structure. The analysis was performed by correlating the Item scores to Scale scores i.e. each questionnaire statement was correlated with the dimension with which it was associated. The results (Table 6-39 and 6-40) revealed that each statement correlated highest with the dimension to which it was allocated thus confirming the hypothesised structure of the data. Finally, the **criterion validity** was confirmed by the positive and significant correlations between the practice and performance variables (Table 6-42).

Of the four possible methods to assess the **reliability** of a measurement instrument (Saraph et al, 1989), i.e. retest, alternate form, split halves and internal consistency, the generally preferred method (internal consistency) was utilised in this research by determining the reliability coefficient i.e. Cronbach's Alpha (Cronbach, 1951). According to Van de Ven & Ferry (1979), cited in Powell (1995), "these coefficients should fall within a range of 0.70 to 0.90 for narrow constructs and 0.55 to 0.70 for moderately broad constructs". Cronbach's Alpha for all variables was found to be above 0.7 (Table 6-41) with the exception of two contingency factors i.e. "Industry Rivalry" (Alpha = .689) and "Environmental Uncertainty" (Alpha = .624). These can be regarded as broadly defined concepts and thus accept a lower value of the reliability coefficient. Given the high values of the reliability coefficients (average Alpha = .873), none of the items / statements were considered for deletion, even in the rare event that deletion would have improved the Alpha score. Retaining the statements contributes to maintaining the content validity of the scales.

An additional aspect of reliability considered in this study was the **representativeness of the sample** together with the appropriateness of the person that completed the questionnaire. Employing various methods of data collection, a considerable effort was made to secure responses from as many of the approximately 2000 registered contact centres currently operating in South Africa. Approximately 26000 individuals were emailed the survey link, most of whom are associated with the most representative South African contact centre trade association (CCMG). Most of the recipients were classified as senior personnel in their organisations with the ideal respondents being Quality Managers, Operations Managers or General Managers. Here it was found that 94% of respondents were appropriate for the study. Responses were secured from 207 respondents, meeting the 10 % target for the sample size. While the length of the questionnaire (demographic info plus 113 statements) certainly contributed to the high dropout rate of 65.7%, the study managed to secure responses from some of South Africa's most well-known brands / organisations including Cannon South Africa, Makro, Junk Mail, Clientele Life, Altech Netstar, Discovery, Shell, Avis, Colgate Palmolive, Airports Company, Eskom, NSFAS, Santam, O'Keeffe & Swart, Mindpearl, Shoprite Checkers, Ram Couriers, SARS, Rand water,

PPS, Lafarge, Vodacom, Hollard, Sun City Resorts, Computicket, SABS, CSIR, DSTV, Vox, CCMA, PnP, Volvo, Virgin Mobile, Engen, GEPF, MWEB, City of JoBurg, Merchants, Miway, Nashua, Nedbank, African Bank, Netflorist, CellC, Toyota, SA Home Loans, MTN, INTEC, Wesbank, Webhelp, SA Post Office, etc. The full list of respondents is included in Appendix G. The representivity of this sample was assessed along certain criteria that were hypothesised to potentially impact on the implementation of quality practices. These included the Service Type (Captive or Outsourced), Market Served (Domestic or International), Province (Gauteng/Western Cape/KZN/Other) and Size (Thresholds at 20/70/200 seats). Variance calculations of the sample vs. population along these criteria produced revealed that the sample had a 13% higher captive count than the population; the sample was 6% higher on serving international markets than the population; the sample was 8% higher on centres with 0-20 seats than the population with a 5% average variance across contact centre sizes and the sample was 6% lower on centres based in Gauteng than the population with 3% average variance across provinces.

The impact of these variances on the implementation of quality practices was assessed for significance via Kruskal Wallis Tests. It was found that the implementation of all six categories of quality practices was significantly influenced by the Province criterion and just the 'Relationship Practices' category was influenced by Service Type. Markets Served and Size of contact centres had no significant impact on the implementation of quality practices. These results are discussed further under Hypothesis 1. The low average variance on the Province criteria and just one of six categories influenced by Service Type (even with a high average variance) led to the conclusion that the data collected from the sample was not significantly biased. The sample data could therefore be considered representative of the population.

The resulting quality management measurement instrument is considered current, valid, reliable and highly relevant to the contact centre industry.

The development background and results afford the assertion that the measurement instrument is a first quality management measurement instrument, directly relevant to the South African contact centre industry, that has empirically demonstrated strong reliability and validity.

7.2.2 CONFIRMATION OF INDUSTRY QUALITY PRACTICE ADOPTION

As elaborated on in Chapter 2, in 2005 the South African government identified Business Process Outsourcing and Offshoring (BPO&O) as a priority sector, highlighting it as one of two sectors

for specific support in the government's economic development strategy. A plan was therefore developed to improve infrastructure, deepen the talent pool, create incentives, market South Africa's inherent strengths to the international community, strengthen the industry association and **assure quality**. With Quality Assurance identified as a key pillar in this strategy the Department of Trade and Industry (DTI), The Business Trust and Business Process Enabling South Africa (BPeSA) embarked on the development of standards for the South African contact centre industry. This effort culminated in the release of the SANS 990 series in October 2008. The three parts focus on Outbound, Inbound and Back-Office operations. These standards aim to provide the quality management framework of what needs to be in place to improve a company's probability of success. It details the approaches, processes and performance metrics that a company must implement to mitigate the risks inherent in the contact centre environment.

Anecdotal evidence suggests that the South African contact centre industry may have embraced such efforts through the awareness of and implementation of quality standards. The evidence is borne out by the growing recognition by the international community of South Africa as a world class customer service destination. The country has been the recipient of many international awards including the 'Offshoring Destination of the year in 2012 (National Outsourcing Association - NOA) and 2013 (European Outsourcing Association – EOA). Additionally, South Africa received the 2014 NOA Professional Awards, Skills Development Project of the Year and was nominated for best offshore destination of the year in 2015.

However, there has been no empirical study undertaken to establish the extent of awareness of the quality standards or the degree to which the prescripts of the standards are implemented.

Furthermore, from an international standards point of view, in 2010 the International Standards Organisation (ISO) conducted a survey on contact centres to establish the need for standards or guidelines to improve the quality of services provided globally by the industry. 82% of the respondents responded positively to this survey prompting the launch of the international standards development process. The project was formally initiated in 2013 with South Africa being appointed as the Secretariat, positioning the South African Bureau of Standards (SABS) in a leading role in terms of the standards development. Subsequently the ISO 18295: 2017 Parts 1 (Requirements for Customer Contact Centres) and Part 2 (Requirements for using the services of Customer Contact Centres) were released in July 2017.

Here too, no empirical research has thus far been conducted regarding the South African industry's awareness of or state of readiness in terms of implementing these standards.

By incorporating the principles covered in both the South African SANS 990 series and the International ISO 18295 standards, this research attempted to answer the questions on awareness

and implementation of both sets of standards under Hypothesis 1. This exploration of the deployment of quality standards in the contact centre industry is antecedent to developing the quality practice / performance model – the key objective of the study.

Within the contingency factor 'Management Knowledge' respondents were asked if they were familiar with both the SAN990 and ISO 18295 sets of standards. As shown visually in Fig 6-9 together with Table 6-56, South African contact centre managers are well familiar with the SAN 990 series (mean value of 3.51) and to a lesser extent with the ISO standard (mean value of 3.38). The relative knowledge of the standards can be expected due to the release dates of 2008 and 2017 respectively.

Hypothesis 1, based on Research Question 1 attempted to provide the answer to the question:

"To what extent are quality practices deployed in the South African Contact Centre Industry?"

Table 6-45 summarised the mean values for the calculated 1st, 2nd and 3rd order latent quality practice variables while Tables 6-46 to 6-51 included the mean values for the quality practice questionnaire statements.

