

Evaluating quality management principles in public schools in the Tshwane District towards improving performance.

By

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DECLARATION

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SIGNATURE

6 March 2023

DATE

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DEDICATION

This study is dedicated to my late father, Tau Andries “Fish” Phalane.

ABSTRACT

ISO 9001 Quality Management Principles (QMPs) factors were initially developed for manufacturing industries; however, according to literature, they can be used in schools to improve academic and non-academic morale, the productivity of educators and learners, and to deliver higher quality services to school stakeholders. According to literature, given the importance that ISO 9001 QMPs, considered as factors for this study, have on the improvement of the service sector, it is necessary to increase the studies and the body of knowledge on the subject.

The study focused only on secondary public schools in the Tshwane District, Gauteng, as these are the schools that have recorded lower academic performance, compared to the Independent Examinations Board (IEB) schools. The objectives of this study were to identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District, and to identify the factors that support the QMPs (factors) in improving school performance in the Tshwane District. The reviewed literature in this study indicated that the evaluated seven QMPs (factors) are linked to the research problem, the research questions and research objectives of the study, and the reviewed literature focused on the niche areas of QMPs in the South African school context and the gaps identified in the niche areas. A quantitative research approach was adopted for this study. A cross-sectional study stratified the random sampling method which was used to collect data through an online, self-administered questionnaire.

The findings of this study indicate that there is a positive correlation between the seven QMPs factors and the factors that support the seven QMPs factors, implying that the combination of these factors (the seven QMPs and the supporting factors) are significant and influence school performance. The study fills the void in QMPs (factors) literature and serves as a source of reference for future research in the niche area of ISO 9001 QMPs (factors).

Keywords: Quality management, quality management principles, school performance, school leadership, school management, school district.

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LIST OF ACRONYMS

BMR	Bureau of Market Research
CI	Continual Improvement
DBE	Department of Basic Education
GDBE	Gauteng Department of Basic Education
IEB	Independent Examinations Board
ISO	International Organisation for Standardisation
MEC	Member of the Executive Committee
NDP	National Development Plan
NPC	National Planning Commission
OECD	Organisation for Economic Co-operation and Development
PED	Provincial Education Department
QMPs	Quality Management Principles
QMS	Quality Management System
RBV	Resource-Based View
SASA	South African Schools Act
SDGs	Sustainable Development Goals
SGB	School Governing Body
SPSS	Statistical Package for Social Science
URL	Uniform Reference Locator
UNISA	University of South Africa

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter presents a cohesive and integrated blueprint structure of this study. Moreover, this chapter provides an overall view of the background of the study, problem statement, research questions, research aim, research objectives, research statement, research methodology, validity and reliability, ethical considerations, and the significance of the study. Figure 1.1 provides the outline of the chapter.

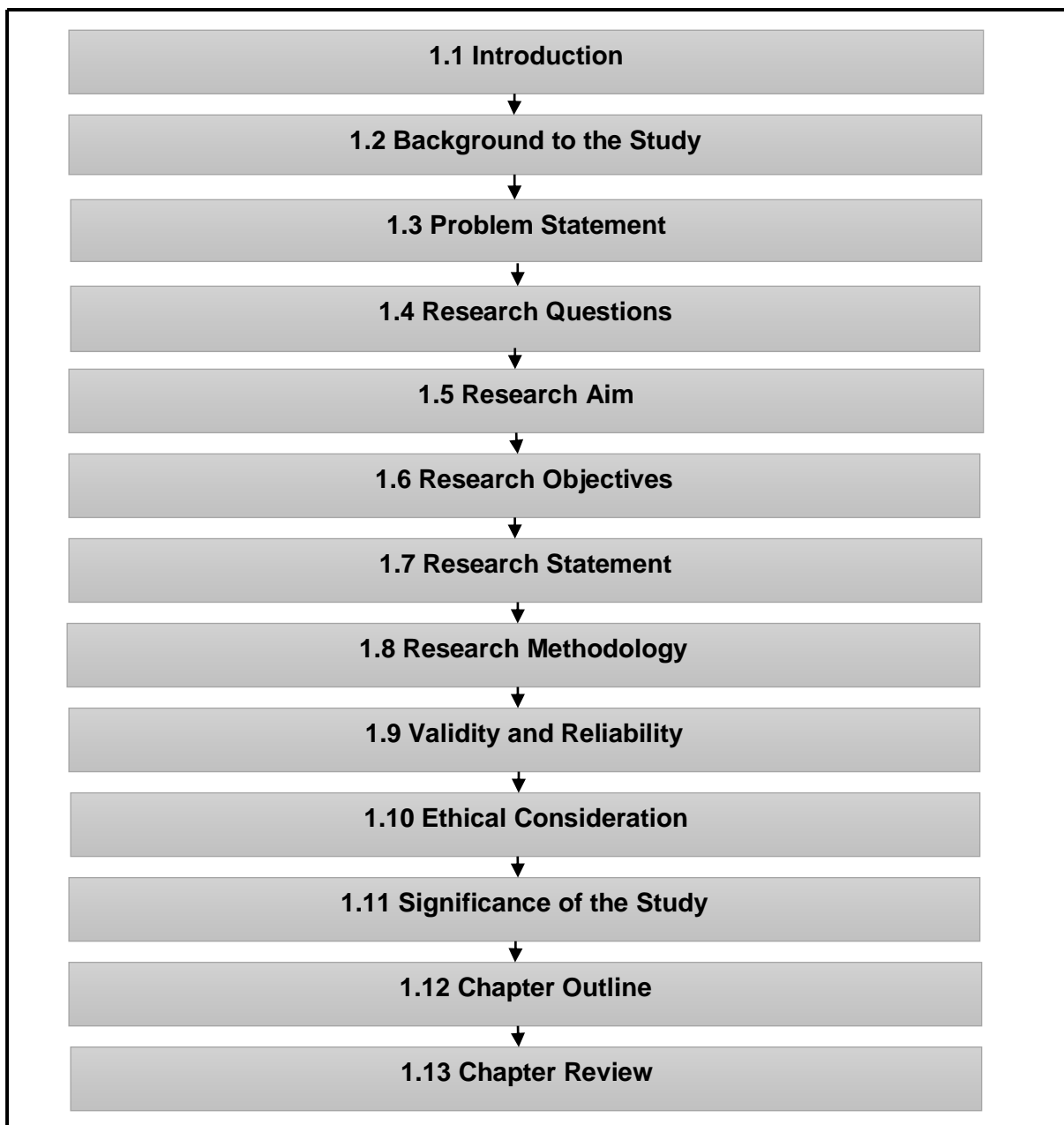


Figure 1.1: Chapter 1 outline

Source: Own compilation (2022)

1.2 Background to the Study

Naicker (2018:36) focused on the history of education and education support services in South Africa from 1863 to 1998, and found that, in the 18th and 19th century in South Africa, there was little provision for any type of school education management system.

According to Mckeever (2017:118), South African education consisted of a mixture of different educational systems, with three main distinct systems.

- The first system supported public schools that were developed by the English colonial state, after the formation of the Union of South Africa in 1902.
- The second system was set up in reaction to the establishment of the English system of public schools.
- The third system was primarily comprised of schools established and operationalised by Christian missionaries. The central piece of legislation that changed education for the majority of South Africans was the Bantu Education Act of 1953, which was imposed on South African societies by the apartheid system that racially separated educational facilities.

This study focuses on evaluating the seven quality management principles (QMPs) (factors) to improve school performance in the Tshwane District. The seven QMPs (factors) impacted this study. According to Fernandez-Diaz, Rodriguez-Mantilla and Abad (2016:99), the implementation of the QMPs (factors) model sees an improvement in school management, the establishment of improvement teams, the evaluation of individual and group performance, and the measurement of staff satisfaction. Moreover, Brinia, Poullou and Panagiotopoulou (2020:66) support this statement by asserting that the QMPs (factors) managerial model introduced the principles of modern administrative science to pedagogy and, therefore, their application in schools will ensure that schools operate effectively and efficiently, and achieve the expected objectives.

According to Nawelwa, Sichinsambwe and Mwanza (2015:717), there are areas in schools which can be the outcomes of the QMPs (factors), namely excellent examination results, outstanding educator performance, and effective and efficient school leadership and management. According to Sfakianaki (2019:3), the quality management philosophy may be able to provide a remedy for the increased pressure and demand for quality that the education sector is currently encountering. Furthermore, schools must embrace the QMPs (factors), if they seek to survive and succeed in the long run. Khurshid, Amin and Ismail (2018:2570) assert that scholars have identified a set of key variables to achieve quality

management, namely the QMPs. Additionally, QMPs (factors) are philosophies that can guide and govern public schools to quality management.

According to Vijaya (2015:1091), Deming (1982) stated that quality cannot be achieved without educating leadership on the importance of quality principles (factors) and methods. Moreover, Vijaya and Antony (2018:858) mentioned that, for quality excellence to improve performance, contributions by Deming, Crosby and Juran have provided a concrete foundation to address the challenges that prevent continuous improvement.

Naicker (2018:29) further stated that, in the United Kingdom, education has become a major political issue, a major focus of media attention, and the recipient of a constant stream of initiatives and interventions from government. The same applies in many other countries around the globe. Apart from this, multinational organisations such as the United Nations, the European Union, the Organisation for African Unity, the International Monetary Fund and the World Bank play a crucial role in the process of education policy formulation and implementation across diverse socio-political contexts. Therefore, this study contributes to the United Nation's Sustainable Development Goals (SDGs) (2030), more particularly, goal four (quality education), by contributing to the transformation of inclusive and equitable quality education within the South African context, (Opoku, 2016: 1151).

This study was conducted in the context of public schools, particularly evaluating the seven factors of QMPs to improve school performance in the Tshwane District. The next section identifies and discusses the problem statement of this study that supports the background of the study.

1.3 Problem Statement

According to Fernández-Díaz, Rodríguez-Mantilla and Abad (2016:97), the implementation of quality management systems such as the ISO 9001 in the school context has increased in many European countries, and Spain is one of the countries where some autonomous schools decided that the ISO 9001 quality management system could be useful. Consequently, this study adopted the ISO 9001 as a quality management system to be practised in South African public schools, particularly in the Tshwane District, to improve school performance.

Quality management studies by Elahi and Ilyas (2019:578-579) in Pakistan have revealed that there is a lack of studies that guide the implementation of quality management systems in public schools, and that there has been no formal study conducted to evaluate the relationship between process approach and schools as a business unit. In addition, no

formal study in quality management literature has been conducted thus far to evaluate the relationship between customer focus and schools as a business unit.

Furthermore, the study on QMPs literature by Fernández-Cruz, Rodríguez-Mantilla and Fernández-Díaz (2020:1185) in Spain stated that there are very few studies, such as the studies titled, *Factors associated with the impact of implementing quality management systems at schools: a multilevel analysis*, and *The impact of the application of ISO 9001 standards on the climate and satisfaction of the members of a school*, which are able to confirm whether the International Organisation for Standardisation (ISO) brings true changes which are sustainable over time and lead to improvements in schools.

Moreover, the study on QMPs by Senol and Dagli (2017:4860) in Turkey revealed that research on the measurement of stakeholder satisfaction with the quality of school services is scarce at secondary school level. Additionally, the study on QMPs literature by Ibrahim *et al.*, (2016:205) in Malaysia revealed that research and literature on customer focus practices in schools is still limited. Furthermore, Soria-García and Martínez-Lorente (2020:49) in Spain pointed out that quality management in schools had a positive effect on school performance; however, empirical evidence is scarce on QMPs having a positive effect on school performance.

Therefore, in the South African context, the studies by Spaul (2015:114), Mamabolo, Malatji and Mphahlele (2022:1), and Tachie and Mancotywa (2021:1), found that public schools' leadership and management are not held accountable for how they manage school resources, and how they allocate resources to school activities using quality management systems, such as the ISO 9001, and there is a lack of implementation of quality management systems in South African public schools, and the studies further found that school leadership and management conduct quality management systems for monetary rewards, instead of school quality assurance. Additionally, the studies revealed that, school principals are failing to manage quality management systems, such as the ISO 9001 in public schools, as they are responsible to manage quality in schools, and as a result, the failure to manage quality management systems in public schools negative impact the school performance.

Therefore, the National Planning Commission (NPC) (2010:15) of the National Development Plan (NDP) (2030) correspondingly states that several complex issues play a role in the quality of public schools, and the main problem lies in educator performance and quality management of school leadership. It should be noted that there have been no revisions of the NPC (2010) since the document was published in 2010 in South Africa, as it remains a White Paper document. The rationale for the articulation of the problem is that one of the 10

critical actions outlined in the NDP (2030) of the NPC (2010) is creating an education accountability chain, due to the fact that school performance cannot improve, unless accountability is reinforced throughout the system (NPC, 2010: 55).

The possibility of adopting the seven QMPs (factors) in public schools is supported and motivated by the South African Schools Act, 1996 (Act No. 84 of 1996), Chapter 3, on the governance and professional management of public schools. Chapter 3 of the South African Schools Act, 1996 states that, if there is any school performance management plan that needs to be tested, and the head of department and district management approve the management plan, the school principals must report to the head of department, district manager and governing body on the progress made in implementing that plan.

The South African Institute of Race Relations (2018:2) states that the report of the Organisation for Economic Co-operation and Development (OECD) of 2015 ranked South African basic education as one of the low performing, compared to other nations in the world. In addition, the Statistics South Africa (Stats SA) issued a report in May 2019, stating that the problems still being experienced by public schools in South Africa are the lack of resources, and poor quality of school leadership and management.

The gap in this study, which is void of any quality management background, is how quality management can be practiced in public schools, and what QMPs factors can be employed for implementing quality in public schools. Therefore, the researcher is investigating what QMPs factors can be used to improve public school performance, and the quality management system of ISO 9001 is adopted in the study to identify the most significant factors of QMPs that improve school performance in the Tshwane District, and the factors that support the seven QMPs (factors) in the Tshwane District; and to provide recommendations on the factors that improve school performance in the Tshwane District.

As outlined in chapter 9 (improving education, training and innovation) of the NDP 2030 (2012:294), the major shortcoming of South African schools is the quality of school performance, and the main contributing factors include educators, school governance, school leadership, school support by districts, and the lack of co-operation between key school stakeholders, (NDP 2030, 2012:302). There are also no revisions of the NDP 2030 (2012) document because it was published in South Africa, in 2012 and it remains a White Paper document in the country.

Therefore, the identified problem statement for this study was, *The significance of quality management principles (factors) to improve school performance in the Tshwane District are unknown.*

In the sections that follow, the research questions, research aim and research objectives that emanate from the problem statement are identified and discussed.

1.4 Research Questions

A research question is a specific way of stating the research problem in the form of a question, (Horn, 2012:55). According to Mattick, Johnston and De La-croix (2018:104), a research question is a question that a research project sets out to answer. Saunders, Lewis and Thornhill (2019:187) states that, descriptive studies provide precise profiles of persons, events, or situations. Moreover, descriptive research determines or identifies the situation as it is, and is aimed at casting a light on current issues and problems, and it is used to explain and validate findings. According to Van Zyl (2014:197), the purpose of descriptive research is to describe the current state of affairs at the time of the study. With regard to the problem statement identified, the study posed the descriptive research questions. The following are main research questions and research sub-questions.

1.4.1 Main research question:

- *What are the most significant factors of quality management principles to improve school performance in the Tshwane District?*

1.4.2 The research sub-questions:

The research sub-question 1:

- *What factors support quality management principles in the Tshwane District?*

The research sub-question 2:

- *What recommendations can be made on the factors that improve school performance in the Tshwane District?*

1.5 Research Aim

The aim of the study is to evaluate the most significant seven QMPs (factors) and also, to evaluate the factors that support the seven QMPs (factors) to improve school performance in the Tshwane District.

1.6 Research Objectives

According to Hair, Hult, Ringle, Sarstedt, Danks and Ray (2021:22), a research objective is what the research seeks to achieve by the end of the research. The research objectives are divided into primary and secondary objectives.

1.6.1 Primary objective:

- *To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District.*

1.6.2 Secondary objectives:

In support of the primary objective, the secondary research objectives 1 and 2 were as follows:

Secondary research objective 1:

- *To identify the factors that support quality management principles in the Tshwane District.*

Secondary research objective 2:

- *To provide recommendations on the factors that influence school performance in the Tshwane District.*

The following section presents the research statement of the study that describes the trajectory of the study.

1.7 Research Statement

The study evaluated the seven QMPs (factors) in public schools in the Tshwane District towards improving performance. According to De Menezes and Wood (2015:106), QMPs (factors) that have been traced back to 1949 have emerged to the service sector to improve performance. Sahney (2015:327) stated that, in the beginning from 1950, scholars, such as Deming, Juran, Crosby, Feigenbaum and Ishikawa (1950-1999), taught quality ideas for more than 40 years. Apart from this, the quality management gurus are credited with proposing QMPs (factors) underlying the quality management concept.

The identified problem statement of this study was, *The significance of quality management principles (factors) to improve school performance in the Tshwane District are unknown.* The primary objective of the study was, *To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District,* and the secondary research objective 1 was, *To Identify the factors that support quality management principles in the Tshwane District.*

The identified problem statement was investigated because the reviewed literature on the seven QMPs (factors) focused on the niche areas within the South African schools' context and the gaps identified in the niche areas, and provided insights into the niche areas regarding the seven QMPs (factors) discussed that formed the basis of this study. The problem statement investigated was linked to the research aim, and advocated for the achievement of the primary and secondary research objectives.

To achieve the primary research objective, namely, *To identify and evaluate the most significant factors of the seven QMPs (factors) to improve school performance in the Tshwane District*, and the secondary research objective 1, namely, *To identify the factors that support quality management principles in the Tshwane District*, this study followed a quantitative research method, and the research instrument tool that was employed to collect data was a self-administered online survey questionnaire.

The next section introduces the research methodology adopted in this study.

1.8 Research Methodology

The research paradigm followed a quantitative research approach that assisted the researcher with identifying and evaluating the most significant factors of QMPs (factors), and identifying the factors that support the QMPs (factors), which were derived from the literature review. The online survey questionnaire was used to collect data. Thereafter, the reliability statistical data analysis, descriptive statistical data analysis, and the inferential statistical data analysis were presented and interpreted.

The research onion was adopted to assist the researcher with investigating the identified research problem of the study, and to identify and evaluate the QMPs factors and the supporting factors to the QMPs factors. The research onion discussed the research philosophy that addressed how data in this study was collected, analysed and interpreted. Additionally, the research onion discussed the approach to theory addressing the deductive approach to theory, which tested the literature review theory based on data collected. Moreover, the research onion discussed the cross-sectional time horizon in this study to investigate the identified research problem by engaging with a cross-section of respondents at the specific time of conducting the study. Consequently, the research design of this study is discussed in greater detail in Chapter 3, section 3.2.

The following section explains the validity and reliability of the study.

1.9 Reliability and Validity

1.9.1 Reliability

In this study, reliability was measured by linking the variables of the constructs to determine whether the scale is reliable to measure the variables of the constructs that are tested. This was achieved by the results presented in the study, showing that the reliability of all the seven QMPs (factors) is adequate. This confirmed the accuracy of the online survey questionnaire and the integrity of the responses obtained.

1.9.2 Validity

In this study, the construct validity measurement was followed to test the variance among the constructs of the study. This was achieved by ensuring that the research instrument used was accurate for the constructs of the study, and the research instrument was presented to experts to pilot and ensure that the research instrument was measuring what it was intended to measure. The validity and reliability of this study was exhaustively discussed in Chapter 3, section 3.7.

The following section explains the ethical considerations of the study.

1.10 Ethical Considerations

Section 3.10 in Chapter 3 largely discusses the permission that was granted to engage with the selected population of the study, privacy and confidentiality of participants, and informed consent that was a voluntary agreement by participants to participate in the study.

The following section presents the significance of the study, explaining the importance of the study.

1.11 Significance of the Study

The study contributed to the body of knowledge by identifying the most significant factors of the seven QMPs for improving school performance in the Tshwane District, identifying the factors that support the seven QMPs (factors) in the Tshwane District, and providing recommendations on the factors that improve school performance in the Tshwane District. This will equip school leadership and management with better insights to identify the factors to employ in schools to improve school quality, such that the available resources and processes are implemented ultimately to enhance schools' performance, (Fernández-Cruz *et al.*, 2019:286). More importantly, the study will guide school leadership and management with insights relating to the identification of the significant factors that are affecting the implementation of the QMPs factors to improve school performance, given the QMPs

literature revelation that there are few studies assessing the true impact of QMPs in public schools, (Rodríguez-Mantilla *et al.*, 2018: 1589).

Moreover, different initiatives and activities in the implementation of the seven QMPs (factors) in schools are proposed in the study for effective and efficient school leadership, and management to improve school performance. Consequently, the NDP 2030 (2012:302) asserts that the main contributing failures of South African public schools to improve performance are a lack of co-operation between key stakeholders, school support structure from school district offices and, more importantly, these failures are characterised by the lack of school leadership and management accountability in schools. The next section explains the chapter layout of the study from Chapter 1 to Chapter 5, discussing what is contained in each chapter.

1.12 Chapter Layout

The outline of the study is as follows.

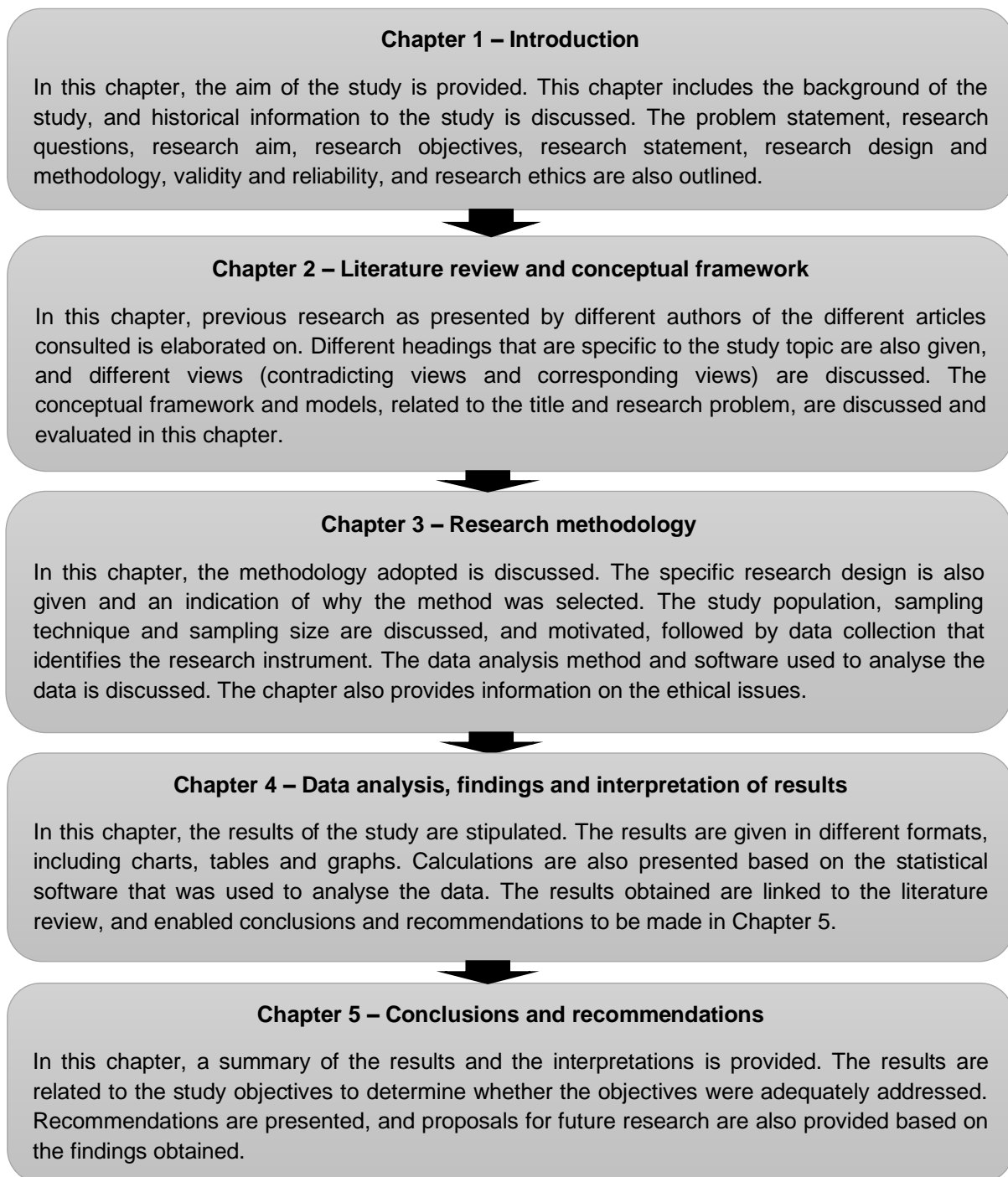


Figure 1.2: Chapter outline illustration

Source: Own compilation (2022)

1.13 Chapter Review

Chapter 1 outlines the importance of the proposed research study regarding the evaluation, factor identification and practice of the QMPs in public schools. Section 1.1 introduces the chapter. Secondly, section 1.2 discusses the background of the study. Thirdly, section 1.3 discusses and identifies the problem statement of this study. Subsequently, section 1.4 identifies the main research question and the research sub-questions, and the research aim is identified in section 1.5. Section 1.6 identifies the primary research objective and the secondary research objectives. Then, section 1.7 discusses the research statement of the study. In section 1.8, the research methodology for the study is identified, and in section 1.9, its validity and reliability are explained. Section 1.10 follows with a discussion of the ethical considerations. Then, section 1.11 discusses the significance of this study. The chapter outline is illustrated in section 1.12. Finally, section 1.13 outlines the chapter review.

The next chapter discusses a comprehensive and insightful literature review of this study.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Chapter 1 contains the background of the study, problem statement, research questions, research aim, research objectives, research statement, research methodology, validity and reliability of the study, ethical considerations of the study, significance of the study, chapter outline, and chapter review. This chapter focuses on the literature review on the available and relevant literature, as well as highlighting findings from various local and international studies. Furthermore, this chapter also focuses on the niche areas of quality management in South African schools, gaps identified in the niche areas, and seminal works of quality management gurus and pioneers. The purpose of this chapter is to critically discuss and analyse the different views (corresponding and contradicting) as presented by various authors. Moreover, the purpose of this chapter is to gain an insight into what quality management is and the area of quality management. For these reasons, this chapter discusses the seven QMPs factors and quality management in the Tshwane District towards improving public school performance. Accordingly, this chapter unfolds as outlined in Figure 2.1.

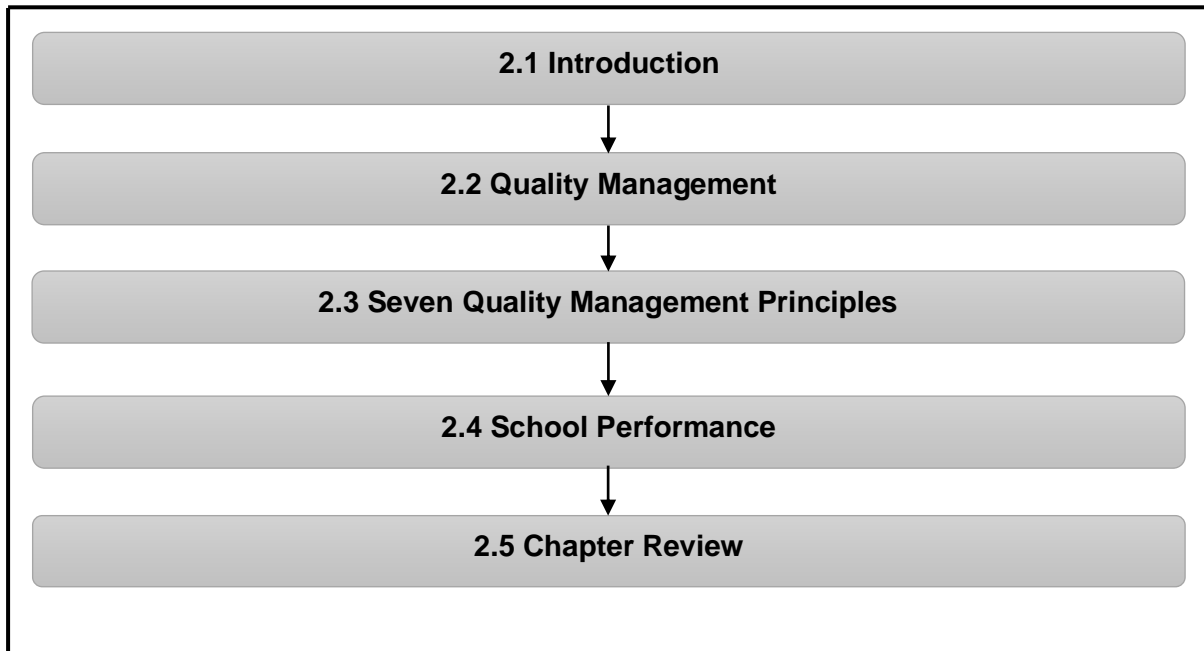


Figure 2.1: Chapter 2 outline

Source: Own compilation (2022)

Consequently, Figure 2.2 conceptualises the title of this study, and indicates the structure of this chapter that comprises the main constructs of quality management, the seven QMPs, and school performance. Therefore, the variables of this chapter have been developed from the main constructs. Imenda (2014:188) defined conceptual framework as an image or symbolic representation of an abstract idea. Additionally, Imenda (2014:189) asserted that the researcher had to synthesise the existing views in the literature concerning a given situation, both theoretical and from empirical findings. The synthesis may be called a conceptual framework, which essentially represents an integrated way of looking at the problem. Therefore, Figure 2.2 provides guidance and an overall view of what is contained in Chapter 2.

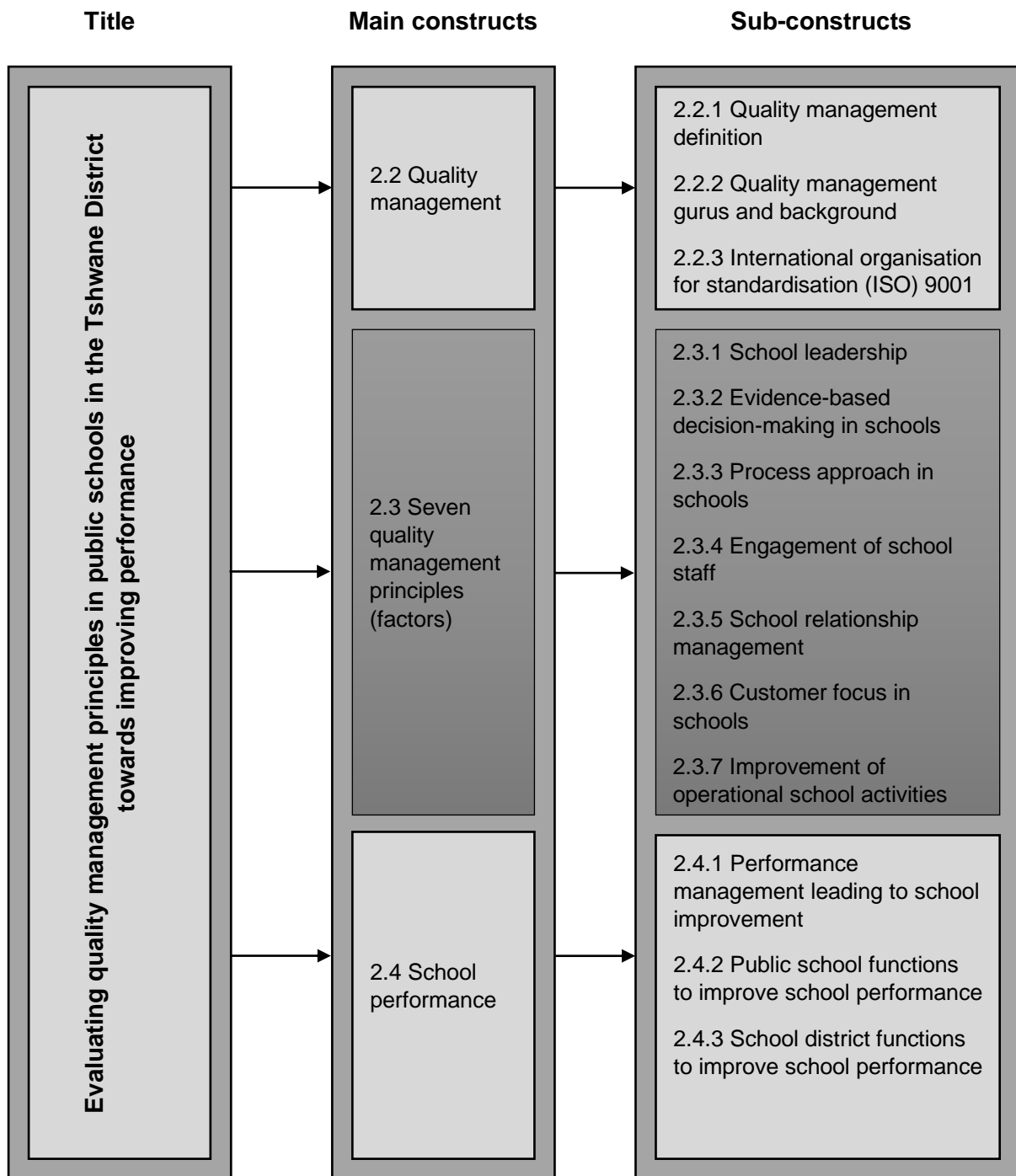


Figure 2.2: The structure of the literature review.

Source: Own compilation (2022)

2.2 Quality Management

This section firstly discusses and defines what quality management is. Secondly, the section discusses the seminal work of quality management gurus and background of quality management. Finally, the section discusses the development of ISO 9001:2015 that was employed in this study and its impact on public schools.

2.2.1 Definition of quality management

In defining quality management, Table 2.1 summarises different definitions by various sources and theories of quality management gurus that equally have the same meaning, but differ in explanation.

Table 2.1 Definitions of quality management

Definition	Source
Quality management as an integrated organisational effort designed to improve quality at top management level, middle management level, and lower management level	Mehralian, Nazari, Nooriparto, and Rasekh (2017:111)
Quality management as a managerial philosophy that should be reflected in an organisation's adoption of integrated managerial systems aimed at improving performance	De Menezes and Wood (2015:106)
Quality management was defined by the gurus (Feigenbaum, Crosby, Crosby, Juran, and Gryna) as "value" (Feigenbaum, 1951), "conformance to requirements" (Crosby, 1979), "defect avoidance" (Crosby, 1984), and "creating a strategic vision" (Juran & Gryna, 1988)	Sahney (2015:327)
Quality management as a strategic undertaking through strategic objectives and operational improvement	Yaya, Marimon, Llach, Bernardo, Casadesus (2017:220)
Crosby (1979) defined quality management as a measurable action based on tangible targets, rather than experience or opinions	Vijaya (2015:1091-1095)
Juran (1986) defined quality management as a concept of managerial breakthrough that could be achieved through undertaking strategic objectives	
According to Houston (1988), quality management is a commitment of leadership and its active striving for strategy, and constant application towards the strategy to improve performance	
Quality management means using strategies to meet and exceed the needs and expectations of customers by understanding customers and their requirements and expectations	Juran and Godfrey (1999:14.4)

Source: Own compilation (2022)

Table 2.1 explains the similarities and common goals of quality management that can be used to improve quality at the top management level, middle management level, and operational management level of public schools. Additionally, Table 2.1 explains the quality management common goals that are appropriate for adoption for organisations to ensure customer satisfaction, as well as improving school performance. Table 2.1 is employed in this study to provide the researcher with insights into quality management, as well as giving an understanding of the objectives of quality management that will have to be adopted by public schools' leadership and management in this study. Consequently, based on the common objectives of quality management defined in Table 2.1, this study adopted the following definition that can be linked to the public schools:

Quality management as a management philosophy, strives to achieve customer satisfaction through superior performance (Bouranta, Psomas, Suárez-Barraza, & Jaca, 2019:894).