The mean values for the six **leadership practice** statements ranged from 4.053 to 4.290. Respondents feel strongly that Leadership takes responsibility for quality performance, determines quality goals, provides adequate resources for quality improvement efforts and communicates their commitment to quality to employees. Further leaders are evaluated on quality goals and integrate a quality focus into all activities. The standard deviation for these responses ranges from 0.995 to 1.170 indicating that responses are consistent across the sample.

The mean values for the 13 **customer practice** statements range from 3.639 to 4.317. Respondents agreed relatively strongly that customer inputs are used as a basis for quality (average mean value for statements 1, 4, 5, 6 = 3.841). Further, customer centric behaviour during interactions was achieved (average mean value for statements 3,8,9,10,11 = 4.031). Statements related to personalisation and multichannel interaction scored relatively lower (average mean value for statements 2, 12, 13 = 3.690). This outcome can be expected given that these concepts are relatively new and still filtering into standard contact centre operating procedures. The average standard deviation across all 13 statements is 1.129 indicating that answers are consistent across the sample.

The mean values for the 19 **human resource practice** statements ranged from 3.772 to 4.360. The statement that scored the lowest (mean value of 3.772) relates to multiple channels (being a new concept). This is consistent with comments on multiple channels under customer practices.

Other statements that scored relatively low (mean value less than 4) relates to agent's problem-solving skills and organisations encouraging agents to pursue formal qualifications. The South African industry has recognised these problems as part of the larger skills problem that needs to be addressed. With the country aspiring to secure more complex work (requiring improved problem-solving skills) in the international environment (requiring formal recognition of agent skills / qualifications), these shortcomings should inform future skills strategies. The average standard deviation across all 19 statements is 1.028 indicating that answers are consistent across the sample.

The mean values for the nine **operational practice** statements ranged from 3.801 to 4.284. Processes for customer contacts, escalation, service recovery, forecasting and sample checking score high (average mean value for statements 2, 3, 4, 5, 7 = 4.248) while contingency planning (mean = 3.801) and analysis of failures (mean = 3.922) score relatively lower. This may indicate that centres are less prepared for non-routine events such as unexpected workload peaks and lower than forecasted staff availability. The average standard deviation across all nine statements is 1.014 indicating that answers are consistent across the sample.

The mean values for the 11 **infrastructure practice** statements ranged from 3.407 to 4.281. Infrastructure items relating to information systems, data management and emergency handling score high while statements related to new concepts such as multiple channels and cloud-based technologies score distinctly lower on the scale (average mean value for statements 1, 2, 5 = 3.485). The average standard deviation across all 11 statements is 1.095 indicating that answers are consistent across the sample.

The mean values for the 4 **relationship practice** statements ranged from 4.020 to 4.307. The high number of missing values for this group of statements is due to the first 2 statements being only applicable to outsourced centres. These centres strongly agreed that agreements are documented with clients (mean value of 4.145) and that performance is monitored against agreed KPIs with the client (mean value of 4.185). Most centres agreed that supplier relationships are governed by SLAs and that fewer long-term supplier relationships are encouraged. The average standard deviation across all 4 statements is 1.020 indicating that answers are consistent across the sample.

Section 5.9.5 provided motivations as to why certain population characteristics may influence the deployment of quality practices. These characteristics were utilised to assess possible bias in the sample data. As discussed earlier, it was found that while Markets Served and Size of contact centres had no significant impact on the implementation of quality practices, Relationship Practices were influenced by Service Type (Captive or Outsourced) and all six groups of quality practices were influenced by the Province criteria.

The "Mann Whitney" test for significance difference between captive and outsourced centres for each of the relationship statements revealed significant difference for three of four statements (Table 6-52). Tables 6-53 and 6-54 shows that Outsourced centres have higher mean values and lower standard deviations for each of these comparisons i.e. Outsourced centres agreed more strongly with these statements and answered more consistently. While the first statement relating to documented agreements with clients only applies to outsourced centres hence the result is expected, the results for statement 3 and 4 reveal the outsourced centre value documented SLAs with suppliers and fewer longer-term supplier relationships more than captive centres. This result is consistent with very nature of outsourced centres where external relationships are an inherent part of the business model.

Regarding the influence of Province on the implementation of quality practices Table 6-56 shows a significant difference between Gauteng and KZN for all Quality Practices, between Gauteng and Other provinces for HR Practices and between Western Cape and KZN for five of six Quality Practices plus the second and third order practice variables. Tables 6-53 and 6-54 shows that KZN reports higher levels of implementing Quality Practices (higher mean values) together with more consistent replies (lower standard deviation).

A possible explanation for the difference between KZN and other major provinces is (as pointed out in paragraph 5.9.5) that KZN is heavily focused on outbound sales where performance pressure both on agents and managers are elevated. This would result in the need for tighter controls to support more efficient operations. One could therefore reasonably expect a higher degree of operational initiatives such as quality programs.

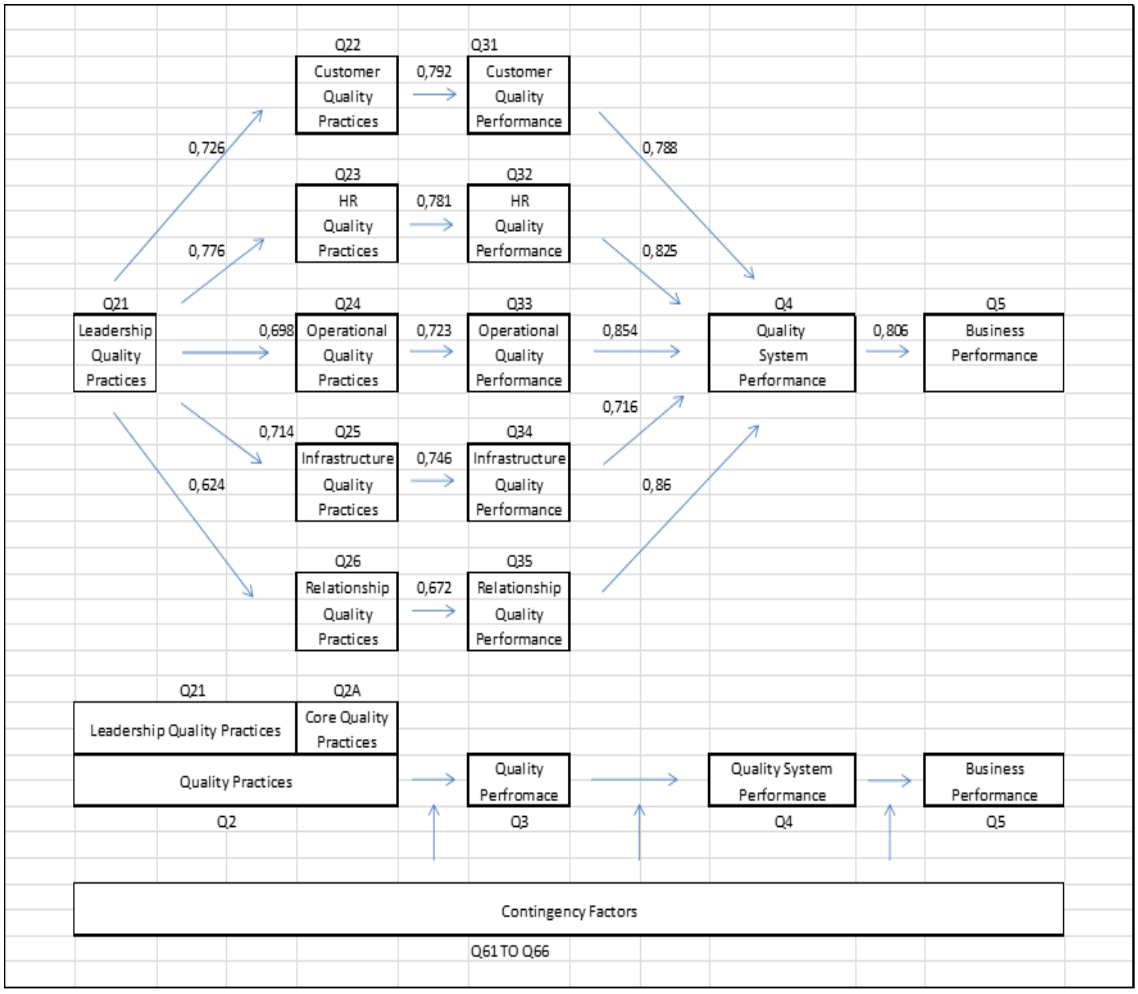
The 3rd order latent variable (Quality Practices) which consolidates the quality practice data from all of the lower order latent practice variables (i.e. Leadership, Customer, Human Resource, Operational, Infrastructure and Relationship practices) has a high mean value of 4.069 (Table 6-45). It may therefore be concluded that although there may be differences in the extent to which quality practices are implemented across various contact centres, South African contact centres are aware of and are 'High Users' of quality practices.