The next section discusses the background of quality management and its pioneers.

2.2.2 Quality management pioneers and background to the study

According to Sahney (2016:327), quality management was successfully implemented in Japan, USA and Europe with foundations of quality administration across the world in the 1970s and 1980s. However, quality management was initially used by various sectors, and the concept has spread into the services sector as well. Vijaya (2015:1095) mentioned that quality management is a management approach that originated in the 1950s and progressively became more admired in the early 1980s. Veltmeyer and Mohamed (2017:462) further pointed out that, since the introduction of the statistical process control techniques during the 1920s and 1930s, quality management has evolved continually, although it is argued that, after the hype in the mid to late 1980s and, as the number of deficiencies and difficulties became evident from the mid-1990s, the enthusiasm for quality management has declined. According to Sikora and Nowicki (2012:11) the deficiencies and difficulties that contributed to the decline of the enthusiasm for quality management were due to the changing criterion for managing quality that was newly introduced to the quality management standards that required agility, improved efficiency, effectiveness, and resilience from managers, compared to classical quality management standards such as the Total Quality Management (TQM) standard.

Neyestani (2017:2) identified the contributions to quality theory by quality gurus, namely Feigenbaum (1961), Shewhart (1967), Deming (1950) and Ishikawa (1979). Neyestani (2017:2) stated that Feigenbaum (1961) contributed to quality theory by pointing out that quality is a customer determination based on customers' actual experience with the service measured against customer requirements. Furthermore, Shewhart (1967) contributed to

quality theory by providing the fundamental principles of quality, stating that, once the process is under control, future process performance can be predicted on the basis of past performance.

Moreover, Deming (1950) contributed to quality theory by developing philosophies that focus on management involvement, continuous improvement, statistical analysis, goal-setting and communication. Ishikawa (1979) contributed to quality theory by developing methods that seek to improve consistency of performance and reduce variation through identification of key process characteristics. The following section discusses the benefits and challenges of quality management.

2.2.2.1 The benefits and challenges of quality management

The benefits of quality management:

Jaeger and Adair (2016:318) declared that Deming (1982) identified the benefits of quality management as:

- Improving operational measures
- Customer satisfaction through continuous improvement in all organisational processes.

The challenges of quality management:

According to Jaeger and Adair (2016:321), it is important to be aware of the quality management challenges, since they may lead to failure of quality management approaches.

The challenges are as follows:

- Inappropriate organisational culture
- Lack of leadership quality practices
- Inadequate human resource development
- Inadequate resource allocation
- Lack of coordination between departments
- Lack of communication.

Quality management theory in public schools that supports this study is the study conducted by Sfakianaki (2019:3), which pointed out that various valuable school studies in Greece reported improvements in schools, achieved through the implementation of quality management, which include performance and processes. Nawelwa *et al.*, (2015:717) correspondingly stated that the movement for quality in schools is of a more recent origin,

since the surge of interest from in the 1990s onwards, and asserted that, since quality management revolved around improvement, schools were also recognising the need to pursue it and deliver it to learners.

The following sections discuss the international organisation for standardisation (ISO) and the ISO 9001:2015, and how it is applicable to public schools.

2.2.3 International Organisation for Standardisation (ISO)

According to Anoye (2015:201), the International Organisation for Standardisation (ISO) is a worldwide federation of national standards bodies, located in Geneva, Switzerland, which came into existence in 1946 and comprised a network of the national standards institutes of 165 countries, with one member per country. To ensure that the ISO standards remain the state of the art, it is reviewed every five years and, in the case of the ISO 9001 standards adopted in this study, revisions were made in 1994, 2000, 2008, and the latest in 2015 (Anoye, 2015:202).

The next section discusses the ISO 9001 that was published by the ISO.

2.2.3.1 ISO 9001

According to Hussain, Eskildsen and Edgeman (2020:1195), ISO 9001 is defined as a Quality Management System (QMS) that is adopted by organisations to improve their systems for better quality and efficiency. In the public school context, the ISO 9001 can be adopted by school districts and school leadership to improve the school system and schools' performance. Kusumah and Fabianto (2018:942) additionally asserted that the purpose of adopting ISO 9001 is to make improvements on the key policy and strategic planning of organisations. In the public school environment, the ISO 9001 can contribute to improvement in schools when school management utilises the ISO 9001 to make decisions based on evidence that can be translated into policies. Siougle, Dimelis and Economidou (2019:4) stated that ISO 9001 leads to significant operating performance improvements.

Díaz and Martínez-Mediano (2017:4) asserted that the ISO 9001 quality management standards are based on the seven QMPs, which in turn, are applicable to schools. The seven QMPs were developed and updated by the international experts of ISO 9001, which are responsible for developing and maintaining ISO's quality management standards; conversely, the relative importance of each principle varies from organisation to organisation and can be expected to change over time (ISO 9001:2015:1).

According to Fernández-Cruz, Rodríguez-Mantilla and Fernández-Díaz (2019:287), ISO 9001:2015 applies to any organisation, regardless of its size or industry, and more than one million organisations in 160 countries have applied ISO as one of their quality management systems. These organisations use the ISO 9001 standard to help them with organising processes, improve process efficiency and continuously improve performance.

The ISO 9001 QMPs (factors) were employed in this study, due to their effect in the schools setting. The successful adoption of ISO 9001 requires schools to meet several criteria, namely a defined set of governing rules and policies, stability of activities, stability of school management and leadership, well-understood quality processes by all members, standardised methods to guide on-going quality processes, and qualified educators and staff leading the implementation of the ISO standards, (Díaz & Martínez-Mediano, 2017:3). Furthermore, the primary purpose of ISO 9001 in this study was to identify and evaluate the most significant factors of QMPs that improve school performance in the Tshwane District, for example, that the available resources and processes are implemented ultimately to enhance the schools' performance, (Fernández-Cruz *et al.*, 2019:286)

According to Rodríguez-Mantilla, Fernández-Cruz, & Fernández-Díaz (2018:1589), the ISO 9001 impacts this study. Given the importance that the ISO 9001 has in the improvement of service industries such as the public service sector, it is necessary to increase the studies and the body of knowledge on the ISO 9001, especially in schools. However, there have been a few studies in schools, such as the study, *Assessing the impact of ISO:9001 implementation on school teaching and learning processes*, which assesses the true impact of seven QMPs (factors) on schools, and specifies the generic requirements to be met by schools, as well as the importance of continuous improvement, processes and decision-making in schools.

Senol and Dagli (2017:4858) correspondingly stated that, although ISO 9001 was initially developed for manufacturing industries, it can be used in schools to improve academic and non-academic morale, and the productivity of educators and learners; and to deliver higher quality services to school stakeholders. Fernández-Cruz, *et al.*, (2020:1185) further stated that the application of ISO 9001 in schools is widespread, in an effort to improve diverse processes and results in schools; however, there are very few studies, such as the study, *The impact of the application of ISO 9001 standards on the climate and satisfaction of the members of a school*, which are able to confirm whether ISO 9001 brings true changes that are sustainable over time and lead to improvements in schools. Therefore, this study on ISO 9001 fills the void and the gap identified in literature, namely that there are few studies that confirm whether ISO 9001 advocates sustainable change in schools by:

- Evaluating ISO 9001 seven QMPs (factors) in public schools
- Identifying and evaluating the most significant factors of the seven QMPs to improve school performance in the Tshwane District
- Identifying the factors that support the seven QMPs
- Providing recommendations on the factors that improve school performance.

The objectives of this study on ISO 9001 are to assist the researcher with evaluating whether ISO 9001 improves school performance and sustains changes in public schools. The following section discusses ISO 9001 seven QMPs in greater detail.

2.3 Seven Quality Management Principles (Factors)

According to ISO 9001:2015:(3), QMPs (factors) are defined as a set of fundamental beliefs, norms, rules and values that are accepted as true, and can be used as a basis for quality management. QMPs (factors) are relevant to this study, due to the fact that this study focused on identifying the most significant factors of the seven QMPs (factors) to improve school performance in the Tshwane District, as well as the factors that support the seven QMPs in the Tshwane District at top management level, which comprises the school principal's functions; school governance level, which comprises of school governing body (SGB) functions; and operational management level, which comprises school educators' functions.

The seven QMPs (factors) adopted in this study to evaluate quality practices in public schools are school leadership, evidence-based decision-making in schools, the process approach in schools, engagement of school staff, school relationship management, customer focus in schools, and improvement of operational school activities. Figure 2.3 shows the ISO 9001:2015 seven QMPs (factors) improvement diagram employed in this study.

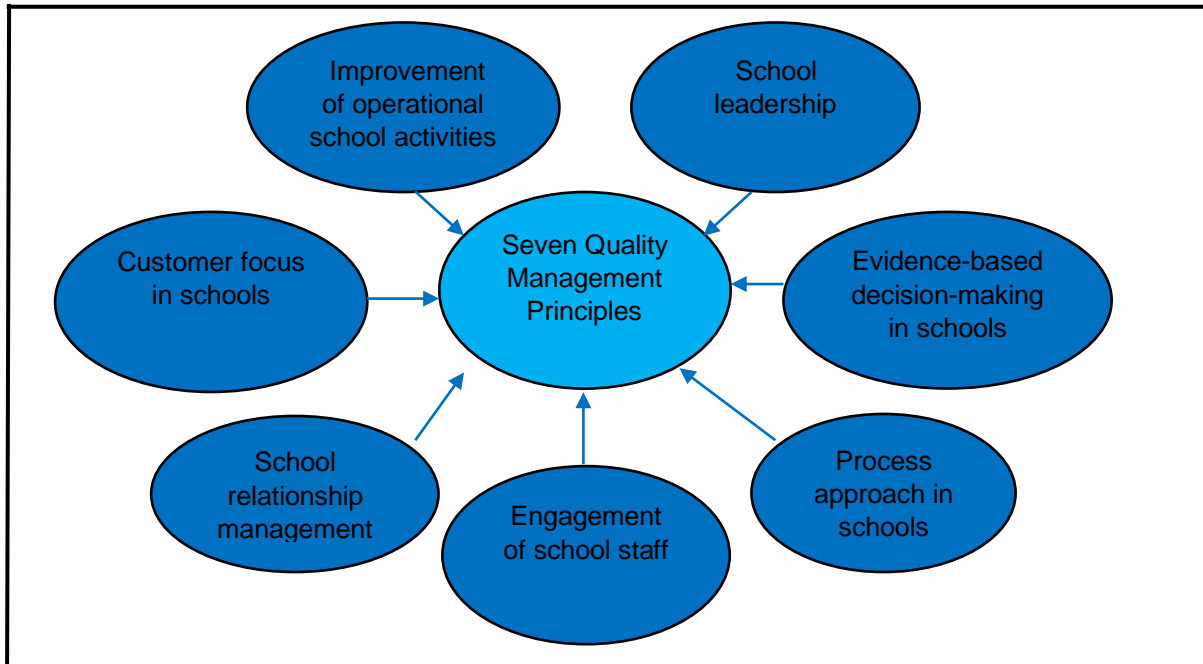


Figure 2.3: Seven quality management principles (factors) improvement diagram

Source: ISO 9001:2015 (1)

Each of these principles (factors) are explained below within the context of this study.

2.3.1 School leadership

Wu (2020:3) defined leadership as an essential element for achieving the successful implementation of quality management, and it reflects personal involvement in setting quality as a strategic direction. In the school environment, Elshaer and Augustyn (2016:1288) stated that school leadership acts as a driver of effective quality management implementation by creating goals, policies, values and systems to fulfil stakeholder requirements that lead to improved school performance. ISO 9001:2015 (4) stated that leaders at all levels establish unity of purpose and direction, and create conditions in which staff are engaged in achieving quality objectives. Furthermore, in defining leadership, Table 2.2 summarises different leadership definitions by various sources and authors in business management studies.

Table 2.2: Leadership definitions.

Definition	Source / Author
Leadership plays a significant role in shaping the quality focus of organisations	Talib <i>et al.</i> , (2014:156)
Leadership is about leading the entire organisation by top-level executives, with the responsibility of all other managers at the middle and lower levels that focusing on operational aspects of leadership	Louw and Venter (2013:416)
Leadership deals with the need for change in an organisation	Stamatis (2013:47)
The ability to manage people, manage stress, manage emotions, manage bureaucracy, and manage communication are requirements for successful leadership	Rocha-Lona, Garza-Reyes, and Kumar (2013:131)
Leadership is about improving the performance of man and machine, improving quality, increasing output and, simultaneously, bringing pride of workmanship to people	Gong and Subramaniam, (2020:2429)
Leadership is defined as the person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate change that will create a viable future for the organisation	Sebastian, Allensworth, Wiedermann, Hochbein, and Cunningham (2019:591), Makgato and Mudzanani (2018:91), Setlhodi, (2018:127), Khan, Nawaz and Khan (2016:1).
Leadership is having a vision that is articulated clearly and forcefully on every occasion.	
Leadership is a function of knowing yourself, having a vision that is well communicated, building trust among colleagues, and taking effective action to realise one's own leadership potential.	
Leadership is the process of persuasion and example by which an individual induces a group to take action that is in accordance with the leader's purpose, or the shared purposes of all.	
Leadership is coping with change	

Source: Own compilation (2022)

This QMP (factor) as a 'planning principle' is linked to this study, due to the aspects it has, such as taking all school stakeholders into account, establishing a clear school vision, setting goals and targets for schools, providing human resources with the required resources and training, and inspiring, encouraging, and recognising individual contribution (Jaccard, 2013:111). Furthermore, the principle (school leadership) is linked to this study due to the problem statement that states, *The significance of quality management principles (factors) to improve school performance in the Tshwane District are unknown*. According to ISO 9001:2015 (4), the key benefits and challenges of the leadership QMP (factor) that school leadership and management will experience are as follows.

The key benefits of school leadership:

- It increases effectiveness and efficiency in meeting quality objectives.
- It provides better coordination processes.
- It improves communication between levels and functions.

- It develops and improves capabilities, and staff to deliver desired results.

The key challenges of school leadership:

- Communicating and acquiring staff buy-in when outlining the mission, vision, strategy, policies and processes.
- Creating and sustaining shared values, fairness and ethical models for behaviour at all levels.
- Establishing a culture of trust and integrity.
- Encouraging an organisation-wide commitment to quality.
- Ensuring that leaders at all levels are positive examples to staff.
- Providing staff with the required resources, training and authority to act with accountability.
- Inspiring, encouraging and recognising contribution by staff.

2.3.1.1 School leadership challenges

According to Wu (2020:3), Deming (1986) emphasised that when managing change, individual training is identified as a critical component to use in implementing significant changes. Furthermore, quality management requires all human resources to receive formal training in quality management concepts. According to Venter (2014:207), when leaders and managers manage change, leadership principles have to be applied, and the principles are: leaders must be future-oriented and anticipate change, leaders open new horizons, and leaders get things done. The leadership principles require leaders to use their absorptive capacity to acquire information from the environment, and use and assimilate the acquired information as a dynamic capability, so that the shared knowledge of the information gained may be applied to the problems encountered.

According to Talib, Ali and Idris (2014:156), information analysis has an indirect effect on results that are mediated through human resources. Conversely, the core practice of acquiring information and its analysis has a direct effect on operational performance. Bytheway, Cronje and Branch (2017:699) support this by stating that leadership is needed when acting on the disruptions that impact quality practices. Moreover, leadership needs to be capable of managing the information, and flexible and agile to respond to change as it happens. Wu (2020:3) emphasises that individual training gives individuals the ability to improve in-process quality control and find solutions for problems as they arise.

In this study, the school challenges apply to school principals. Furthermore, the school challenges assist the researcher in analysing where school principals should adopt the leadership principles to scan and search the school environmental changes to determine the challenges that affects school performance.

According to Ajayi and Oyeniyi (2017: 465), Deming's (2000:23) 14-point management philosophy provides a framework that school leadership considers adopting, and the philosophy can integrate many improvements in schools. Moreover, Deming's 14-point management philosophy on school leadership had an impact on this study, due to the benefits that each philosophy has. The framework is discussed as follows.

- *Create a constant purpose towards improvement* - The purpose of the school system must be clear on improving performance and be shared by all school stakeholders.
- *Adopt the new philosophy* - It requires a rethinking of the school's mission, and the priority is to replace the existing methods with the new teaching and learning strategies.
- *Cease dependence on inspection to achieve quality* – According to Deming (2000), it always costs more to fix a problem than to prevent one. Therefore, reliance on school remediation can be avoided, if proper intervention occurs during instruction.
- *Use a single supplier for any one item* – Public schools need to move toward a single supplier for services, and develop a long-term relationship of loyalty and trust with that service provider, on the basis of quality and reliability of their service.
- *Improve constantly and forever* - The focus of improvement efforts in public schools with Deming's approach is on teaching and learning processes. The best strategies must be attempted, evaluated and refined as needed.
- *Use training on the job* - Training for educators is needed in three areas. Firstly, there must be training on teaching and learning processes that are developed. Secondly, training must be provided in the use of assessment strategies. Thirdly, there must be training on the principles of school leadership and management systems. Consequently, in the school setting, this will mean providing continuous professional improvement, and development of school activities for all school leadership and management, school administrators, educators, and support staff.