This conclusion supports Hypothesis 1 and is the first empirical confirmation of the high rate of adoption of quality management practices across the South African contact centre industry.

7.2.3 THE IMPACT OF QUALITY PRACTICES ON PERFORMANCE

Changing priorities in the rapidly expanding and highly competitive international contact centre environment have seen the emphasis move from mostly lower costs to a balance between lower cost and higher quality (Banks & Roodt, 2011; Willcocks et al, 2012; Deloitte, 2013; Nelson Hall, 2015; Site Selection Group, 2016). Critical to maintaining competitive momentum is a contact centre's management ability to balance these priorities i.e. lower operational costs must be realised by focusing on quality practices that have the highest impact on performance. It is therefore essential that contact centre managers have an understanding of the impact of quality practices on performance.

The primary aim of this study was to develop a quality practice / performance model that would serve as an industry reference, providing contact centre managers with an empirically supported understanding of the quality practice / performance relationships in the contact centre industry. The consolidated model including the path coefficients was presented in Chapter 6 (Figure 6-14) - reproduced here for ease of reference.



This path model of the likely connections pictorially represents the impact of quality practices on performance and the moderating effect of contingency factors on such relationships. More specifically the model tested the following hypotheses :

- Leadership Quality Practices influences the implementation of Core Quality Practices (Hypothesis 3).
- Implementation of Core Quality Practices results in Quality Performance (Hypothesis 4).
- Quality Practices impacts on Quality System Performance, via Quality Performance (Hypothesis 5) which in turn influences Business Performance (Hypothesis 6). The impact of quality practices on performance may be synergistic (Hypothesis 7).
- Finally, Contingency Factors have a moderating impact on the quality practice / performance relationships. (Hypothesis 8).

The discussion that follows focuses on the key areas of the model in line with the tested hypotheses.

The Importance of Leadership Commitment

In the prescriptive literature Deming (1981) identified leadership as one of his 14 quality principles, Juran (1986) lists setting goals, providing resources and evaluating performance within his 3 basic processes and Crosby (1979) identifies management commitment, quality awareness and goal setting in his 14-step program for effective quality management. The importance of leadership quality practices is emphasised across the quality-related academic literature including Saraph et al (1989), Flynn et al (1994) , Powell (1995), Flynn et al (1995), Anderson et al (1995), Ahire et al (1996), Zhang (2000), Fynes and Voss (2001), Douglas and Judge (2001), Kaynak (2003), Yeung et al (2006), Nair (2006), Sila (2007), Salaheldin (2008), Jayaram et al (2010), Fening et al (2013), Wu (2014), Basu and Bhola (2016). Leadership aspects are included in the international quality awards criteria where MBNQA includes leadership and strategic planning as two of its seven key elements, EFQM includes leadership and policy and strategy as two of five key enablers and the Deming Prize includes policies (a leadership responsibility) as part of its 10 equal criteria. Regarding the contact centre quality standards, ISO 9004:2009 includes leadership as one of nine core principles, ISO 18295:2017 has customer focused leadership one of six focus areas, SANS 990:2009 includes leadership (Organisational Focus and Operational Plans) as one of four focus areas, BS EN 1538:2009 has Management Strategy and Policy as one of 6 focus areas, COPC CX includes Leadership and Planning as a key element and the CCA Global Standard includes Leadership responsibilities such as organisational planning. As per the literature, top management's commitment to quality management, demonstrated through the implementation of leadership quality practices, has been identified as a key determinant of the successful implementation of a quality management system.

In this study Leadership Practices have been isolated as the first group quality practices that provides an enabling environment for the deployment of Core Quality Practices. This is akin to models such as that proposed by Flynn et al (1994), Flynn et al (1995), Anderson et al (1995), Kaynak (2003) and Jayaram et al (2010). In these models, leadership has been included either as a sole enabler or part of the infrastructural or cultural elements that supports core quality practices. In line with the literature, the current study expected that the implementation of leadership quality practices will significantly impact on the deployment of core quality practices. Accordingly, Hypothesis 3, based on Research Question 3 attempted to provide the answer to the question:

"How do Leadership Quality Practices influence the deployment of Core Quality Practices?"

The literature shows that the importance of leadership is stressed across academic studies, awards criteria, domestic, international and commercial quality standards. It has thus been hypothesised that "Leadership Quality Practices have a positive and significant impact on the deployment of Core Quality Practices" i.e. The implementation of leadership quality practices should be closely followed by the deployment of core quality practices such as customer, human resource, operational, infrastructure and relationship practices.

The 1st order latent variable 'Leadership Practices' was measured by 6 representative Likert Scale statements. The statements focus on leaders assuming responsibility for quality, determining quality goals, allocating adequate resources for quality efforts, communicating their commitment to quality, being evaluated on quality performance and regularly reviewing the integration of a quality focus in all activities. The construct validity (which measures the extent to which the items in a scale all measure the same construct) results for this construct showed a KMO value of .889 i.e. considerably higher the .5 threshold (Field, 2015); 'Bartlett's Test of Sphericity' was significant; only one factor was extracted explaining 74.87% of the variance and a factor loading range of .830 to .906. (Table 6-40). The reliability coefficient (Cronbach's Alpha) value was .932 (Table 6-41). In summary, the measurement scales for this construct exhibited very good validity and reliability.

The strength and direction of the relationship between Leadership Practices and each Core Quality Practice was determined by performing a Linear Regression with the Core Quality Practice as the dependent variable and Leadership Practices as the independent variable. The pre-regression checks for normality (Histograms, P-P Plots and Scatterplots) show that the variables are not-normal. This was confirmed by the non-zero skew and kurtosis values together with the Kolmogorov-Smirnov Tests included in Appendix H. However, the large sample size of 207 responses affords the benefit of the "Central Limit Theorem" which states that the probability distributions of parameters of large samples (> 30) will tend towards normality irrespective of the

distribution of the sample or the population (Field, 2015). Linear regression was therefore considered a valid procedure to test these relationships.

The path coefficients (as shown in Figure 6-10) range from a low of .624 (the impact of Leadership on Relationship Practices) to a high of .776 (the impact of Leadership on Human Resource Practices). The relative impact of Leadership Practices on the implementation of the Core Quality Practice, from highest to lowest, is as follows:

Relationship	**Direct Effect**
Leadership / Human Resource Practices	.776
Leadership / Customer Practices	.726
Leadership / Infrastructure Practices	.714
Leadership / Operational Practices	.698
Leadership / Relationship Practices	.624

The results of the regression analyses are summarised in Table 6-61 and detailed in Appendix M. Table 6-61 shows that while there is a variation in the path coefficients between the Leadership Practices construct and the Core Quality Practice constructs, there exists a strong, positive and significant relationship between Leadership Practices and **all** of the Core Quality Practices ($P < .001$) **thus supporting Hypothesis 3**.

Applying the path analysis procedure where the implied bivariate correlations between variables are decomposed into direct, indirect and unexplained effects produces negligible results for the unexplained effects (Table 6-62). This result may be interpreted as the model being a **good fit** for the data (Anderson, 1995).

The result, in support of Hypothesis 3, confirms that top management support, implemented through leadership quality practices, is significantly related to the deployment of core quality practices.

This result supports the assertions regarding the importance of leadership practices expressed or implied in the prescriptive literature, academic studies, awards criteria, domestic, international and commercial quality standards. Current industry leaders may be affirmed that their commitment to quality has a significant impact on successful quality program implementations while future leaders should be cognisant of this result.

An Early View of the Impact of Quality Practices on Performance

Prior to testing Hypotheses 4 to 7 which relates to the relationships between quality practices and performance and **early view** of the general relationship was established. A similar exercise was performed by Sluti (1992) to determine a broad, higher level view on the quality practice / performance relationships. In the current study, this was achieved by dividing the sample into two broad groups i.e. 'High Users' of quality practices and 'Low Users' of quality practices (via the creation of dummy variables). The 3rd order practice variable was utilised for this exercise since it captures data from all 6 quality practices i.e. Leadership, Customer, Human Resources, Operational, Infrastructure and Relationship practices. A Non-parametric test (Kruskal Wallis) for significance in the performance of each group was conducted against three separate performance variables i.e. Quality Performance, Quality System Performance and Business Performance. Table 6-44 shows that the results are significant for all three performance measures i.e. the **performance of 'low users' of quality practices is significantly lower than 'high users' of quality practices** when measured on quality performance, quality system performance and business performance ($p < .001$ for all three measures). This finding broadly supports the adoption of quality management practices in the South African contact centre industry.

The Impact of Quality Practices on Quality Performance

In this study the impact of quality practices on performance was assessed at different levels. Under Hypothesis 4, the impact of quality practices have been assessed on a functional level (called Quality Performance) i.e. via performance metrics directly related to a specific group of core quality practices. This assessment establishes the value of each group of core quality practices (Customer, Human Resources, Operational, Infrastructure and Relationship practices) in isolation and relative to each other. Hypothesis 5 then looks at the impact of each set of quality practices on system (or organisational) level performance.

There is a dearth of academic literature that considers quality performance in this manner i.e. performance based on metrics directly related to a group of core quality practices. Most studies considered operational performance on an organisational level. Powell (1995) used the single measure of productivity. Flynn et al (1995) measured external quality performance (i.e. perceived market outcomes) and internal quality performance (% passed final inspection). Dow et al (1999) considered higher level measures such as percentage defects in final assembly, cost of warranty claims, total cost of quality and defect rates relative to competitors. Fynes et al (2001) considered conformance quality, design quality and external quality in use. Kaynak (2003) measured quality performance in terms of product quality, cost of scrap and delivery lead times. A similar level of quality performance measurement may be found in studies such as Yeung et al (2006), Nair (2006), Salaheldin (2008), Zhang et al (2012), Fening et al (2013), Wu (2014) and Abubakar et

al (2016). There are however some studies that considered quality performance at the lower functional level. These include Ahire et al (1996) who looked at supplier performance; Zhang (2000) who considered quality performance in terms of processes, suppliers, customers and people; Sila (2007) considered human resource results and customer results; Jayaram et al (2010) included design performance, process quality and product quality in their model. Although these studies looked at quality performance at a level lower than that of the organisation, none related the quality performance measurements directly to a specific set of related quality practices. The motivation behind this specific approach in the current study stems from the overall objectives of the study i.e. a model that guides practitioners in their approach to quality management in terms of prioritising practices that have the highest impact on performance. This would be relevant when considering piecemeal quality program implementations. This requirement prompted the need to understand the direct value of each set of quality practices in isolation and relative to each other. Further, while the approach may be novel from an academic point of view, it does find implied support from the practice literature especially the industry quality standards that provide extensive performance metrics that can be associated directly with a group of core quality practices (Tables 4-19 to 4-23).

Hypothesis 4, based on Research Question 4 attempted to provide the answer to the question:

"How do Quality Practices impact on Quality Performance?"

This part of the model introduced the idea that each set of Core Quality Practices results in performance directly related to those specific sets of practices. An example here is that the effectiveness of customer related practices is determined by assessing specific customer related outcomes. The same applies for the human resource, operational, infrastructure and relationship practices groups. A summary of the findings relating to each of the five relationships follows.

Customer Practices and Customer Performance were measured by 13 and 6 statements respectively. Regarding the construct validity of these latent variables, the KMO values were above the threshold and Bartlett's Tests were significant (Table 6-40). While only 1 factor was extracted for Customer Performance (explaining 75.47% of the variance), four factors were extracted for Customer Practices. The factor loading shown in the Rotated Component Matrix (Appendix K) does not reveal any distinct factors in terms of identity. Considering the unrotated solution, the % variance explained by the first factor (45.34%) was considerably higher than that explained by the second (10.09%) and subsequent factors. Here the factor loadings ranged from .593 to .771. Factor loadings for Customer Performance was higher, ranging from .807 to .913. The Alpha coefficients were .895 and .934 respectively. The scales therefore exhibit good reliability and validity. The results of the regression analyses are summarised in Table 6-63 and detailed in Appendix N. Table 6-63 shows that **there is a strong, positive and significant**

relationship (p < .001) between Customer Practices and Customer Performance (Path Coefficient = .792).

Human Resource Practices and Human Resource Performance were measured by 19 and 8 statements respectively. 2 factors were extracted for HR Practices, although the first factor explained 61.03 % compared to 5.69% for the second factor. Factor loadings were at least .618 for both constructs and the reliability coefficient was .964 and .951 respectively. The scales therefore exhibit good reliability and validity. The regression results show that **there is a strong, positive and significant relationship (p < .001) between HR Practices and HR Performance** (Path Coefficient = .781).

Operational Practices and Operational Performance were measured by 9 and 6 statements respectively. 1 factor was extracted for both constructs explaining approximately 69% of the variance for each. Factor loadings were at least .740 for both constructs and the reliability coefficient was .942 and .910 respectively. The scales therefore exhibit good reliability and validity. The regression results show that **there is a strong, positive and significant relationship (p < .001) between Operational Practices and Operational Performance** (Path Coefficient = .723).

Infrastructure Practices and Infrastructure Performance were measured by 11 and 3 statements respectively. 2 factors were extracted for Infrastructure Practices, although the first factor explained 57.17 % compared to 9.18% for the second factor. Factor loadings were at least .564 for both constructs and the reliability coefficient was .900 and .844 respectively. The scales therefore exhibit good reliability and validity. The regression results show that **there is a strong, positive and significant relationship (p < .001) between Operational Practices and Operational Performance** (Path Coefficient = .746).

Relationship Practices and Relationship Performance were each measured by four statements. One factor was extracted for both constructs explaining approximately 73% for Relationship Practices and 76% for Relationship Performance. Factor loadings were at least .806 for both constructs and the reliability coefficient was .879 and .844 respectively. The scales therefore exhibit good reliability and validity. The regression results show that **there is a strong, positive and significant relationship (p < .001) between Relationship Practices and Relationship Performance** (Path Coefficient = .672).

Figure 6-11 summarises the results of the direct relationships between the Core Quality Practices and Quality Performance. The relative impact of Core Quality Practices on the corresponding Quality Performance measure, from highest to lowest, is as follows:

Relationship	Direct Effect
Customer Practices / Customer Performance	.792
Human Resource Practice / Human Resource Performance	.781
Infrastructure Practices / Infrastructure Performance	.746
Operational Practices / Operational Performance	.723
Relationship Practices / Relationship Performance	.672

The indirect effect of Leadership Practices on Quality Performance variables included in Table 6-64 range from .419 to .606. This implies that Leadership Practices have a strong and positive impact on Quality Performance transmitted through the Core Quality Practices variables. **We conclude that the direct and indirect impact of Quality Practices on Quality Performance are strong and positive thus supporting Hypothesis 4.**

The result, in support of Hypothesis 4, confirms that all groups of quality practices have a strong, positive and significant impact on performance when measured on a functional level (quality performance). The decreasing order of impact is Customer Practices, HR Practices, Infrastructure Practices, Operational Practices and Relationship Practices.