- *Implement leadership* – According to Deming (2000), the primary task of leadership is to narrow the amount of variation within the system and bring everyone towards the goal of perfection. In the school context, this means bringing everyone towards the objective of learning, and removing achievement gaps that hinder school successes.
- *Eliminate fear* - Fear creates an insurmountable barrier to improvement in implementing activities. In the school environment, educators and staff are often afraid and fearful to point out problems, due to uncertainty and lack of information of the problem. Therefore, school leaders, and management at all school levels need to communicate to staff that all suggestions are valued and rewarded.
- *Break down barriers between departments* – In public schools, this philosophy applies to interdisciplinary instruction, team teaching, and writing across the curriculum and transfer of learning. According to Deming (2000), this philosophy applies to building the internal customer concept by recognising that each school unit or function serves the other function in building a shared vision. For this reason, collaboration and consensus need to exist among school members for public schools' quality to be maximised.
- *Get rid of unclear slogans* - This implies that low-quality school management is very often due to the management system, and not educators or the staff. Therefore, the system itself may need to be changed. According to Deming (2000), management must let stakeholders know exactly what the slogan intends to achieve.
- *Eliminate management by objectives* - According to Ajayi and Oyeniya (2017: 468), there are many practices in schools that constrain the ability to tap intrinsic motivation, and falsely assume the benefits of extrinsic rewards, and they include rigorous and systematic educator evaluation systems, and management by objectives. On the philosophy, Deming (2000) stated that management must provide support, and allocate resources to assigned activities for productivity level and quality to be high and achievable, as well as measuring the implementation process, rather than the staff behind the process.
- *Remove barriers to pride of workmanship* – Deming (2000) asserted that this philosophy implies that school management must allow school staff to take pride in the activities implemented without being rated or compared. Additionally, school leadership and management must provide effective communication, and eliminate demotivating factors such as lack of involvement in the implementation of activities, misleading information, and merit ratings.

- *Implement education and self-improvement* – This philosophy implies that school leadership needs to encourage staff to learn new skills to prepare for future changes and challenges by building skills to make the workforce more adaptable to change, and able to find and achieve improvements (Deming,2000). Furthermore, school leadership, management, administrators, and staff must be retrained in new methods of school-based management, including group dynamics, consensus building, collaborative styles of teaching and decision-making, (Ajayi & Oyeniyi, 2017: 468).
- *Make ‘transformation’ everyone’s job* – Deming (2000) asserted that this philosophy requires school leadership to improve overall performance by having each individual take a step towards quality, and analyse each step taken, as well as understand how it fits into the vision. Consequently, in the school context, school leadership must possess a clear plan of action to carry out the quality mission, which must be internalised by all school staff.

Pan, Nyeu and Cheng (2017:170) stated that, leadership can have a significant impact on school improvement achieved by leaders, shaping the conditions that build school capacity for change. According to Moorosi and Grant (2018:643), leadership preparation has been identified as an important factor in the socialisation of school principals, and preparation for principalship has been found to be inadequate in many African countries. Apart from this, this deficiency has been closely linked to ineffective leadership and poor performance in many schools; moreover, the challenges confronting newly elected principals have been compounded by the lack of induction training, shortage of resources and other social challenges in schools in the southern African region.

On the one hand, the National Planning Commission (NCP) (2010:15) of the National Development Plan (NDP) 2030 asserted that, comparative studies in school performance in South Africa, and studies of successful practices in countries facing school leadership challenges suggest that the quality of school leadership is the most important factor in South Africa’s school performance. Moreover, international studies found that the presence of good school principals is critical, and good principals run efficient and effective schools, support their educators, mentor less-experienced staff, and constantly seek opportunities to promote schools in the broader community, (NPC of NDP 2030, 2010:15).

On the other hand, the NDP 2030, (2012:310) correspondingly stated that actions to improve the performance of school leadership result in a change of appointment process to ensure that competent individuals are attracted to become school principals, and principals should

be delegated more administrative powers as the quality of school leadership improves. In the public school environment, a change in the appointment process of school leadership will assist public schools in increasing effectiveness and efficiency in meeting quality school objectives, and in developing and improving school capabilities, and staff to deliver desired school results.

The following sections discuss the leadership theories and types.

2.3.1.2 Leadership theories and types

The leadership theories and types discuss the theoretical framework of this study. According to Gong and Subramaniam (2020:2434), leadership literature reveals that theories have been refined and modified with passage of time and none of the theory is completely irrelevant.

2.3.1.2.1 Leadership theories

On the one hand, Khan *et al.*, (2016:1) asserted that the main leadership theories that emerged during the 20th century are the great man theory, trait theory, contingency and situational theory, and behavioural theory, which are set out below.

- The great man theory

According to Khan *et al.*, (2016:1), the term "Great Man" was used, due to the fact that, in 1847 when Thomas Carlyle theorised this theory, leadership was thought of primarily as a male quality, and according to this theory, great leaders are not made, they are born with the necessary internal characteristics such as charisma, confidence, intelligence, and social skills that make them natural-born leaders. This theory recommends that school leaders' capacity should consider school principals as born leaders; however, in the school setting, school leaders are considered competent leaders. This is due to the fact that school principals need to go through a recruitment process before being appointed, and the process includes individual experience, qualifications, and skills.

- The trait theory

This leadership theory assumes that individuals inherit certain qualities and traits that make them better suited to leadership, and often identify a particular personality or behavioural characteristic shared by leaders that includes self-confidence or courage (Khan *et al.*, 2016:2). In the school setting, school principals must take into account the Maslow hierarchy of higher level of human needs, which dictates their personality and behaviour, including esteem needs and self-actualisation needs. Additionally, self-esteem can be broken into esteem based on respect, and acknowledgement from educators and staff, and esteem based on the school principal's own self-assessment.

- The contingency and situational theory

This leadership theory focuses on variables related to the adaptation of the environment that determines the leadership style that is best suited for a particular situation and the course of action based on the situational variables. Moreover, this theory was introduced in 1969, theorising that there was no unsurpassed way to lead, and leaders must be able to adapt to the situation and transform their leadership style accounting to task-oriented and relationship-oriented (Khan *et al.*, 2016:2). In the school setting, school principals are the drivers of this theory, due to the fact that they must demonstrate their leadership qualities, skills and values, in terms of scanning the school environment and seeking school opportunities, as well as anticipating the challenges and threats that the school faces, so that the school can adapt to the environment.

- The behavioural theory

This leadership theory focuses on the actions of leaders, and that individuals can learn to become leaders through teaching and observation, (Khan *et al.*, 2016:2). In the school context, when school principals adopt the situational theory, there is information acquired through environmental scanning, and educators and school staff within the school levels will share the gathered information acquired until it is learned, and understood and taken for granted in solving school problems. Furthermore, the shared information becomes the new knowledge at the school levels, and the dynamic capability that can be utilised by the schools.

Makgato and Mudzanani (2018:93) stated that the leadership theories in the school context that help in improving school performance are task-oriented leadership theory, relationship-oriented leadership theory, path-goal leadership theory, and functional leadership theory, which are discussed as follows.

- Task-oriented leadership theory

The task-oriented leadership theory refers to leaders who succeed by putting more emphasis on the task itself than on other factors, and it is applicable in an environment where team members experience problems, or fail to meet deadlines, (Makgato & Mudzanani, 2018:93). In the school setting, application of this leadership theory occurs when dealing with submissions of schedules, statistics, and test dates; therefore, principals who are more concerned about monitoring written work, curriculum coverage and completion of work before submission dates can be classified as task-oriented leaders.

- Relationship-oriented leadership theory

This leadership theory refers to leaders who succeed by developing a sound relationship with the staff, and it is most applicable in an unstructured environment where repeated rules and procedures are not necessary to get the job done, (Makgato & Mudzanani, 2018:94). In the school environment, school principals who are alert to social issues, and who always permit staff to take decisions on matters related to work performance are classified under relationship-oriented leadership.

- Path-goal leadership theory

This leadership theory requires a leader to embark on activities that complement those of staff to build staff satisfaction and work performance, and the leader must be achievement-oriented, directive, participative and supportive, set challenging, but realistic goals, and offer rewards to those who accomplish them, (Makgato & Mudzanani, 2018:94). In the school context, a school principal that sets goals and targets for educators, SGB members, and staff is referred to as an achievement-oriented leader who applies the path-goal theory of leadership, and rewards can be in a form of excellence awards, certificates, vouchers and trophies given to educators to appreciate their achievement in meeting the targets set.

- Functional leadership theory

This leadership theory requires a leader to ensure that staff needs are taken care of, and encourages that everyone at any level of an organisation can participate in guiding the organisation (Makgato & Mudzanani, 2018:94). In the school setting, school principals who delegate duties, such as learner discipline, leave matters, monitoring of educators' work, and encourage staff to take full responsibility for the task assigned to them by offering support and monitoring to get the job done, may be referred to as functional leaders.

2.3.1.2.2 Leadership types

Louw and Venter (2013:425) stated that there are two types of leadership, which are the transactional leader and transformational leader. The transactional leader is the type of leader that gives out activities and sets the target of the activities, states the consequences of not meeting the targets, and has an agreement with staff, as well as signed acknowledgement of the agreement, (Louw & Venter, 2013:425).

Consequently, within a school context, in situations where operational matters are more structured, a transactional school leader is likely to be preferred in public schools to gain efficiencies and less complicated communication among school stakeholders, and it is, therefore, expected that a transactional school leader maintains the status quo of the school by defining roles and tasks unambiguously, and ensuring that school staff adhere strictly to rules, procedures and norms, with the aim of reducing the variances between anticipated and actual outcomes, (Gong & Subramaniam, 2020:2428).

The transformational leader is the type of leader that sets targets for staff and comes up with supporting mechanisms that can be used by individuals to meet the targets, and the leader manages the staff relationship by participating in the activities given and encourages individual problem-solving to achieve the activities, (Louw & Venter, 2013:425).

Therefore, in the school setting, school leaders must adopt a transformational leadership style, where innovation and more participative decision-making are valued and seen to contribute to improved school performance, as well as seeking and creating opportunities to provide educators and other staff with the necessary freedom and creative space through collaborative strategic planning to change schools systematically, and improve student outcomes (Gong & Subramaniam, 2020:2428). Schlebusch, (2020) distinguished different

types of leadership. Table 2.3 summarises the types of leadership with activities aligned to each type.

Table 2.3 Types of leadership

Directing	Delegating
<ol style="list-style-type: none"> 1. Engages in unilateral decision-making. 2. Expects employees to follow orders. 3. Recognises employees for following directions. 	<ol style="list-style-type: none"> 1. Assigns responsibility and authority. 2. Provides minimal inputs. 3. Recognises employee for accepting responsibility.
Participative	Consultative
<ol style="list-style-type: none"> 1. Provides guidance. 2. Only gets involved when necessary. 3. Accepts work and decisions of employees. 	<ol style="list-style-type: none"> 1. Seeks inputs. 2. Seeks advice. 3. Seeks suggestions. 4. Makes final decisions based on employee input. 5. Recognises employees' contributions.

Source: Schlebusch (2020)

There are four primary types of leadership, namely directing, consultative, participative and delegating, which are controlled by different situations that call for different leadership types. In the school setting, school principals must implement these leadership types towards educators for them to absorb the types; however, the challenge is for school principals to find ways of encouraging more educators to become leaders in implementing school activities, and to provide educators with the support and resources necessary to change the school's individualistic pedagogical methods and learning practices, (Schlebusch, 2020:75). According to Makgato and Mudzanani (2018:96), the laissez-faire leadership type uses delegation in its application, and assists leaders with providing staff with freedom to make decisions that will enable the organisation to function. It also gives staff a powerful sense of satisfaction and feeling of ownership of the organisation.

The leadership types based on the different leadership theories and related to school performance are the authoritarian leadership, democratic leadership, bureaucratic leadership, and instructional leadership that are discussed as follows.

- Authoritarian leadership type

In this leadership type, all powers reside in the leader, and the leader gives orders and directions that are strictly followed. There is neither scope for change, nor is any input welcome from staff, once a decision has been taken, which changes to decisions made can be made only by the leader and without consultation (Makgato & Mudzanani, 2018:96).

According to Pizzolitto, Verna, and Venditti (2022:1), authoritarian leadership styles involve high levels of control over subordinates, and authoritarian leaders tend to use their authority, which is ensured by organisational hierarchies, to demand absolute obedience of their followers. In the school context, this leadership type is applicable in situations where educators and staff are incompetent and only the school principal is considered knowledgeable regarding decisions made.

- Democratic leadership type

In the democratic leadership type, the leader ensures that staff participate in decision-making, where decisions are taken after consultation with staff; however, the leader has the final power to approve the decisions, (Makgato & Mudzanani, 2018:97). According to Dike and Madubueze (2019:130), leaders who use the democratic style attain better employee performance than leaders who do not utilise the democratic style, and democratic leadership style leads to an increase in employee performance. In the school environment, this leadership type is applicable where educators, school staff and SGB members are skilled, intellectually capable, creative, and ready to exchange knowledge, and have time to deliberate over many ideas to reach the best decision.

- Bureaucratic leadership type

According to Arshad, Ullah and Malik (2021:211), bureaucratic leadership is considered the most effective form of management in organisations to acquire rationality, as well as to avoid ambiguity, and the leader follows all the rules, procedures and protocols for doing everything and expects the staff to do the same in the organisation. As this leadership type leads to discouragement and has no room for creativity and innovation, and it affects educators' work satisfaction negatively in the school setting, it affects school performance negatively.

- Instructional leadership type

Instructional leadership is any activity of a leader that is directly related to teaching and learning, which may include curriculum management, assessment monitoring, teaching, and learning supervision, (Makgato & Mudzanani, 2018:97). In the school environment, the school principal as an instructional leader is expected to provide the vision and goals for the school, monitoring and evaluation of the curriculum, instruction and assessment, supportive work environment, and an environment conducive to learning. Furthermore, staff members

and educators must meet on a regular basis to discuss their work, collaborate to solve school problems, reflect on their jobs, and take responsibility for what learners learn about. For a further demonstration of leadership, the following section discusses the competencies of effective leadership.

2.3.1.2.3 Competencies of leadership

According to Louw and Venter (2013:417), leaders need several competencies to be effective strategic leaders. These competencies are strategic thinking, emotional intelligence and behavioural complexity, African leadership approach, and Ubuntu, which are discussed as follows.

- Strategic thinking

This is when a leader deploys available resources and capabilities to scan the environment using absorptive capacity to get information from the environment and use the information gained as the dynamic capability for the information to be shared with stakeholders and solve leadership challenges (Louw & Venter, 2013:417). According to Sebastian *et al.*, (2019:591), management is about coping with complexity, and leadership is about coping with change. In the school context, school principals need to scan the school environment to acquire information that can be learned by educators, members of the SGB, and staff that can add to the capabilities of the school. Consequently, through the acquired information, the school will adopt new knowledge that can be employed to anticipate future, unexpected school environmental changes, and become flexible and agile in adapting to environmental changes. Furthermore, when school principals adopt this competency, they become proactive towards school environmental changes and explore new school opportunities.

- Emotional intelligence and behavioural complexity

It is the ability of a leader to manage themselves, and manage relationships, and to use self-awareness, self-regulation, and motivation when applying emotional intelligence (Louw & Venter, 2013:423). In the school setting, school principals must influence staff to act towards school change, where the school principal will be applying a democratic leadership style that allows authority for decision-making by school staff. Furthermore, when school principals resist influencing staff to act towards change, the school principal will be applying an autocratic leadership style that resists authority for decision-making by school staff members.

- African leadership approach

According to Naidoo (2017:65), African leadership requires transparency, accountability, and legitimacy, and it has six fundamental values, which are: respect for the dignity of others, group solidarity, teamwork is greater than the efforts of the individual, service to others in the spirit of peace and harmony, interdependence and connectedness, and persuasion. In the school context, school principals must consider African issues when planning school activities, and initiate activities that can engage with the communities surrounding the schools. Furthermore, school principals need to consider the triple bottom-line issues that include economic issues, social issues and environmental issues in the African continent.

- Ubuntu

The concept of Ubuntu emphasises human dignity and respect, and it allows for consensus, democracy, people mobilisation, solidarity and genuine care, which also has a significant relevance for African countries, including South Africa (Naidoo, 2017:66). In the school context, this leadership approach contributes to improvement of school performance when school leadership rallies all school stakeholders' efforts and appeals to all concerned, which the school leadership may call a 'lekgotla' or an 'imbizo' (Setswana and isiZulu phrases meaning people's assembly). Therefore, such a meeting constitutes an SGB's appeal for co-operation and participation, whereby the school's problems are presented to all school stakeholders. Consequently, all school stakeholders are allowed to raise their views regarding the situation at the school, and the inputs submitted by stakeholders initiate a collective intent to act in a manner that is agreeable to every stakeholder and will evoke social cohesion (Setlhodi, 2018:132).

The following section discusses the McKinsey 7S model as a leadership factor and a blueprint that supports school principals to cohesively integrate all parts of the school, in contrast, to achieve the objectives of the schools.

2.3.1.3 The McKinsey 7S model

According to Louw and Venter (2013:481), the McKinsey 7S model is a model developed by business consultants Waterman and Peters in the 1980s, which assists leaders in identifying the key components when implementing strategy. Moreover, to implement the strategy, school leaders need to pay attention to the hard components of school structure, system and strategy, and to pay attention to the soft components of schools that include shared values,

style, staff and skills. The hard components will be easy for school leadership to influence and change, and the soft components will be influenced by the school's culture. The McKinsey 7S model of organisational architecture is demonstrated in Figure 2.4.