The calculation of the "Unexplained Effects" include in Table 6-64 are below or approximately equal to the 0.1 threshold indicating a **good model fit** (Anderson, 1995). The highest unexplained effect between Leadership Practices and Relationship Performance (Uji = .241) can be expected given that Relationship Performance is a broad construct that may be influence by factors not considered here.

The results obtained here would be useful to practitioners who opt for a piecemeal implementation of their quality program. While this approach is not optimal, given that all groups of quality practices have a positive impact on related performance, it could be due to issues such as budget constraints. The result indicates that highest return on resources invested in quality practices may be realised by prioritising customer practices followed by human resource practices, infrastructure practices, operational practices and finally relationship practices.

The Impact of Quality Practices on Quality System Performance

While Hypothesis 4 focused on the impact of each group of quality practices in isolation, Hypothesis 5 considered the contribution of each group of quality practices to performance measured at a higher level i.e. at the organisational level – called Quality System Performance. This hypothesis (5), based on Research Question 5 attempted to provide the answer to the question:

"How do Quality Practices impact on Quality System Performance?"

Certain performance outcomes due to quality practices manifest on a system / organisational level, i.e. at a level higher than outcomes attributable to specific practices. These outcomes may be considered as the combined effect of the various core quality practices. As discussed in the previous section, many studies considered operational performance on an organisational level. These include Powell (1995), Flynn et al (1995), Dow et al (1999), Fynes et al (2001), Kaynak (2003), Yeung et al (2006), Nair (2006), Salaheldin (2008), Zhang et al (2012), Fening et al (2013), Wu (2014) and Abubakar et al (2016). Details of the specific measures can be found in the literature review, specifically in Table 3-12. The findings in these studies amongst others have been mixed. Some have found a positive impact of quality practices on both operational and business performance (Flynn et al., 1995; Anderson et al., 1995; Zhang, 2000; Kaynak 2003; Shah and Ward 2003; Sila, 2007; Salaheldin, 2008; Jayaram et al., 2010; Fening et al., 2013; Zhang and Xia, 2013; Wu, 2014; Kafetzopoulos et al., 2015; Basu & Bhola 2016; Abubakar and Mahmood, 2016). Some studies have found that while quality practices had a positive and significant impact on operational outcomes, the same could not be claimed for the impact on overall business performance (Sluti, 1992; Das et al., 2000; Fynes and Voss, 2001). Some researchers found mixed implications for performance due to quality practices i.e. not all quality practices had a significant impact on performance (Powell, 1995; Dow et al, 1999). Finally, some authors have reported a failure in quality practices to deliver on performance – noting failure rates as high as 60% (Dooyoung et al. 1998 as cited in Nair, 2006).

As per Dow et al. (1999) it was Powell (1995) that was the first prominent researcher to question if all quality practices were significantly related to organisational level performance. Powell (1995) found this to be true for only three of the twelve practices leading to the assertion that organisations may be able to harness the benefits of quality practices without subscribing to full-blown quality programs such as TQM. Powell's assertions were supported by contradictory evidence regarding the impact of quality programmes including the "Wallace Company, a Houston oil-supply firm that filed for bankruptcy soon after winning the Baldrige Award and Florida Power and Light (a Deming Award winner) that virtually eliminated its program over employee complaints of excessive paperwork." Arthur C. Little's (1992) survey of 500 US

companies found that only one third experienced a significant impact and of 100 UK firms, only one fifth reported tangible results. Additionally, Powell (1995) asserted that "empirical studies have not shown that TQM firms consistently outperform non-TQM firms".

In the current study, the Quality System Performance variable was measured by 5 questionnaire statements. The construct validity results for this construct showed a KMO value of .859; 'Bartlett's Test of Sphericity' was significant; only 1 factor was extracted explaining 77.55% of the variance and a factor loading range of .809 to .924. (Table 6-40). The reliability coefficient value was .925 (Table 6-41). The measurement scales for this construct therefore exhibited very good validity and reliability.

The results of the regression analyses are summarised in Table 6-65 and detailed in Appendix O. Table 6-65 shows that there is a strong, positive and significant relationship between the Quality Performance variables and Quality System Performance ($p < .001$) with path coefficients ranging from .716 to .860. Figure 6-12 summarised the results.

The indirect effects of Quality Practices on Quality System Performance are shown in Table 6-66. The relative impact of Core Quality Practices on Quality System Performance, from highest to lowest, is as follows;

Relationship	**Indirect Effect**
Human Resource Practice / Quality System Performance	.644
Customer Practices / Quality System Performance	.624
Operational Practices / Quality System Performance	.617
Relationship Practices / Quality System Performance	.578
Infrastructure Practices / Quality System Performance	.534

The results confirm that the indirect effects of Quality Practices on Quality System Performance, transmitted through Quality Performance, are strong and positive thus **supporting Hypothesis 5**.

Table 6-66 also reveals a relatively **good model fit** (Anderson, 1995) with the "Unexplained Effect" ranging from -.031 to .016 for the Quality Performance variables, .041 to .243 for Quality Practice variable and .211 to .350 for Leadership Practices. The increasing tendency of the unexplained effect is expected as the degree of separation between the variables increase.

The result, in support of Hypothesis 5, confirms that all groups of quality practices have a strong, positive and significant impact on performance when measured on an organisational level (quality system performance). The decreasing order of impact is HR Practices, Customer Practices, , Operational Practices, Relationship Practices and Infrastructure Practices.

In contrast with the results obtained by Powell (1995) and Dow et al (1999), the positive results in support of Hypotheses 5 of this study are in line with studies that have found a positive impact of quality practices on performance such as Flynn et al. 1995; Anderson et al. 1995; Das et al. 2000; Zhang, 2000; Kaynak 2003; Shah and Ward 2003; Fening et al. 2013; Zhang & Xia 2013; Kafetzopoulos et al. 2015; Basu & Bhola 2016; Abubakar & Mahmood, 2016.

While the ranking of the performance impact of the various practices are different from that obtained under Hypothesis 4, this result may still be useful to practitioners implementing piecemeal quality programs. The result supports a focus on Human Resource Practices and Customers Practices similar to the that suggested under Hypothesis 4.

Synergistic Value in the Deployment of Quality Practices

Related to the question of whether all quality practices contribute to performance on an organisational level (Research Question 5) is the concept of synergistic value achieved in the deployment of quality practices (Research Question 7).

As discussed above, prominent researchers in the field such as Powell (1995) have questioned the value of full-blown quality programs arguing that not all quality practices contribute to performance. As discussed in the literature, Dow et al (1999) investigated the synergistic effect of quality practices in terms of the ultimate impact on performance where it was found that their 'Baseline Model" had a better fit to the data than the 'Best Practice Model". In the former, quality practices contributed individually to quality outcomes while in the latter, quality practices worked in unison to produce quality outcomes. Dow et al (1999) found no synergistic value in the deployment of quality practices.

In the current study, Hypothesis 7, based on Research Question 7 attempted to provide the answer to the question:

"Is there synergistic value in the deployment of Quality Practices?"

Research Question 2 is antecedent to Research Question 7 in that it is essential to know if contact centres deploy quality practices in unison prior to testing if there is synergistic value in such deployment (Dow et al, 1999).

The literature shows that quality practices are always advocated as part of a larger quality program thus advocating the **interdependent nature** of quality practices where the combined effect of the varied practices produces a superior outcome. Early prominent contributors in the field such as Deming (1981, 1982, 1986) prescribed his 14 principles of quality management, Juran (1986, 1970) packaged his work in the three basic processes while Crosby (1979) developed a 14-step program for effective quality management. Examples from empirical studies include Flynn et al's (1994) seven core dimensions, Saraph et al's (1989) eight core dimensions or Powell's (1995) 12 variables. International quality awards, essentially based on Total Quality Management (TQM) principles, include numerous focus areas. Here the Malcolm Baldridge National Quality Awards (MBNQA) has seven criteria, the European Foundation for Quality Management (EFQM) Excellence Model has nine focus areas while the Deming Prize has 10. More specifically in the contact centre industry the international ISO 18295 standards, the South African SANS 990 series, the UK BS EN 15838 and commercial standards such as the CCA Global Standard and COPC CX Standard all include a full range of quality practices parallel to those articulated in the practice / performance model of this study.

Research Question 2 i.e. "*Are quality management practices deployed in unison or as individual practices?*" was answered by performing a bivariate correlation of all the quality practice variables. The results, included in Table 6-59, show positive and significant correlations among the quality practice variables indicating that quality practices are deployed in unison thus supporting Hypothesis 2. This result is congruent with the result obtained for the 'Management Knowledge' statements which indicated that South African contact centre managers are familiar with the SANS 990 domestic standards and to a lesser extent familiar with the new contact centre ISO standards. Having determined that quality practices are deployed in unison in the South African contact centre industry facilitates addressing Research Question 7.

In seeking an answer to Research Question 7, an alternate model (Fig 5-5) was generated and compared to the original model conceived in Fig 4-1. In this alternate model higher order variables were utilised to represent a consolidated quality practice variable (Core Quality Practices - Q2A) and a consolidated quality performance variable (Q3).

The Path Analysis for the alternate model produced an "Unexplained Effect" value of .091 between the extreme variables in the model i.e. Leadership Practices and Business Performance. Given that this value is lower than the original model's "Unexplained Effect" values for all paths between these variables (ranging from .164 to .289 – Table 6-68), it can be concluded that the alternate model, where practices and performance are represented by single higher order variables, provides a better fit to the data (Dow et al, 1999). **Synergistic value therefore does exist in the deployment of quality practices hence Hypothesis 7 is supported**.

The result, in support of Hypothesis 7, confirms that synergistic value does exist in the deployment of quality practices thus confirming the interdependent nature of such practices and providing support for the deployment of full-blown quality programs such as TQM.

This result contrasts that found by Dow et al (1999) and provides support for the interdependent nature of quality practices as advocated by the prominent early authors, academic studies, awards criteria and contact centre quality standards. The interdependent nature of quality practices, in turn supports the deployment of full-blown quality programs to achieve outcomes superior to the implementation of piecemeal programs.

The Impact on Business Performance

Sluti (1992) references the DuPont system of Financial Analysis which is widely accepted model that depicts the numerous influences impacting business performance. The model shows that while operational performance does have an impact on business performance, Return on Investment (ROI) is influenced by many other factors. Consequently, while we expect to see an impact on business performance due to operational initiatives such as quality practices, it was expected this this relationship may not be very strong.

Hypothesis 6, based on Research Question 6 attempted to provide the answer to the question:

How do Quality Practices impact on Business Performance?

As per the Quality Practice / Performance model the impact of Quality Practices on Business Performance is transmitted via 2 stages of intermediate variables i.e. Quality Performance and Quality System Performance. It is therefore expected that the additional degrees of separation of the variables would result in reduced indirect coefficients.

The Business Performance variable was measured by 5 questionnaire statements. The construct validity results for this construct showed a KMO value of .878; "Bartlett's Test of Sphericity" was significant; only one factor was extracted explaining 89.44% of the variance and a factor loading range of .920 to .964. (Table 6-40). The reliability coefficient value was .970 (Table 6-41). The measurement scales for this construct therefore exhibited very good validity and reliability.

The results of the regression analyses are summarised in Table 6-67 and detailed in Appendix P. Table 6-67 shows that there is a strong, positive and significant relationship ($p < .001$) between Quality System Performance and Business Performance with a path coefficient s of .806.

The indirect effects of Quality Practices on Business Performance are shown in Table 6-68 where coefficients range from .291 to .693. **The results confirm that the indirect effects of Quality Practices on Business Performance, transmitted through Quality Performance and Quality System Performance are strong and positive thus supporting Hypothesis 6.**

Table 6-68 also reveals a relatively good model fit with the "Unexplained Effect" ranging from .015 to .081 for the Quality Performance variables, .034 to .194 for Quality Practice variable and .164 to .289 for Leadership Practices. The increasing tendency of the unexplained effect is expected as the degree of separation between the variables increase.

Core Quality Practices have a strong, positive indirect impact on Business Performance transmitted through Quality Performance and Quality System Performance. The relative impact of Core Quality Practices on the Business Performance, from highest to lowest, is as follows;

Relationship	**Indirect Effect**
Human Resource Practice / Business Performance	.536
Customer Practices / Business Performance	.503
Operational Practices / Business Performance	.498
Relationship Practices / Business Performance	.466
Infrastructure Practices / Business Performance	.431

The result, in support of Hypothesis 6, confirms that all groups of quality practices have a strong, positive and significant impact on business performance. The decreasing order of impact is HR Practices, Customer Practices, Operational Practices, Relationship Practices and Infrastructure Practices.

The result are in line with studies that have found a positive impact of quality practices on both operational and business performance (Flynn et al., 1995; Anderson et al., 1995; Zhang, 2000; Kaynak 2003; Shah and Ward 2003; Sila, 2007; Salaheldin, 2008; Jayaram et al., 2010; Fening et al., 2013; Zhang and Xia, 2013; Wu, 2014; Kafetzopoulos et al., 2015; Basu & Bhola 2016; Abubakar and Mahmood, 2016). Further, the results are in contrast to studies that have found that while quality practices had a positive and significant impact on operational outcomes, the same could not be claimed for the impact on overall business performance (Sluti, 1992; Das et al., 2000; Fynes and Voss, 2001).

7.2.4 THE IMPACT OF CONTINGENCY FACTORS

Sitkin et al (1994) proposed that a possible cause of failed quality programmes could be that approaches such as TQM were advocated as universally applicable with little or no attention paid to contextual factors such as uncertainty faced by organisations. Accordingly, Hypothesis 8, based on Research Question 8 attempted to answer the following question:

"How do contingency factors moderate the relationship between Quality Practices and Performance?"

This question was answered via partial correlations where zero-order and partial correlations were analysed to assess the impact of contingency factors on the practice-performance relationships. The moderating impact of the contingency factors on the relationship between the 3rd order Quality Practices variable and Quality Performance, Quality System Performance and Business Performance were assessed. The first group of six contingency factors considered were those found in the literature and the second group included six demographic variables.

The results for the first group, included in Table 6-72, show that "Management Knowledge" has the highest impact on all measures followed by "External Demand for Quality", then "Culture". All three factors have a confounding impact on the relationships in that the presence of these factor enhances that correlations between quality practices and the performance measures.