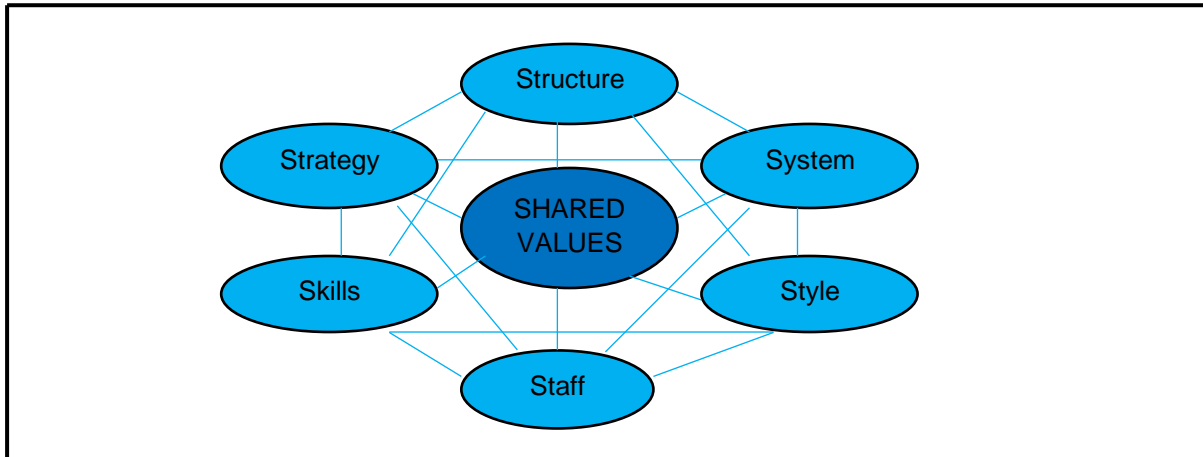


Figure 2.4: The McKinsey 7S model

Source: Waterman and Peters (1980)

According to Louw and Venter (2013:481), the model demonstrates that all components are interconnected, and a change in one component will have implications for change in other components. In the school context, school leadership must shape all school components by using the school's architecture as a blueprint that cohesively and coherently aligns all components strategically. In other words, the school's architecture can be employed by school principals to select the strategic change that educators and staff learn, and adapt to when sharing gathered information that is acquired from the external environment to determine the new chosen strategy of the school.

Therefore, adapting to the external environment helps school leaders to align school culture with the chosen strategy; consequently, the culture of the school will refer to the shared values of McKinsey 7S model and determine the capacity of the school in adapting to the external environment. Therefore, the McKinsey 7S model is adopted in school leadership principles (factor) to evaluate the execution of the model in schools and determine the degree of integration of components employed by schools. Moreover, to determine the level of performance of the model in schools. According to the NDP 2030 (2012:302), implementation plans in schools need to be executed from the top level to the operational level.

In support of the literature discussed in this QMP factor (school leadership), the study, *Principal leadership and school performance: An examination of instructional leadership and Organisational Management*, conducted in Columbia by Sebastian *et al.*, (2019) found that recent literature in school leadership indicates the importance of school principals' management and instructional skills; however, the study also found that there is limited empirical work that directly compares these leadership skills and their importance to improve school performance.

Furthermore, in support of the literature discussed in this QMP factor, the study, *Principal leadership style and school performance: Mediating roles of risk management culture and management control systems use in Australian schools*, conducted in Australia by Gong and Subramaniam (2020), found that performance-oriented risk management culture and enabling use of management control systems play an important role in leadership style and school performance, and that private schools are more likely to adopt a performance improvement-oriented management control system culture than public schools.

To address the gaps in literature, this study was conducted to identify and evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District. The following QMP (factor) discusses the theory behind evidence-based decision-making in schools. Therefore, the principle may be applied in schools to assist school leadership (school principals) in making sustained decisions.

2.3.2. Evidence-based decision-making in schools

Jaccard (2013:113) defined evidence-based decision-making as “effective decisions that are based on analysis of data and information”. According to ISO 9001:2015 (12), decisions that are based on the analysis, and evaluation of data and information are more likely to produce desired results. Elshaer and Augustyn (2016:1289) averred that quality management literature indicates that quality data and informed decision-making enhance quality awareness, identify quality problems, and encourage further improvements. The decision theory related to public schools is adopted in this QMP (factor).

2.3.2.1 Decision theory related to public schools

According to Naidoo (2017:71), the decision theory provides a discrete approach to each decision, and recognises the implications that a prior decision has for a present one; and a theory of decision-making needs to be complemented by the development of a direct approach to the setting of decision-making priorities and schedules. Hansson (1994:9) asserted that the seminal work of Condorcet (1793), Dewey (1910), and Mintzberg, Raisinghani, and Theoret (1976) advocated for decision theories that can be applied in

public schools. The decision theories are Condorcet, modern sequential models, and non-sequential models.

- Condorcet

According to Hansson (1994:9), the Condorcet (1793) decision process is divided into three stages, namely the first stage, where opinions are personal, and no attempts are made to form a majority. In the second stage, decisions are reduced to a choice between a manageable set of alternatives. The third stage comprises the actual choice of decision taken between the alternative decisions.

- Modern sequential model

Dewey's (1910) modern sequential model decision focuses on five stages of problem-solving, namely identifying the problem, obtaining necessary information, producing possible solutions, evaluating solutions, and selecting a strategy for performance (Hansson, 1994:9).

- Non-sequential model

The non-sequential model process is comprised of distinct phases, which include identification, development and selection (Mintzberg et al., 1976) (Hansson, 1994:10). The identification phase comprises two routines: the first is decision recognition in which problems and opportunities are identified; the second routine of identification is the tapping of existing information channels, and the opening of new ones to clarify and define the issues.

The development phase involves two routines, namely the search routine that aims to find available solutions; and the design routine that aims to develop new solutions or modify available ones.

The selection phase is made up of three routines. The first one is the screen routine, which is evoked when a search is expected to generate more ready-made alternatives than can be intensively evaluated. The second routine is the evaluation-choice routine, which is the actual choice between the alternatives, and includes the use of one or more of three modes, namely intuitive judgment, bargaining and analysis. The third routine is authorisation, which is the approval of the solution selected.

Mncube, Davies and Naidoo (2015:189) stated that the more internal school stakeholders, such as educators and school staff, become involved in school decision-making, the more there is a genuine stakeholder involvement in schools, and the more effective the school becomes. According to Brinia, et al. (2020:68), the concept of school stakeholder is a key

element in the collective decision-making process as, within it, dynamic relationships are developed that affect decisions as a whole.

Furthermore, the decisions taken are differentiated according to their types that relate to the standardised (programming/routine), or new and unpredictable situations affecting the school, and according to how they are taken, which can take various forms that relate to the authoritarian, persuasive, advisory or co-deciding, (Brinia et al., 2020:68).

This QMP (factor) as a 'checking principle' is linked to this study, since it supports the previous principle (school leadership), as well as school principals and management, by its aspects of ensuring that school data and information are sufficiently accurate and reliable, Furthermore, it analyses school data and information using valid methods (Jaccard, 2013:113). According to ISO 9001:2015 (12), the key benefits and challenges of this QMP (factor) that school leadership and management will experience are as follows.

The key benefits of evidence-based decision-making in schools:

- It improves decision-making processes.
- It improves assessments of process performance and ability to achieve objectives.
- It improves operational effectiveness and efficiency.
- It increases the ability to review, challenge and change opinions and decisions.
- It increases the ability to demonstrate the effectiveness of past decisions.

The key challenges of evidence-based decision-making in schools:

- Determining, measuring and monitoring key indicators to demonstrate the performance.
- Making all data needed available to the relevant staff.
- Ensuring that data and information are sufficiently accurate, reliable and secure.
- Analysing and evaluating data and information using suitable methods.
- Ensuring that staff are competent to analyse and evaluate data as needed.
- Making decisions and taking actions based on evidence.

In support of the literature discussed in this QMP factor (evidence-based decision-making in schools), the study, *The philosophy of quality in education: A qualitative approach*, conducted in Greece by Brinia et al., (2020) found that participatory evidence-based decision-making in schools is an essential element for ensuring an efficient and open-ended school culture.

Therefore, this QMP was used in the study to guide school leadership and management in analysing school data and information when participating in school decision-making. The next principle discusses how school objectives can be achieved by using school resources. Moreover, the next principle is linked to evidence-based decision-making principles. Consequently, it assists school management in school decision-making.

2.3.3 Process approach in schools

Jaccard (2013:112) defined the process approach as a desired result that is achieved more efficiently when activities and related resources are managed as a process. Rocha-Lona, Garza-Reyes and Kumar (2013:41) correspondingly defined the process approach as the steps and decisions taken towards an activity or set of related activities that accomplishes specific objectives. According to ISO 9001:2015 (8), consistent and predictable results are achieved more effectively and efficiently, when activities are understood and managed as interrelated processes that function as a coherent system. Elshaer and Augustyn (2016:1290) averred that quality management scholars emphasise that the process approach and management create a culture that reduces process duplication and variance, enhances reliability, eliminates progress interruptions, and, therefore, results in achieving greater performance gains.

This QMP (factor) as a 'doing principle' is linked to this study, due to the results of its aspects that arise when it is implemented. For example, when this principle is implemented in schools, the schools will establish a clear responsibility for managing activities, and school activities will be analysed and measured.

A further example of this is that the principle will help in identifying the interference of activities between different school functions; it will help schools in focusing on factors such as resources and methods, which, together, will improve school activities. Finally, it will help schools in evaluating risks and consequences of activities regarding school stakeholders. ISO 9001:2015 (8) asserted that the key benefits, and challenges of this QMP (factor) that school leadership and management will experience are as follows.

The key benefits of process approach in schools:

- It enhances the ability to focus effort on key processes and opportunities for improvement.
- It provides consistency and predictable outcomes through a system of aligned processes.
- It optimises performance through effective process management, efficient use of resources, and reduced cross-functional barriers.

- It enables the organisation to provide confidence to interested parties regarding its consistency, effectiveness and efficiency.

The key challenges of the process approach in schools:

- Defining objectives of the system and the processes necessary to achieve them.
- Establishing authority, responsibility and accountability for managing processes.
- Understanding the organisation's capabilities and determining resource constraints prior to action.
- Determining process interdependencies, and analysing the effect of modifications to individual processes on the system as a whole.
- Managing processes and their interrelations as a system to achieve quality objectives effectively, and efficiently.
- Ensuring the necessary information is available to operate and improve the processes.
- Managing risks that can affect the outputs of the processes and overall outcomes of the quality management system.

Talib *et al.*, (2014:157) averred that the process approach encompasses procedures for establishing quality, and influences continuous improvement, as well as leading to high quality outcomes. For this reason, the process approach developed in this study to achieve quality outcomes is discussed in section 2.5.2.

On the one hand, Sahney (2016:330) argued that there is a transformational school process that converts inputs into outputs, which includes teaching, learning, research, and administrative activities. Conversely, Hossain (2018:129) pointed out that significant effort has been placed on monitoring the processes within schools for maintaining the quality of outcomes. Furthermore, this shift towards outputs and participatory management ensures that there is accountability for achieving targeted results that focus more on school quality such as teacher professionalism.

This QMP (factor) advocated for adoption of a problem-solving process that includes the steps to be followed for effectiveness and efficiency of school operations in implementing school activities. Therefore, the steps of the problem-solving process will be employed by school leadership and management to ensure that schools reach an agreement on the identified school problems.

2.3.3.1 Problem-solving process in schools

According to Aydin-Guc and Daltaban, (2021:127), the steps used for problem solving process are as follows:

- Defining the problem.
- Analysing the root cause.
- Generating solutions.
- Planning and implementation.
- Measuring.
- Standardisation.

Step 1: Defining the problem in schools

The problem definition is essential to finding the exact cause by which an effective solution can be generated because educators and staff need to know which school problems should be solved. As a result, the questions to be asked in schools to define the problem will be the six Ws, which are, '*When does the problem occur?*' '*Where does it occur?*' '*What is the cause of it?*' '*Where are the limitations?*' '*Who causes it?*' and '*Why does it occur?*'

Step 2: Analysing the root cause of the school's problem

This step aims to chart the many possible causes of the school problem and selecting the most logical root cause. Additionally, this step requires school leaders to gather, and analyse school data and information through illustrative techniques such as graphs.

Step 3: Generating school solutions

This step aims to generate possible solutions that school leadership can consider solving the root cause of the school problem, resulting in educator and staff satisfaction. Furthermore, this step requires school leadership and management to brainstorm by using the school data and information gathered, and generating a list of possible solutions.

Step 4: School planning and implementation

This step aims at school leadership and management to carefully plan the proposed school improvements, considering school consequences, and implementing the solution for the school problems.

Step 5: School measuring

In this step, school measurements are completed to determine whether the implemented solution has solved the problem, or reduced it.

Step 6: School standardisation

This step encompasses the school documentation of process executions in standard procedures and ensures that all school human resource involved in the process understand the process, as well as to incorporate the new process into the daily routine.

Therefore, this principle was used in this study. Firstly, to improve school results and consistency; and, subsequently, to focus on value for all essential components of schools, while also focusing on improvement opportunities. Finally, to achieve greater responsiveness to external changes by having better communication between school components, (Jaccard, 2013:112).

In support of the literature discussed in this QMP factor (process approach in schools), the study, *Quality management principles and school quality: Testing moderation of professional certification of school principal in schools of Pakistan*, conducted in Pakistan by Elahi and Ilyas (2019), found that the process approach in schools has a significant effect on the functional quality and academic quality of schools.

The next principle discusses how staff will be considered school stakeholders from the top level to the lower level by contributing to school objectives when fully participating in school activities. Apart from this, the next principle is linked to the process approach, as it assists in creating a sense of urgency for staff to follow the processes taken to achieve school objectives.

2.3.4 Engagement of school staff

Stamatis (2013:171) defined engagement of staff as the greatest asset and resource in an organisation. Jaccard (2013:112), in a similar manner, defined engagement of staff as the essence of an organisation at all levels, with full engagement that enables individual abilities to be used for the organisation's benefit. According to Diaz and Martínez-Mediano (2018:5), competent, empowered and engaged staff at all levels throughout the organisation are essential to enhance an organisation's capability to create and deliver value.

This QMP (factor) is relevant to this study, due to the fact that it is important to involve all staff at all levels when making decisions, and recognising, empowering, and enhancing competence in the engagement of staff in achieving quality objectives, (ISO 9001:2015:6). According to Elshaer and Augustyn (2016:1288), several quality management scholars emphasise that staff management that focuses on individual involvement, empowerment, training, and teamwork facilitates developing motivated, skilful and committed quality-minded human resources, which leads to enhancing individual performance and satisfaction.

Schlebusch (2020:75) asserted that schools need to recognise and develop leadership among many kinds of individuals to effectively model and develop a school climate that engages staff in a shared mission that improves academic performance.

This QMP (factor) as a 'doing principle' is linked to the problem statement and objectives of this study, since it has aspects that, when executed in schools, the school human resource benefits from. Firstly, the aspect benefits school educators and staff by identifying constraints to performed activities. Secondly, the human resource in schools will agree to be accountable and to fulfil individual responsibility when problem-solving. Subsequently, the aspect will help educators and staff to evaluate individual performance against objectives. Lastly, educators and staff in schools will feel free to share knowledge and experience, as well as being open to discussion of school problems and issues. According to ISO 9001:2015 (7), the key benefits and challenges of this QMP that school leadership and management will experience are as follows.

The key benefits of engagement of school staff:

- It improves an understanding of quality objectives by staff and increases motivation to achieve them.
- It enhances involvement of staff in improving activities.
- It enhances individual developments, initiatives and creativity.
- It enhances staff satisfaction.
- It enhances trust and collaboration.
- It increases attention to share values and culture.

The key challenges of engagement of school staff:

- Communicating with staff to promote understanding of the importance of their individual contribution.
- Promoting collaboration throughout the organisation.
- Facilitating open discussion and sharing of knowledge and experience.
- Empowering staff to determine constraints to performance and to take initiatives without fear.
- Recognising and acknowledging staff contribution, learning and improvement.
- Enabling self-evaluation of performance against personal objectives.
- Conducting surveys to assess staff satisfaction, communicate results, and take appropriate action.

On the one hand, Dubey, Singh and Ali (2015:1465) stated that training and educating human resources for quality programmes reduces resistance, and provides positive

motivation to work for quality goals. On the other hand, Dilawo and Salimi (2019:2), in a similar manner, state that training programmes should target everyone in the organisation and teach how quality works. Talib *et al.*, (2014:156) supported this by stating that staff empowerment is important for quality improvement, as it facilitates a sense of ownership. In the school setting, the self-determination theory must be adopted by school leadership to achieve the school individual motivational objectives.

2.3.4.1 Self-determination theory

According to Areepattamannil, Freeman and Klinger (2017:384), the self-determination theory is defined as a macro-theory of human motivation, emotion and development that takes interest in factors that either facilitate or forestall the assimilative and growth-oriented processes in staff. Xie, Vongkulluksn, Lu and Cheng (2020:1) stated that self-determination theory describes that educator engagement in academic activities could be driven by two types of motivation, namely autonomous and controlled motivation, and motivation scholars emphasised that educator behaviour in schools might be driven by a combination of autonomous and controlled motivations.

According to Moreira, Dias, Matias, Castro, Gaspar and Oliveira (2018:68), self-determination theory posits that, to achieve healthy psychological development, individuals need to fulfil three basic psychological needs, which are relatedness needs, autonomy needs, and competence needs. Relatedness needs signify support from other individuals and warm interactions, autonomy needs are the sense of agency and control over decision-making, and competence needs are self-perceived competence and self-efficacy, (Moreira, *et al.*, 2018:68). According to Areepattamannil, *et al.* (2017:384), competence needs refer to the need to experience satisfaction in improving one's abilities; relatedness needs denote the need to feel related to significant others; and autonomy needs refers to the need to engage in self-directed behaviour.

In the school environment, educators and staff tend to be motivated and actively engaged in school activities, and contexts that provide the conditions for the fulfilment of their psychological needs, and the more educators and staff perceive that their needs are being met, the more activities become intrinsically rewarding (Moreira *et al.*, 2018:68).