As far back as 2012, respondents to a study conducted by the London School of Economics (Willcocks et al, 2012) pointed out a specific problem with skills available at the middle management level. Benner (2006) asserted that in order to take advantage of the BPO opportunities, the South African government needs to take a longer-term view by developing human capacity as an element of its strategy. Having acknowledged the skills gap, the relevant industry associations have shifted focus from international marketing to institutionalising of the skills supply chain together with the development of sector-specific programmes and

qualifications. **This is the first empirical study that confirms the impact of "Management Knowledge" on company performance in the South African contact centre industry.**

As South Africa entrenches its position in the international environment, companies can expect an increasing demand for quality compliance to provide current and potentially clients with the assurance of superior and consistent service levels. Industry bodies need to build on leading role that South Africa has played in the development of the international standards by extending this into an effective roll-out program where quality compliance forms an essential component of a contact centres business strategy. **This study has confirmed that "External Demand for Quality Compliance" has a positive impact of the practice / performance relationship.**

Regarding "Culture", the study has confirmed that organisations that strive for a more open than restrictive culture would find a higher correlation between their quality practices and performance. This result feeds well into the South African contact centre industry's aspiration to move up the value chain by supplying more complex services to the international market. Provision of such services require a more mature environment with open communication and flexible operating procedures. **This study has confirmed that a relatively open culture has a positive impact on the quality practice / performance relationship.**

Table 6-73 includes the results of the impact of the demographic variables on the quality practice / performance relationships. **The results confirm that all of the demographic factors considered** i.e. Province, Service Type, Markets Served, Ownership, Size and Age **have a negligible impact**. This result is encouraging in that a contact centre may have confidence in the outcomes of their quality initiative irrespective of profiles (in accordance with the criteria covered). These results are in contrast to those obtained by Jayram et al (2010) where it was found that industry type and size of the firm had an impact on the quality practice / performance relationships. The result is however similar those of Sila (2007) who found that the size and scope of the firm had no impact on the relationships.

The results obtained across the 2 groups of contingency factors partially support both the universal and contextual approaches to quality management. Hypothesis 8 is partially supported.

7.3 CONCLUSION

The main aim of the study was to develop a quality practice / performance model for the South African contact centre industry that would inform management decisions in the quest to maintain competitive advantage. The conclusion of this work covers a summary and implications of the research outcomes, the academic and practical significance of the research and finally the research limitations.

7.3.1. SUMMARY AND IMPLICATIONS OF RESEARCH OUTCOMES

While the key outcome of this study is the quality practice / performance model together with the moderating impact of contingency factors (Objectives 2 and 3 respectively), the development of the measurement instrument and the employment of the instrument to explore the extent of quality practice deployment in the industry, is antecedent to the development of the model. A summary of the outcomes and implications follow.

The Quality Management Measurement Instrument

As per the discussion, antecedent to developing a quality practice / performance model for the South African contact industry was the requirement to develop a new, industry-relevant quality management measurement instrument. The quality practice, performance and contingency dimensions for this instrument were based on extensive prescriptive and academic literature resulting in an industry-first quality management instrument that demonstrated strong reliability and validity.

The implication of this development is that the new instrument may be confidently utilised as a tool by researchers undertaking quality related research in the contact centre industry without having to redevelop or seek reliable and valid scales for the measurement of quality practice and performance constructs. Further, given the comprehensive nature of the instrument (especially the coverage of the principles embedded in the local and international industry quality standards), it is envisaged that the instrument can be confidently utilised by contact centres to conduct internal quality audits or by agencies and client organisations that need to audit contact centres for relevant purposes. Based on Benner et al's (2007) survey of international contact centres, where it was found that the profile of South African contact centres are similar to international counterparts, it can be suggested that the quality management measurement instrument is relevant internationally.

Confirmation of Quality Management Adoption in the South African Contact Centre Industry

While anecdotal evidence may suggest the South African contact centres are aware of and implement quality management practices, thus far there has been no empirical evidence relating to the implementation of the quality practices embedded in the domestic or international standards. The first objective of this study undertook to explore the extent to which South African contact centres implemented a wide range of quality practices. The result of this exercise provides the first empirical evidence that South African contact centres are 'High Users' of quality management practices. This evidence is useful for the marketing of the South African offering internationally and establishes a baseline for trade associations aiming to roll-out the standards nationally to bolster the industry.

Additionally, the sample data was assessed along certain criteria that were hypothesised to potentially influence the implementation of quality practices. The results confirmed that only the 'Province' criteria significantly impacted on quality practice deployment. Here KZN centres have reported significantly higher levels of quality practice deployment which may be related to the type of work most prevalent in the region (i.e. outbound sales). Markets served (domestic or international) did not impact on the deployment of quality practices indicating the South African centres value providing a high quality of service independent of the client profile. Similarly, the size of the contact centres did not impact on the deployment of quality practices, a result that bodes well for small businesses in this environment. It is often the case that small businesses are overlooked in international outsourcing decisions. This result serves to counter such a trend. Finally, the service type (captive or outsourced) impacted on only one of the six quality practice groups indicating that the concept of quality is valued irrespective of the centre serving its own company or external clients. The implication here is that captive centres may easier transform (at least from a quality perspective) from cost to profit centres that could operate as outsourced service providers to external clients.

The Impact of Quality Practices on Performance

An **early view** of the practice / performance relationship was established by comparing the performance of 'High Users' of quality practices to the performance of 'Low Users' of quality practices. The result was significant for all three performance variables i.e. Quality Performance (where performance is measured on functional level), Quality System performance (organisational level) and Business Performance. The implication of this result is that the study broadly supports the adoption of quality management practices in the South African contact centre industry. At a high level, this finding feeds into the core objective of this study, where the empirically demonstrated positive outcome of quality practices supports its adoption. The

performance benefits of a quality program shows a positive return on resources invested in such programs.

The importance of **top management support** that manifest in the implementation of leadership quality practices have been emphasised by early prominent authors, across academic studies, international awards criteria and domestic / international standards. This study tested this assertion in the South African contact centre industry by investigating the relationship between leadership practices and the deployment of core quality practices such as customer, human resource, operational, infrastructure and relationship practices. The regression results show a strong relationship between leadership practices and all of the core quality practices. The implication for practice is that leaders should be cognisant that their active involvement is essential for the successful implementation of a quality program.

Given the wide range of quality practices advocated by academic and prescriptive literature, this study sought to assess **the impact of the various groups of practices on performance**, firstly in isolation at a functional level and also at an organisational level. Here it was found that all five groups of core quality practices have a strong positive impact on functional performance (i.e. where performance metrics are directly related to the group of practices). The direct path coefficients were all strong ranging from .672 for relationship practices to .792 for customer practices. A similar result was found for impact of quality practices on an organisational level with the indirect effect of core practices on quality system performance ranging from .534 for infrastructure practices to .644 for human resource practices. The relatively low difference in the coefficients indicate that all groups of quality practices are important for performance on a functional and organisational level advocating the implementation of full-blown quality programs. This implication is supported by the result obtained when the quality practices were tested for synergistic value. The positive result confirms the interdependent nature of quality practices and implies that superior performance may be achieved by implementing a combination of practices as opposed to only certain quality practices in isolation. However, should piecemeal program implementations be required, the results advocate the prioritisation of Customer and Human Resource practices to realise maximum returns on resources invested.

The model also considered **the impact of quality practices on business performance**. Here too, the relationship between all quality practices and business performance was found to be strong and positive with indirect coefficients ranging from .431 for infrastructure practices to .536 for human resource practices. This result firstly supports that implementation of quality practices in an effort to achieve enhanced business results and further supports that implementation of full quality programs to harness the impact of the varied quality practices.

The Impact of Contingency Factors on the Quality Practice / Performance Relationships

The contingency factors that could potentially impact on the quality practice / performance relationships were tested by comparing zero-order and partial correlations between a single higher-level quality practice construct and performance at a functional and organisational level (including business performance). The first group of six contingency factors considered were those found in the literature and the second group included six demographic variables.

It was found that the factor '**Management Knowledge**' has the highest impact on the practice performance relationship. This finding provides empirical evidence to support initiatives that aim bolster management skills in the industry as suggested by Benner (2006) and Willcocks et al (2012).

'**External Demand for Quality**' was found to be the second most influential factor on the quality practice / performance relationship. This evidence provides support for motivating the roll-out of quality programs across the industry by industry bodies such as BPeSA and CCMG. This would especially be applicable to new industry entrants and those centres competing or aspiring to compete in the international environment.

Finally, an open '**Culture**' was found to have a positive impact on the quality practice performance relationship. Cognisance of aspiring to or maintaining an open culture will support centres looking to take advantage government support for moving the industry higher up the value chain. Providing such services require a more mature environment with open communication and flexible operating procedures.