On the one hand, autonomous motivation reflects educators' own interests and values, and educators who are autonomously motivated choose to engage in teaching behaviours, due to self-determined reason, and the subtype of autonomous motivation includes intrinsic motivation and identified regulation. Intrinsic motivation represents motivation based on deriving pleasure from performing the task itself, and identified regulation refers to educators

performing academic activities, due to the fact that educators personally identified them and find them important, (Xie *et al.*, 2020:1).

On the other hand, controlled motivation reflects the compulsion to perform learning activities because of internal or external pressures. Introjected regulation represents the regulation of behaviours by internal pressures such as guilt, while external regulation represents the regulation of behaviours by external reward or punishment (Xie *et al.*, 2020:2).

It should be noted that autonomous motivation is associated with positive academic outcomes such as increased achievement, school retention, and active participation and engagement, and controlled motivation is linked to positive academic outcomes under certain circumstances; however, controlled motivation could negatively affect performance when controlling incentives are given and performance quality is assessed (Xie *et al.*, 2020:2).

Accordingly, this QMP (factor) was used in the study for three reasons. Firstly, it was used to assist school leadership with motivating educators and staff, to ensure individual commitment and involvement in school activities. Subsequently, it was used to ensure that educators and staff are accountable for individual performance. Lastly, it was used to help school leadership with ensuring that educators and school staff are eager to participate in school activities, and contribute to continuous improvement, (Jaccard, 2013:112).

In support of the literature discussed in this QMP factor (engagement of school staff), the study, *An analysis of quality management practices in Zambian secondary schools: A survey of Lusaka district*, conducted in Zambia by Nawelwa, *et al.*, (2015) found that this QMP was mostly practiced in the Lusaka district in Zambia, and that most respondents did not know the extent to which this QMP was being practiced.

The following principle outlines how the interdependency of schools, and their related stakeholders can create school value through executing school activities. Moreover, the principle is inked to the engagement of staff principle, as it helps school leadership to inspire, encourage, and recognise improvements and achievements by school educators, and staff.

2.3.5 School relationship management

Jaccard (2013:113) defined relationship management as an interdependency of an organisation and its stakeholders, where the mutual benefits enhance the ability of all stakeholders to create value. ISO 9001:2015 (14) asserted that for sustained success, an organisation must manage its relationships with all interested parties internally and

externally. In the school environment, Freeman's stakeholder theory must be adopted by school leadership to achieve the objectives of this QMP.

2.3.5.1 Freeman's stakeholder theory

According to the seminal work of Freeman (1984), the traditional definition of the stakeholder theory is any group or individual who can affect, or is affected by the achievement of the organisation's objectives, which includes both the internal stakeholders and external stakeholders.

The internal stakeholders are comprised of the following.

- Staff
- Manager
- Owners.

The external stakeholders are comprised of the following:

- Suppliers
- Society
- Government
- Creditors
- Customers.

It should be noted that, in this study, the internal stakeholders are the GDBE, Tshwane school districts, school principals, educators, learners and school staff. The external stakeholders are parents, communities and the government. Additionally, in the school context, the stakeholder theory helps school leaders and managers to cohesively conceptualise all the involved school parties, and advocate how the schools should be and how they should be conceptualised. Naidoo (2017:68) asserted that Freeman's stakeholder theory requires that organisations consider the interests and expectations of their various stakeholders to define any identifiable group or individual who can affect the achievement of an organisation's objectives, or who is affected by the achievement of an organisation's objectives.

This QMP (factor) as a 'doing principle' is linked to this study, since its aspects will help to create good communication between schools and their stakeholders. According to Fernandez-Diaz, Rodriguez-Mantilla and Abad (2016:99), communication is a key aspect in schools, and quality management considers communication to be one of the most important

components in schools. ISO 9001:2015 (15) stated that the key benefits and challenges of this QMP (factor) that school leadership, and management will experience are as follows.

The key benefits of school relationship management:

- It enhances performance of an organisation and its interested parties through responding to the opportunities and constraints related to each interested party.
- It promotes common understanding of goals and values among interested parties.
- It increases the capability to create value for interested parties by sharing resources and competence, and managing quality-related risks.

The key challenges of school relationship management:

- Determining and prioritising interested party relationships that need to be managed.
- Establishing relationships that balance short-term gains with long-term considerations.
- Pooling and sharing information, expertise and resources with relevant interested parties.
- Measuring performance and providing performance feedback to interested parties, as appropriate, to enhance improvement activities.
- Establishing collaborative development and improvement activities with partners and other interested parties.
- Encouraging and recognising improvements and achievements by partners.

Furthermore, this QMP (factor) is linked to this study because its aspects are that, firstly, the principle will establish a school relationship that will balance school short-term and long-term objectives. Secondly, the principle will open clear and open communication to stakeholders. Meanwhile, the principle will ensure that schools share information with all internal and external stakeholders. Lastly, the principle will assist in establishing school joint development and improvement actions. Fernandez-Diaz *et al.*, (2016:99) stated that school management must communicate with the school stakeholders, due to fact that communication between school management and stakeholders is a key factor in planning the school processes.

On the one hand, Dilawo and Salimi (2019:3) stated that good relationship management and communication provide vital feedback to management on the quality of efforts. On the other hand, the NDP 2030 (2012:302) stated that the role of stakeholders in schools is not being implemented, as school principals do not ensure that their school ethos is conducive to their

priorities. Consequently, this QMP (factor) is used in this study for the following three reasons. Firstly, it will be used in public schools to create value for all stakeholders. Secondly, it will be used by public schools to be flexible and agile to respond to customer needs, and to ensure that expectations are enhanced. Thirdly, it will be used to optimise school costs and resources, (Jaccard, 2013:114).

In support of the literature discussed in this QMP factor (school relationship management), the study, *Impact of the application of ISO 9001 standards on the climate and satisfaction of the members of a school*, conducted in Spain by Fernandez-Cruz, *et al.*, (2020) found conclusive results regarding the impact of ISO 9001 standards on educators' involvement in improving the performance of schools, conflict resolution by the management team, and communities' involvement and satisfaction with the school performance. According to the study of Fernandez-Cruz, *et al.* (2020), no apparent evidence was found of the impact on the relationship among school leadership, school management and educators, and the perception of satisfaction by school stakeholders with determining school relationship management when practicing quality management.

The following principle identifies school customers in this study that depend on school leadership for school outcomes. Furthermore, the next principle supports all other five QMPs (factors) in this study, as what is discussed in other principles contributes to this next principle.

2.3.6 Customer focus in schools

Jaccard (2013:111) defined customer focus as an understanding of current and future customer needs to meet customer requirements, and strive to exceed customer expectations. Talib *et al.*, (2014:156) equally defined customer focus as a significant mechanism used to contribute to individual job involvement. According to ISO 9001:2015 (2), the primary focus of quality management is to meet customer requirements and strive to exceed customer expectations.

This QMP (factor) as a 'planning principle' is linked to this study, due to the following reasons. Firstly, it is linked to this study, since it identifies school customer needs and expectations, whether explicit or implicit. Secondly, it is linked to this study because it ensures that the school objectives are in tune with customer needs and expectations. According to ISO 9001:2015 (2), the key benefits and challenges of this QMP (factor) that school leadership and management will experience are as follows.

The key benefits of customer focus in schools:

- It increases customer value.
- It increases customer satisfaction.
- It improves customer loyalty.
- It enhances repeat business.
- It enhances reputation.
- It expands the customer base.

The key challenges of customer focus in schools:

- Recognising direct and indirect customers as those who receive value from the organisation.
- Understanding customers' current, and future needs and expectations.
- Linking objectives to customer needs and expectations.
- Planning, designing, developing, delivering and supporting services to meet customer needs and expectations.
- Determining and taking actions on interested parties' needs and expectations that can affect customer satisfaction.
- Actively managing relationships with customers to achieve sustained success.

This principle is linked to this study, due to its result of measuring school customer satisfaction, as well as acting on the results. Subsequently, this principle is linked to this study for its ability to manage school customer relationships in an attempt to achieve school customer satisfaction and ensure a balanced approach to school stakeholders. According to Sahney (2016:332), school customers have requirements, and the customer requirements refer to the expectations of various groups of customers from the school process. However, to provide services that the customers perceive as excellent, the school process must know what the customers expect. It should be noted that, in this study, school customers are seen as communities, learners and parents.

According to Konstantinos, Jesús and Jesús (2017:541), the theory of customer focus as a QMP is that it is achieved through the adoption of the DART (Dialogue, Access, Risk benefits and Transparency (DART) model, which defines and classifies value creation for customers. The DART model is identified as follows:

- Dialogue – refers to a discussion between the customer and the school as an important element in customer focus.
- Access – refers to the information that customer needs from the school.
- Risk benefits – refers to the information that helps the customer make decisions.
- Transparency – refers to the information about the schools' activities.

According to Senol and Dagli (2016:2), learners and communities are school customers, and are classified as internal and external customers. Ibrahim *et al.*, (2016:206) argued that there are two types of customers in schools, namely the internal and external customers. The internal customers are those individuals or groups who directly consume the services, and they include the learners. The external customers are those individuals or groups who have an interest in the services; however, it is inappropriate to consume them directly. They include parents and communities (Ibrahim *et al.*, 2016:207).

Senol and Dagl (2016:2) asserted that providing quality in schools entails identifying the needs of not only learners as primary customers, but also the needs of all school stakeholders. According to Elshaer and Augustyn (2016:1289), customer focus ensures an effective response to the changing customer needs which may lead to customer satisfaction. Díaz and Martínez-Mediano (2017:3) averred that the determination of customer needs, the processes to meet the needs and customer satisfaction, and the action to improve satisfaction, are the basis of ISO 9001.

Therefore, this QMP (factor) was used in this study for the following benefits. Firstly, it increases efficacy and efficiency when using school resources, and customer satisfaction. Subsequently, it improves school customer loyalty. Finally, it assists public schools in responding to its strict requirements, which leads to better use of school resources (Jaccard, 2013:111).

In support of the literature discussed in this QMP factor (customer focus in schools), the study, *Quality management principles and school quality: Testing moderation of professional certification of school principal in schools of Pakistan*, conducted in Pakistan by Elahi and Ilyas (2019), also found that customer focus in schools administers the relationship between process approach in schools and functional quality.

The next principle discusses how continual improvement can be achieved in schools. Additionally, the following principle supports all discussed QMPs (factors), as it encourages quality management performance by school leadership and management through implementing all discussed principles.

2.3.7 Improvement of operational school activities

Vijaya (2015:1097), defined continual improvement (CI) as a series of subtle and gradual improvements that are made over time. Vijaya (2015:1097) additionally pointed out that the concept of continual improvement comes from the Japanese term, 'kaizen', which was initially developed and spread by Masaaki Imai, known as the master of continual improvement, in 1989. ISO 9001:2015 (10) averred that successful organisations have an ongoing focus on improvement. Díaz and Martínez-Mediano (2017:5) asserted that, in the school context, the starting point for the assessment of improvement objectives can be based on an initial implementation of CI. Andreoli and Klar (2021:1) correspondingly stated that leading CI efforts by school leadership and management require a planned approach and a subject matter knowledge, that is, knowledge of how to identify problems, assess outcomes and implement changes.

This QMP (factor) as an 'acting principle' is linked to this study for the following aspects. Firstly, it is linked to this study, due to the fact that it will provide public school educators and staff with training methods and tools for CI. Secondly, it will assist public school leadership and management with setting objectives for guiding CI and providing measurement data to monitor the objectives. Lastly, it will help school leadership in recognising and acknowledging school improvements. According to ISO 9001:2015 (11), the key benefits and challenges of this QMP (factor) that school leadership and management will experience are as follows.

The key benefits of improvement of operational school activities:

- It improves process performance, organisational capabilities and customer satisfaction.
- It enhances focus on the root-cause investigation and determination, followed by prevention and corrective actions.
- It enhances the ability to anticipate and react to internal and external risks and opportunities.
- It enhances consideration of both incremental and breakthrough improvement.
- It improves the use of learning for improvement.
- It enhances drive for innovation.

The key challenges of improvement of operational school activities:

- Promoting the establishment of improvement objectives at all levels.
- Educating and training staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives.
- Ensuring that staff are competent to successfully promote and complete improvement projects.
- Developing and deploying processes to implement improvement projects throughout the organisation.
- Tracking, reviewing and auditing the planning, implementation, completion and results of improvement projects.
- Integrating improvement considerations into the development of new or modified services and processes.

Talib *et al.*, (2014:157) stated that the construct of process management influences CI and leads to high-quality outcomes. In the same way, Rocha-Lona, Garza-Reyes and Kumar (2013:135) stated that, to ensure CI without facing any obstacles, leaders and individuals must commit to the culture that supports CI.

However, the culture of CI is to be aware of the current culture, identify the elements that can be retained or discarded, design a culture for the future, share the vision, align leaders, and empower and train employees. Furthermore, the culture of CI is to build the ethics of teamwork, involve everyone from top to bottom in decision-making, celebrate achievements and remove culture barriers (Rocha-Lona *et al.*, 2013:135).

On the one hand, Verma and Prasad (2017:193) asserted that, as the school environment is rapidly changing, due to the development of new technology, it is essential for school leadership and management to refine their competencies for new challenges, so that they are able to handle unforeseen critical challenges that hinder the school CI. On the other hand, Ronkko and Lepisto (2015:61) averred that the European Commission obliges basic education, principals and educators to provide education that adapts to future environmental changes. Finland has become an early adopter and reformer of 21st century education and is now taken into consideration throughout the education system.

This QMP (factor) impacts this study, due to the study's research problem that advocates for the identification of factors that are affecting the practice of QMPs (factors) for school leadership and management to be ambidextrous, by performing school operational activities as efficiently and effectively as possible, and has the ability to be efficient in leading and managing the changing school environment, as well as to be adaptable for coping with changing demands (Van Assen, 2020:435).

According to Ershadi, Najafi and Soleimani (2019:1094), the requirements and characteristics of innovative organisations to achieve sustainable development and improvement in the current changing environmental conditions need a rapid response to the environmental changes and flexibility of the organisations; therefore, having an innovative organisational model which leads to innovation in the organisation, provides the possibility for the organisation to provide suitable responses by considering the type and amount of pressure, and environmental threats. According to Naidoo (2017:92), continuous innovation aims at the capability to create both innovation and CI based on performance perspectives; therefore, the capability to achieve excellence such as high-quality knowledge innovation activities is increasingly regarded as a source of benchmarking. The innovation method on CI as a dynamic capability within the school context is discussed next.

2.3.7.1 Innovation method on continual improvement related to schools

Organisations employ dynamic capabilities, which are high-order capabilities that improve zero-order capabilities to make organisations gain positive long-term performance, and to sense opportunities by seizing and reconfiguring available resource bases into new resources that better fit changes in the external environment. Therefore, employing dynamic capabilities leads to short-term improvements that, by adopting a long-term perspective, turn into radical shifts, (Galeazzo, Furlan, & Vinelli, 2017:34). According to Galeazzo *et al.*, (2017:35) CI is deployed through a leadership and management method, such as the DMAIC method, which causes a set of small-scale improvements based on the evaluation of the root causes of problems, and the DMAIC model is identified as follows.

- Define – Define the school problem
- Measure – Quantify the school problem
- Analyse – Identify the cause of the school problem
- Improve – Implement and verify the solution
- Control – Maintain the solution

As a result, this QMP (factor) is adopted in this study for the following reasons. Firstly, it is adopted due to the fact that it will guide school leadership and management in aligning improved school activities to all levels regarding school strategic direction. Subsequently, it is adopted because of its ability to assist school leadership and management in being flexible and agile to react quickly to school opportunities, as well as in ensuring that the opportunities are achieved. Lastly, the principle is adopted for its ability to help school leadership to adapt to school external environmental changes that are derived from technological changes (Jaccard, 2013:113).

In support of the literature discussed in this QMP factor (improvement of operational school activities), the study, *The impact of ISO quality management systems on secondary schools in Spain*, conducted in Spain by Díaz and Martínez-Mediano (2017), found that quality management in schools contributes to improvements of school activities through school management and evaluation of quality management systems, continuous improvement processes and management of school resources.

This section provides insights regarding the ISO 9001:2015 seven QMPs (factors) and clarifies how the QMPs (factors) are linked to this study. The factors (QMPs) formed the basis for this study. Furthermore, the discussed factors are employed in the study to, firstly, identify the most significant factors of QMPs for improving school performance in the Tshwane District. Secondly, to identify the factors that support the seven QMPs in the Tshwane District. Lastly, to provide recommendations on the factors that improve school performance in the Tshwane District.

The following section discusses school performance as a construct of the study that the identified seven QMPs factors evaluated, according to the discussions of the principles.

2.4 School Performance

According to Lamas (2015:353), school performance is a measure of the indicative and responsive abilities that express, in an estimated way, what has been learned because of a process of education or training, and it involves meeting milestones, achievements and objectives set in the programme that a learner attends.

This section firstly discusses the performance management leading to school improvement. Secondly, the section discusses public school functions to improve school performance. Lastly, the section discusses school district functions to improve school performance. According to the study by Lamas (2015:353) that was conducted in Peru, found that, school performance is an issue that deeply concerns learners, parents, educators, school leadership, school districts and authorities, not only in Peru, but also in many countries and continents around the world.

According to Fernandes and Rinaldo (2018:415), performance is defined as the outcome produced and reached by processes, and programmes evaluated and compared with objective. De Menezes and Escrig (2019:1227) asserted that performance programmes are required to support CI, as well as to ensure that all sub-programmes work optimally towards the desired objectives. The next section discusses school performance management that leads to school improvement.

2.4.1 School performance management leading to school improvement

De Menezes and Escrig (2019:1227) defined performance management as a regular process of identifying, measuring and developing performance of the workforce in alignment with strategic objectives. It should be noted that literature on quality performance management suggests that the implementation of quality management programmes to improve performance will not be successful, unless great attention is paid to the human resource (Habtoor, 2016:460).

According to Patyal and Koilakuntla (2017:511), meeting the demands of stakeholders means continuously enhancing performance by improving quality of services through various quality management systems. Antunes, Quirós and Justino (2017:1478) averred that innovation performance is needed in different sectors, and schools cannot benefit from innovation performance, if there is no adequate resource support from school districts. According to Maritan and Lee (2017:2412), the resource allocation process followed in this study is identified in Figure 2.5.

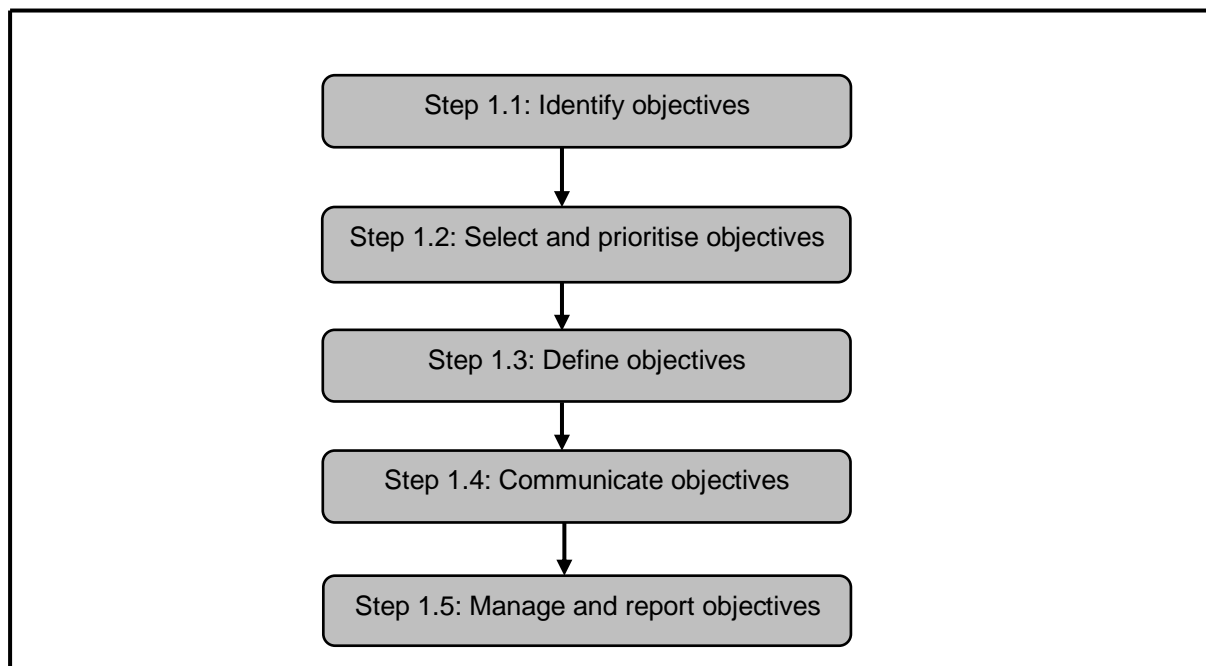


Figure 2.5: Resource allocation process

Source: Maritan and Lee (2017:2412)

Step 1.1 Identify school objectives

This step, on the one hand, requires the school principal to identify long-term objectives, evaluate how each objective will require resources and determine if the required resources are available. Fernandes and Rinaldo (2018:414) stated that strong leadership achieves objectives through maximum contribution by utilising the existing and available resources of an organisation. On the other hand, with regard to the increasing performance of the objective, principals must identify the outcome of the objective and identify educators to perform the objective.

Step 1.2 Select and prioritise school objectives

After the identification of the objective, the school principal must select the objective based on how it will impact the school direction and how its value contributes to the school direction.

Step 1.3 Defining school objectives

This step requires school principals to define selected objectives, according to the value that it has on the school direction.

Step 1.4 Communicate school objectives

The principal needs to communicate the need for the selected objectives to all school stakeholders, and communicate how the objectives will benefit the stakeholders and the school. Fernandes and Rinaldo (2018:413) equally stated that it is the responsibility of a leader to create sustainability through horizontal and vertical communication, and to be willing to listen to complaint and critiques.

Step 1.5 Managing and reporting school objectives

School principals who deploy resources to selected objectives must track the performance of the objective and report the progress made by the objective towards its targeted stage. De Menezes and Escrig (2019:1229) stated that the resource orchestration theory, which addresses how leaders can facilitate efforts to effectively manage the organisation's resources, implies that feedback from performance management is critical, not only for improvements at employee level, but also for leaders to adapt and mobilise resources towards better performance.

Elshaer and Augustyn (2016:1286) supported this theory by asserting that many scholars agree that quality management is a source of advantage within the context of the resource-based view (RBV) in an organisation, and from the theoretical perspective, this may occur, if quality management is seen as a distinctive organisational capability embedded in the processes. The next section discusses public school functions to improve school performance.

2.4.2 Public school functions to improve school performance

According to the NDP 2030 (2012:302), 'public school' is defined as a free local school maintained at public expense for pupils of a community or district that constitutes a part of a school system. The following section discusses public school shortcomings and successes that influence school leadership and management's performance.

2.4.2.1 Public school successes and shortcomings

According to NDP 2030 (2012:302), South African public school successes over the last 18 years have largely been providing universal access to educational opportunities for the majority of learners, improving infrastructure, and equalising resource allocation.

The major shortcoming of South African public schools is the quality of school education performance. Furthermore, the main contributing factors to the shortcomings are human capacity weaknesses, the lack of co-operation between key stakeholders, school support structure from school district offices, and the fact that attempts to address the public school shortcomings have been characterised by the lack of school leadership and management accountability in schools (NDP 2030, 2012:302).

Further to the lack of leadership and management accountability in schools, the public notification by the DBE (2020) supports the NDP (2030) by stating that the key interdependence areas that constitute the core purpose of school principals that this study achieved through identifying and evaluating the most significant factors of the seven QMPs to improve school performance in the Tshwane District, are shaping the direction and development of the school; managing quality and securing accountability in schools; developing and empowering self and others in schools; managing the school as an organisation; managing human resources in schools; and leading teaching and learning in the school. The next section discusses the DBE as the policy-makers of public schools.

2.4.2.2 Role of the department of basic education in public schools

According to Bello and Othman (2020:98), basic education is defined as the department designed to meet elementary learning needs of individuals or the population. Gupta and Kaushik (2018:580) defined basic education as a social process, growth, and not being a preparation for life, but life itself. The DBE oversees both the school district and public schools to implement the identified and evaluated significant factors of the seven QMPs to improve school performance in the Tshwane District.

The role of the DBE in public schools is to monitor the standards of the provision, delivery and performance of education on both an annual and a quarterly basis in South Africa, with the objective of assessing compliance with the provisions of the South African Schools Act of 1996. The purpose and nature of the DBE covered in this study is to assist school leadership, management and districts with developing, maintaining and supporting the school education system for the 21st century (DBE, 2020). According to Brinia, *et al.* (2020:66), in the context of the globalised society of the 21st century, effective school management is a prerequisite for the social and economic development of countries, and the role that schools must play in managing school leaders, is a key factor in the effective functioning of schools.

The DBE (2020) vision statement is, *Having a country in which all people will possess access to lifelong learning, education and training opportunities, which will in turn contribute towards improving the quality of life and building a peaceful, prosperous and democratic South Africa.* In this study, to ensure that the DBE vision statement is able and capable to assist school leadership, school management, and the school district to move schools forward, the characteristics of the vision statement (graphical, directional, focused, flexible, feasible, desirable, and easy to communicate) must be evaluated and analysed, according to degrees (large, medium and low) that match the actual vision of the DBE.

The DBE (2020) mission statement is, *To provide leadership in the establishment of the South African education system for the 21st century.* The mission statement is employed in this study and, consequently, it will guide school leadership and management in establishing an education system that intends to adapt to the 21st century, which equally leads to quality management. For this reason, the mission statement contributed to the study by evaluating whether the school objectives are aligned to the DBE mission statement.

The next section discusses school management that is comprised of SGB and school principals. The identified school management is linked to this study, as the seven QMPs factors are evaluated against the school decision-making and activities instructed by school management.

2.4.2.3 Public school management

Bytheway *et al.*, (2017:699) averred that public school management is a human resource allocated to schools' strategic planning and implementation to improve the administration of school activities and processes, to manage school information, and to be flexible and agile to respond to school changes as they happen. According to Sebastian *et al.*, (2019:592), management is a set of well-known processes, which includes planning, budgeting, structuring jobs, staffing jobs, measuring performance and problem-solving, which helps an organisation to predictably do what it knows, and to do it well.

In the school setting, school management needs to adapt to the school environmental changes for schools to be sustainable, and to apply three levels of management when anticipating the future school environmental changes that might hinder the vision and the mission of schools (Sweis, Saleh, Dahiyat, Sweis, Saleh & Diab, 2016:247). The levels of management are discussed in the following section.

2.4.2.3.1 Levels of management

Sweis *et al.*, (2016:247) defined the levels of management as the key quality management pillars, and the levels are committed to producing quality outcomes. According to De Menezes and Escrig (2019:1227), the seminal work of Deming (1986) demonstrates the importance of setting goals for performance at different management levels. The levels of management are demonstrated in Figure 2.6.

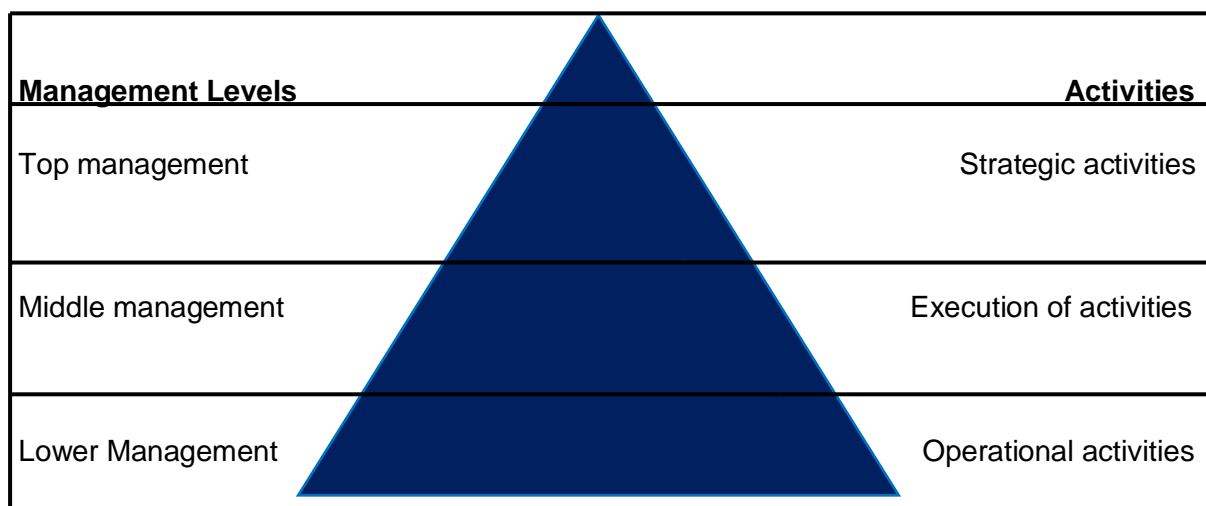


Figure 2.6: Levels of management

Source: Venter (2014:68)

According to Venter (2014:68), there are three levels of management, namely top management, middle management and lower management. The top management level sets the strategic direction and analyses the environment. The study, *Quality management principles and school quality*, by Elahi and Ilyas (2019), conducted in Pakistan, tested school environmental scanning by school leadership, and found that the QMPs can be the contributing factors to scanning the school environment to acquire new school knowledge. In this study, school leadership as top management that is responsible for strategic activities is responsible for scanning and analysing the school environment to acquire information that can be adopted by educators, members of the SGB and school staff.

Wu (2020:3) averred that top management is believed to create a work environment for empowerment, innovation and agility through articulating values, high performance expectations and reinforcement of these values. Lamine and Lakhal (2018:1887) asserted that top management level is considered as the engine of quality improvement, and the level is given a higher importance to quality management, and provides commitment and support to achieve the organisation's strategic visions and objectives.

From the operations management level perspective, performance management translates the strategic direction into the reality of work units and, ultimately, to individuals (De Menezes & Escrig, 2019:1227). The study, *Is there such a thing as school quality culture?*, by Markowitsch (2018), conducted in Austria, found that when lower management implements operational activities, there must be a correlation between school culture and operational activities to ensure quality management of the operational school activities.

This study uses the levels of school management in Figure 2.6 in the following ways. Firstly, under top management level, the DBE strategic direction is discussed, then the roles and purpose of school principals and, lastly, the school vision and mission that are aligned to the DBE strategic direction are discussed. Also, under middle management level, the supporting duties of school districts, the school decision-making of SGBs and, lastly, the school functions are discussed.

Finally, under operations management level, the school activities, tasks, and initiatives assigned to educators and school staff are discussed. To a larger degree, this study discusses the school operations activities at the operations level more than the strategic activities at the top level and middle management activities at middle level. The next section discusses the functions of management that apply to school leadership and management.

2.4.2.3.2 Functions of management

According to Stamatis (2013:47), the functions that are related to management levels discussed above are planning, organising, leading and controlling. These management functions are shown in Figure 2.7 and discussed below.

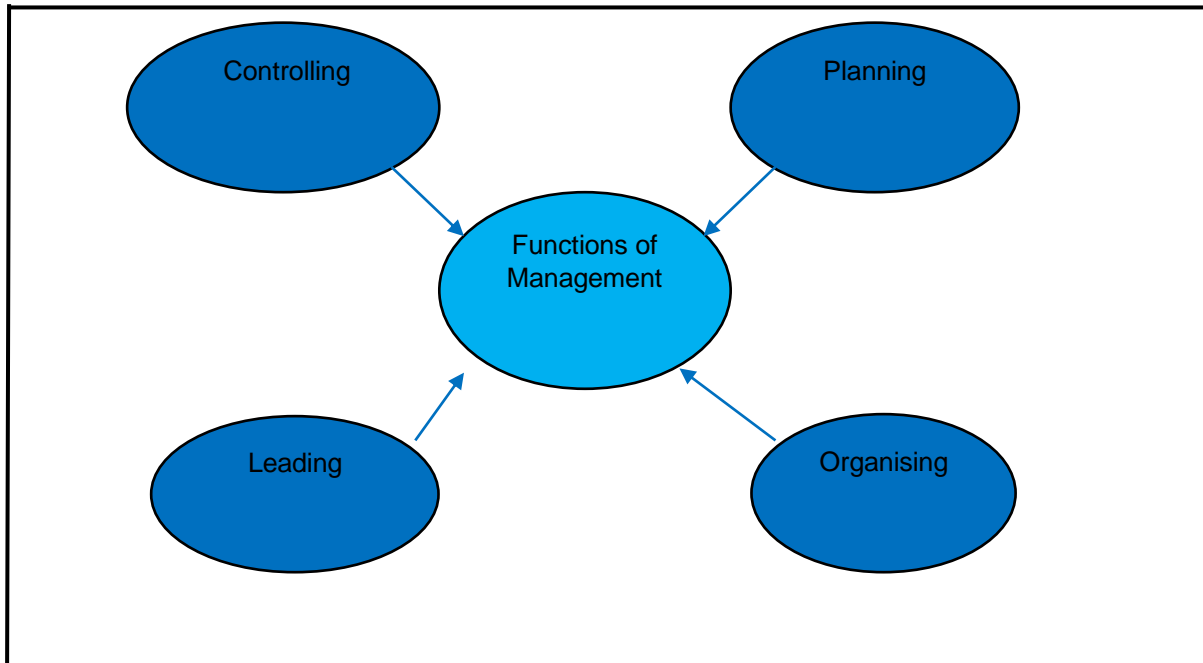


Figure 2.7: Management functions

Source: Koontz and Donnel (1972)

According to Robert and Wayne, (2020:11), planning is the setting of objectives and ensuring that the objectives are achieved, and it involves defining the vision, mission, directions and objectives. Moreover, planning includes gathering of data, analysis of data, creating innovative approaches to strategies and decision-making, (Robert & Wayne, 2020:11).

According to Venter (2014), organising is the use of resources such as individuals, activities, initiatives, tasks and machines to perform the work, and when organising, the tasks and work to be performed must be defined with proper relationship between activities and individuals developed. Robert and Wayne, (2020:13) stated that, leading as directing is the influencing and motivation of workers to work towards the objectives, and controlling as monitoring is the process of determining how well objectives are being achieved.

In this study, the functions of management levels discussed were to be employed by school districts, school principals, SGBs and educators. The following section discusses the theory of school management by scholars and authors that is related to the discussed levels of management and functions of management.

2.4.2.3.3 Theory of school management

The management theory employed in this section that will assist public schools to integrate the school system is the system management theory. Naidoo (2017:70) averred that the systems management theory emphasises the interdependence of all parts of a defined system, and recognises that an organisation is a complex system of varied elements increasing the need for decisions; moreover, it increases the work and goal-oriented or person-oriented approaches.

In this study, the work and goal-oriented or person-oriented approach is that the school top management is school principals that focus on strategic activities in school stakeholder engagement, school leadership and school decision-making, implementation of policies, and school processes and procedures. The middle management in this study is the SGB that focuses on governance, school relationship management and smooth running of a cohesive school architecture. The lower management in this study are educators that focus on the day-to-day school operational activities and initiatives.

On the one hand, Meintjes (2018:1) stated that, in South Africa, the capacity for democratic governance and participation within schools has been provided by the South African Schools Act of 1996 (Act No. 84 of 1996) (SASA), which replaced centralised authority with school governing bodies and decentralised school-based management.