The six **demographic factors** tested for impacting on the quality practice performance relationships (viz. Province, Service Type, Markets Served, Ownership, Size and Age) were found to have a negligible impact. The implication of this result is that centres may have confidence on the outcomes of quality programs independent of their profiles.

This result provides partial support for both the universal and contextual approaches to quality management.

7.3.2. SIGNIFICANCE OF RESEARCH

The significance of this study is addressed from both an academic and practical point of view.

Academic Significance

Efforts to develop quality management theory have been on-going for the past three decades. Early evidence of such work may be found in articles produced by Saraph et al (1989). These

early efforts focused on developing reliable and valid measurement instruments that could be used for empirical studies. Inputs were derived from mostly prescriptive literature produced by prominent contributors such as Deming (1981), Juran (1986) and Crosby (1979).

Since quality management was first introduced in manufacturing industry, most of the earlier measurement instruments had a manufacturing bias. Later attempts claimed to be applicable to most industries (including service industries) however none were found to be suitable to the contact centre industry. It follows that the first major academic contribution of this study is the development of an instrument specific to the contact centre industry. It draws on inputs from early prescriptive literature, key academic studies, internationally recognised quality awards criteria, domestic and international quality standards and prominent industry reports. The content validity of the instrument was confirmed by industry experts and a pre-test at prominent contact centres. Confirmatory Factor Analysis confirmed the construct validity while the criterion validity was established by strong and positive correlations between the practice and performance variables. The reliability of the instrument was shown to be very strong by the high reliability coefficient values. The instrument may be used by researchers in related fields of study.

Beyond establishing a reliable and valid measurement instrument, the key academic contribution of the study revolves around the modelling of the quality practice / performance relationships in the contact centre industry. While these relationships have been modelled in various industries and across many locations (details of which are included in the literature review), this is the first empirical quality management study in the contact centre industry in South Africa. Key findings include the confirmation of the importance of top management support to the successful implementation of quality programs, the positive and significant impact of all groups of quality practices on functional and organisational level performance (operational and business), the synergistic value in the deployment of quality practices (supporting the interdependence of practices) and the positive impact of certain contingency factors on the practice / performance relationship thus partially supporting both the universal and contextual approach to quality management. These findings add to the existing quality management body of knowledge and contribute to the development of quality management theory.

Practical Significance

Having developed a reliable and valid quality measurement instrument, contact centre industry practitioners may use the instrument as a framework to audit the implementation and performance of quality practices in their own organisations. The instrument may also be used by external client and industry bodies as a national benchmark against which organisations may be measured. This feeds well in the South African government's aim to build the international competitiveness of

an industry that has demonstrated its positive contribution to mitigating the youth unemployment problem.

The essential output of the study is a "Quality Management Practice / Performance Model for the South African contact centre industry". By confirming the positive and significant impact of all groups of quality practices on both the functional and organisational performance level together with confirming the synergistic value in the deployment of quality practices, the model essentially support the implementation of full-blown quality programs. The model does however provide insight into the impact of specific practices that may inform practitioners looking for cost-efficient piecemeal implementations. Such knowledge will help guide quality practitioners to focus their limited resources on quality practices that have empirically demonstrated the highest impact on business performance. Here the results show that Customer and Human Resource quality practices should be prioritised. This is considered vital, given that the achievement of higher quality output needs to be balanced with the key objective of maintaining lower costs. Finding the correct balance between quality and cost will help maintain and grow South Africa's competitive position internationally. These insights are complemented by the results obtained regarding the impact of contingency factors on the quality practice / performance relationships. An understanding of these factors will further assist practitioners in their quality program implementations.

Due to the comprehensive nature of the study both in terms of the field of quality management and its national industry reach, it is expected that this model may be considered as a context-specific industry reference going forward. The credibility of the work is enhanced by the support obtained from the major national trade associations.

Finally, South Africa is considered a leader in the area of ‘Quality Standards for Contact Centres’, a position validated by fact that the development of the ISO Standards for Contact Centres was chaired in South Africa. This work would further bolster the countries leadership role in this field.

A point worth noting is that given the similarity of contact centre across the globe (Benner et al, 2007) this study could be considered internationally relevant.

7.3.3. RESEARCH LIMITATIONS

The following limitations of the research should be noted:

a. Having employed a survey method, this research is subject to a fundamental limitation inherent in survey designs i.e. questions may be subject to the respondent’s interpretation without a researcher available (as in an interview) to provide clarity.

b. The study employs a cross-sectional sample at a point in time. While causal relationships may be inferred, they cannot be claimed to persist in time. A longitudinal design would address this limitation to some extent.
c. While perceptual data is acceptable in this type of research, it invites considerable subjectivity based on the respondents' perceptions. This may further be influenced by responding executives wanting to project a positive image of themselves and their organisations. Independent verification of responses would significantly improve the reliability of the data.

These limitations could be addressed in future related studies.

7.4 RECOMMENDATIONS

The following recommendations may enhance the future-relevance, sophistication and practical application of this work:

a. As alluded to in Chapter 2, with social media and mobile applications being the preferred communication mediums of younger generations, it is expected that digital interactions will increasingly exceed traditional phone contacts. Against this background it is recommended that in future, the measurement instrument developed in this study be re-aligned with the prevailing and continuously evolving communication landscape.
b. From a methodological point of view, it is recommended that Structural Equation Modelling (SEM) be considered for the hypotheses testing as opposed to Path Analysis that was employed in this study. SEM would provide more sophisticated fit statistics such as the 'Goodness of Fit Index' (GFI).
c. While the South African government has implemented incentive and training programmes to boost the local contact centre industry, there exists a significant gap between the success of the larger industry players and the overwhelming number of business failures amongst smaller operators. It is recommended that the comprehensive quality measurement instrument developed in this study be considered as a benchmark against which SMME operators are measured, supported and developed. This would fast-track the small business sector in an effort to counter the youth unemployment crisis.

7.5 FUTURE RELATED RESEARCH DIRECTIONS

The following may be considered for future related work:

a. While the measuring instrument was developed for, and the modelling performed specifically in the contact centre industry, the methodology followed could be adapted for other

industries. Here investigations need not be limited to quality management but may be extended into any field where practice and performance dimensions are identifiable.

b. As pointed out by Benner et al (2007), contact centres globally share similar characteristics, a finding specifically inclusive of South African contact centres. Further endorsement of global similarities is evidenced in the international participation in the development of international industry standards such as ISO 18295:2017. The current study could be expanded internationally where the results can be used as a benchmark to compare the performance of major players.
c. Finally, as recognised by the South African government, Quality Management may be considered as a key pillar in the development of any industrial sector. Future work could extend the current study as part of an assessment of the impact of quality management on economic development.

7.6 CHAPTER SUMMARY

This chapter discussed the main focus areas of the study. The research setting, problem statement, objectives and research questions were initially recapped followed by a discussion of the two key antecedent outcomes of the study. These were the development of a new quality management measurement instrument and the exploration of the extent of quality practice deployment in the industry. Based on the demonstrated reliability and validity of the measurement scales, the instrument may be used academically for related research or practically for internal and external quality audits. Exploration of the deployment of quality practices revealed that South African contact centres are generally 'High Users' of quality practices although there are differences in the extent of deployment based on certain criteria such as 'Province'.

The discussion under the quality practice / performance model covered the importance of top management commitment, the impact of quality practices on functional and organisational performance, synergistic value in the deployment of quality practices and the impact on business performance. The key finding here was that all quality practice groups impact on performance both at the functional and organisational level together with demonstrating synergistic value. The major implication is that the optimal approach to quality management is to implement full-blown quality programs, however, should piecemeal implementations be required, then Customer and Human Resource-related quality practices should be prioritised. Finally, the impact of contingency factors on the quality practice / performance relationships were discussed, partially supporting both the universal and contextual approaches to quality management. The chapter concluded with a summary and implications of the outcomes, the study significance and limitations, recommendations and possible directions for future related work.

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