However, on the other hand, Bush and Glover (2016:211) mentioned that the key legislation introducing a unified system is the SASA, which gives considerable attention to school management, recognising its importance in developing a fully functional system, which improves school outcomes. In this study, the QMP factor that introduces a unified approach to school quality management is the process approach in schools that advocates enhancing the school's ability to focus effort on key processes and opportunities for school improvement, and providing consistency and predictable school outcomes through a system of aligned processes.

Dzotsenidze (2018:118) argued that the SASA is aimed at developing public schools, and because of that, public schools develop the public sector in education. In this study, the QMP factor that advocates developing public schools is the evidence-based decision-making in schools' factor because it improves decision-making processes in schools, and the

effectiveness and efficiency of school operational activities, and ensures that school staff are competent to analyse and evaluate school data, and information as needed.

Ocham and Okoth (2015:815), asserted that school management that works through staff must ensure appropriate strategies are used to maintain a satisfied workforce necessary for quality management, so that CI in activities involving school managers, educators and staff in schools works towards improving performance at every management level.

The following section discusses the SGB as part of school management that participates in school decision-making, as well as school processes, policies and school activities.

2.4.2.4 School governing body in school decision-making

Dzotsenidze (2018:118) defined SGB as the school governance that is comprised of parents, educators, learners and school principals, which is the global trend mechanism of decentralising basic education in the development of school governance bodies for all school stakeholders to participate in school decision-making and school processes.

According to the SASA, SGBs must ensure that schools are governed in the best interest of all school stakeholders. Additionally, the SASA points out that SGBs must ensure that there is school development, that schools adopt a constitution that sets out how the SGB will operate, that schools adopt a mission statement, and that the SGB helps principals, educators and other staff members to perform their professional functions. Finally, the SGBs must decide on school policies.

The study of Hunter and Molapo (2014:304), Hossain (2018:129), and Dzotsenidze (2018:118) identified seven countries (Bangladesh, India, Cambodia, Uganda, Tanzania, South Africa and Lesotho) that were analysed to answer the question, “How is school governance reform changing in these countries?” The answers to this question are tabulated below by identifying the statement that is aligned to each country.

Table 2.4: International school governance reform

Source	Statement	Country
Hossain (2018:133)	Education reforms in Bangladesh since the 2000s has focused on SGB, decentralised authority, and participation of school stakeholders to ensure more accountability.	Bangladesh
Hunter and Molapo (2014:304)	From 1992 to 1996, the government of Lesotho started decentralising the education system to SGB through building district centres, and	Lesotho

Source	Statement	Country
	legalising school advisory and management committees.	
Hossain (2018:137-144)	In India, the SGB approach places school principals at the heart of the supervision system.	India
	In 1995, Cambodia introduced the SGB to the country's education system, similar to India and Bangladesh SGB policy.	Cambodia
	In Tanzania, the SGB system has been adopted as part of a comprehensive education policy in the country.	Tanzania
Dzotsenidze (2018:118)	SGB in South Africa still struggle to fulfil responsibilities delegated to them.	South Africa
Hossain (2018:144)	In Uganda, the SGB have been an integral part of the basic education system since the mid-2000s; however, this practice has not produced any significant outcomes because of limited knowledge of management committee members.	Uganda

Source: Own compilation (2022)

Table 2.4 shows that the study focused on local, African and international studies. According to the statements in Table 2.4, it is evident that the governments in these countries changed how schools are governed, as most of the countries decentralised the education system to accommodate school stakeholders. In this study, the QMP factor that advocates the engagement of school stakeholders in school decision-making is the school relationship management factor because it enhances performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder, and promotes common understanding of school objectives and values among school stakeholders.

The following section supports SGB by linking and incorporating school leadership and management duties in the school administration.

2.4.2.5 School administration of activities

According to the National Policy on Whole-School Evaluation (2001:12), the executive authority for professional administration of schools is in the hands of principals supported by the SGB. The principal may delegate certain activities to staff, including quality management matters, whenever the need arises. It should be noted that there has been no revisions of the National Policy on Whole-School Evaluation (2001) since the document was published in

South Africa in 2001, as it remains a White Paper document. Therefore, the National Policy on Whole-School Evaluation (2001:12) states that the school principal is responsible for the following activities.

Firstly, carrying out an internal evaluation of the school, in line with the requirements of the National Policy. Secondly, co-operating with the evaluation team, especially by providing interviews at appropriate times. Thirdly, identifying an evaluation coordinator to liaise with the evaluation team during evaluation exercises, and the coordinator will not be part of decision-making when the evaluation of the school's performance is made.

Furthermore, producing, in collaboration with the support services and the SGB, an improvement plan, in response to recommendations made in the evaluation report, and consulting with all school stakeholders. Moreover, sending the improvement plan to the district for approval, as well as implementing the improvement plan. Finally, communicating with all school stakeholders about the intended evaluation, and distributing a written summary of the main conclusions and recommendations of the evaluation. The next section discusses school districts, as part of school management, which support school principals and public schools with resources for schools to execute school activities and improve school performance.

2.4.3 School district functions to improve school performance

The National Education Policy of 1996 (Act No. 27 of 1996) (1996:10) states that the term, 'school district', is used to describe the administrative unit and is defined as the area of province which is demarcated by the Member of the Executive Committee (MEC) for administrative purposes. It is, therefore, the first level of administrative sub-division of the Provincial Education Department (PED).

According to National Education Policy of 1996 (Act No. 27 of 1996) (1996:4), education districts have a pivotal role in ensuring that schools deliver education of progressively high quality, and the purpose of education districts is to work collaboratively with school leadership to improve educational performance and give management support.

According to Schlebusch (2020:75), low-performing schools are in need of support from school districts to build their capacity to permanently change the teaching, learning culture and climate at such schools, and school leadership is seen to be most productive when carried out in collaboration with supportive and reliable district-level leadership. As a result, school districts determine the overall vision and expectations of schools in the district, and school principals are permitted to lead the school with some autonomy.

NDP 2030 (2012:310) asserted that education districts require skills and expertise in school leadership, planning and monitoring, and problem-solving to provide effective support to schools. Moreover, NDP 2030 (2012:310) stated that many weaknesses in schools reflect weaknesses at the district management level.

In addition, NDP 2030 (2012:314) pointed out that education districts should help with developing the leadership and management capacity of school principals, and this development should cover training in key responsibilities of school principals and members of school senior management teams. The next section supports school districts by identifying and discussing the responsibilities of school districts.

2.4.3.1 Responsibilities of school districts

According to the National Policy on Whole-School Evaluation (2001:11), the district support services, which need to consist of teams with expertise in general school management, school leadership, governance, staff development, and school planning must take responsibility for monitoring and supporting schools to raise standards, and the quality of education. Firstly, the responsibility of school districts is to coordinate staff development programmes, in response to educators' individual professional needs, and the requirements of policies and activities. Secondly, their responsibility is to guide schools in the implementation of the recommendations contained in school policies and evaluation reports. Lastly, their responsibility is to find ways of setting up clusters of schools, as through this approach, improving the performance of schools can be integrated more efficiently and effectively.

The next section discusses the districts' policy on schools, as well as identifying and discussing the model used to solve problems that school districts can come across when working with schools.

2.4.3.2 District policy on schools

According to the National Education Policy of 1996 (Act No. 27 of 1996) (1996:11), the policy on school districts is to work collaboratively with school principals and educators in schools to improve quality of education, and provide school leadership and management with support. Furthermore, the policy Act avers that school districts have four policies that need to be executed, namely planning, support, accountability and public engagement.

Firstly, in planning, the school district must collect and analyse school data to gather school information, assist schools with compiling school development plans, and integrate school development plans into district plans. Secondly, the supporting policy requires school

districts to assist school principals and educators with improving the quality of teaching and learning, and to provide a school environment for professional development of school leaders, managers, educators and administrative staff members.

The next policy of accountability requires the school district to hold school principals accountable for school performance.

In conclusion, the last policy of public engagement requires school districts to engage with the public by informing and consulting with the public regarding schools, and to uphold the Batho-Pele (people first) principles (The National Education Policy of 1996 (Act No. 27 of 1996) (1996:11). According to the Department of Social Development (2021), Batho-Pele is a White Paper used for transforming public service delivery, and it enforces excellent services to the customers of government services. In the context of this study, the evaluated QMP factor that supports the Batho-Pele White Paper is the customer focus in schools, as it increases school customer value, enhances school reputation, and expands the school customer base.

2.4.3.3 International school policies

According to Ocham and Okoth (2015:815), a survey conducted by the National Centre for Education Statistic in Washington found that staff recognition and educator participation in school decision-making influence school policy. Pan, Nyeu and Cheng (2017:168) pointed out that, in Taiwan, the school education system is decentralised, and impacted school policies are no longer automatically executed from school leadership.

In comparison to African studies, Colley (2014:202) stated that, in some African countries, the policies of educators do not always align with the practices of educators. The study of Thulare (2018:72) simply put it that South African education policymaking continues to follow a top-down approach, in that it views policy implementation as an add-on process managed through a series of managerial instructions and mandates. Kolade (2019:182) additionally pointed out that, in 1977, the government of Nigeria adopted a national policy on basic education that incorporates a system of education that offers 12 years of basic education.

Additionally, Thulare (2018:78) stated that, in school policymaking, what is ultimately sought is a change in school outcomes and, therefore, from the bottom-up approach, the actors closest to the outcomes are the educators, who should become the starting point for policy decision-making. On the other hand, Dzotsenidze (2018:103) argued that education decision-making policy has become a prominent approach in the field of education, and is expected to be based on educational research and practice, as decision-making without evidence is a pre-scientific era in education policy. In a similar manner, Pan, Nyeu and

Cheng (2017:168) stated that effective school leadership is necessary to attain the desired effects of reform policies.

Bornman (2017:110) argued that, although there are numerous policies in place to manage schools, these policies have been criticised, and for various issues around poor implementation, as the challenge is that these policies are not evidence-based. Therefore, in this study, the QMP factor that advocates evidence-based policies is the evidence-based decision-making in schools' factor, as it ensures that schools make decisions and take actions based on evidence. Moreover, it also appears that various educators incorrectly interpret the proposed school curriculum as outlined by these policies. Phillips and Chetty (2018:252) additionally stated that, for too long, schooling has been characterised as using the transmission model, where teaching is telling and learning is absorption, and there should be an acknowledgement that there has been a major policy shift in thinking about the concept of knowledge, and the processes of teaching and learning.

2.5 Chapter Review

This chapter critically reviews the importance of ISO 9001 and the seven QMPs (factors) in identifying the most significant factors of the seven QMPs to improve school performance in the Tshwane District, to identify the factors that support the seven QMPs factors in the Tshwane District, and to provide recommendations on the factors that improve school performance in the Tshwane District. From the literature review, it is evident that a void exists in literature on quality management and the seven QMPs factors in public schools, particularly in the South African school context. Therefore, the study fills the void on the gaps identified in Table 2.5 with the action plans that the researcher anticipated, and the identified literature gaps are linked with the research questions of this study.

Table 2.5: Gaps identified in the study

Gaps Identified	Author	Country	Link to Research Question and Research Objective	Researcher action plan
There are very limited studies available that guide the implementation of quality management in schools.	Elahi and Ilyas (2019:578-579)	Pakistan	<p>Research question:</p> <ul style="list-style-type: none"> • What are the most significant factors of quality management principles to improve school performance in the Tshwane District? • What factors support quality management principles in the Tshwane District? • What recommendations can be made on factors that improve school performance in the Tshwane District? 	<p>To contribute to the body of knowledge by:</p> <ul style="list-style-type: none"> • Closing the gaps by achieving the primary research objective • Closing the gaps by achieving the secondary research objective 1 • Closing the gaps by achieving the second secondary research objective 2
No formal study has been conducted to evaluate the relationship between the process approach and the school as a business unit.			<p>Research objectives:</p> <ul style="list-style-type: none"> • To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District • To identify the factors that support quality management principles in the Tshwane District • To provide recommendations on the factors that improve school performance in the Tshwane District 	
No formal study has been conducted in literature thus far to evaluate the relationship between customer focus and the school as a business unit.			Quality management in schools has a positive effect on school performance; however, empirical evidence is scarce.	
The application of ISO 9001 in schools has become widespread, in an effort to improve diverse processes and results in schools; however, there are very few studies that are able to confirm whether ISO 9001 brings true change that is sustainable over time, and leads to improvements in schools.	Soria-García and Martínez-Lorente (2020:49)	Spain	<p>Research question:</p> <ul style="list-style-type: none"> • What are the most significant factors of quality management principles to improve school performance in the Tshwane District? <p>Research objective:</p> <ul style="list-style-type: none"> • To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District. 	

Gaps Identified	Author	Country	Link to Research Question and Research Objective	Researcher action plan
Research on the measurement of stakeholder satisfaction on quality of school services is scarce at high school level.	Senol and Dagli (2017:4860)	Turkey	Research question: <ul style="list-style-type: none"> • What are the most significant factors of quality management principles to improve school performance in the Tshwane District? 	
Research and literature on customer focus practices in the education sector are still limited.	Ibrahim <i>et al.</i> , (2016:205)	Malaysia	Research objective: <ul style="list-style-type: none"> • To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District. 	
There is a lack of accountability by school leadership and management in managing public school resources using quality management systems such as the ISO 9001.	Spaull (2015:114)	South Africa		

Source: Own compilation (2022)

Figure 2.8 defines the path analysis of the literature review in this study.

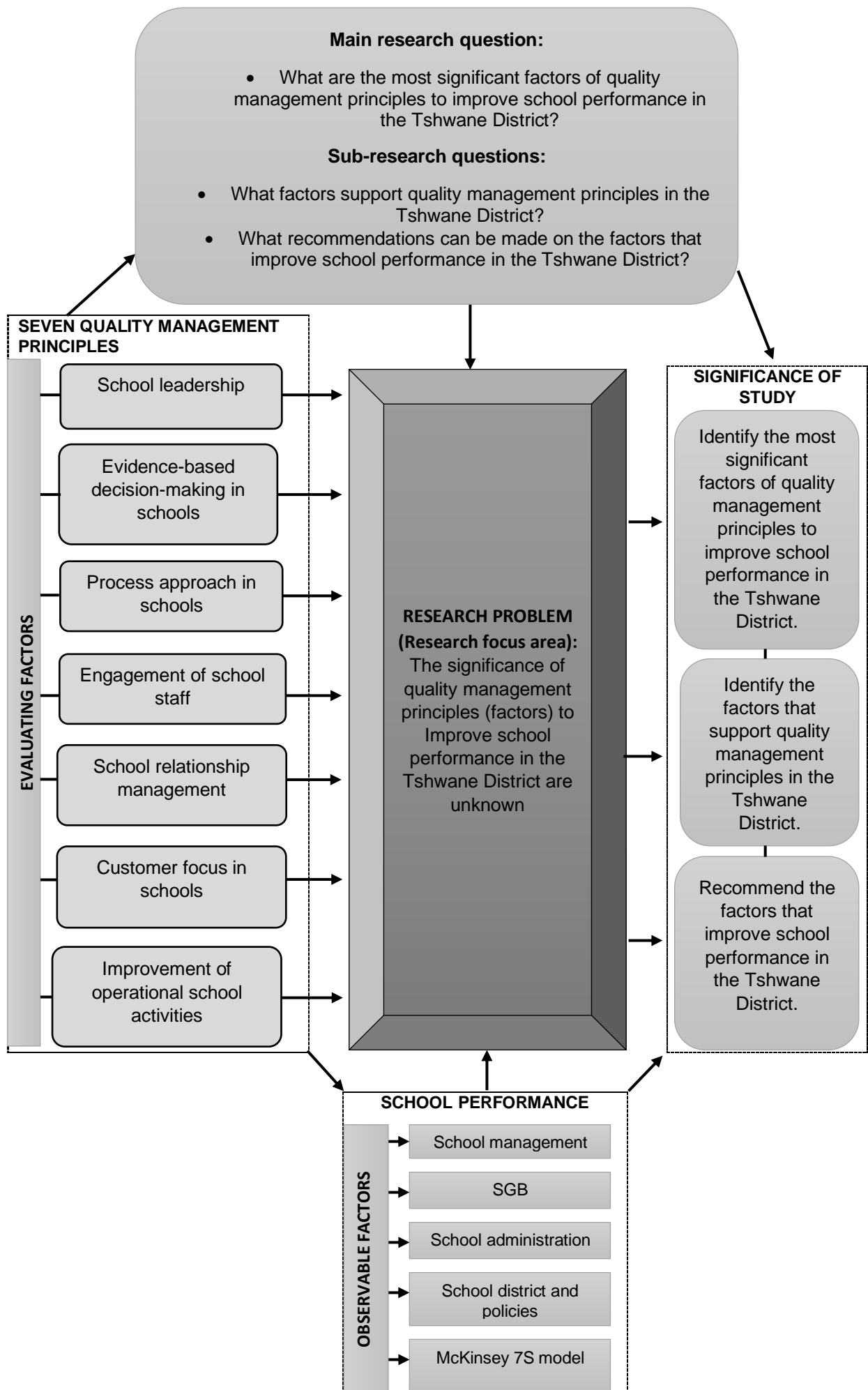


Figure 2.8: Path analysis of literature review in public schools

Source: Own compilation (2022)

From the path analysis in Figure 2.8, it is evident that the evaluated seven QMPs (factors) are linked to the research focus area, and the factors influenced the main research question and the sub-research questions of this study. Moreover, the observable factors, the main research question and sub-research questions contributed to the research focus area, as well as the significance of the study that indicates the importance of the study for a broader research focus area.

Accordingly, this chapter firstly demonstrates how it flows in section 2.1. Secondly, it discusses the quality management, and quality management seminal work and gurus, background of quality management, as well as the ISO 9001:2015 in section 2.2. Thirdly, it discusses and evaluates the seven QMPs (factors) in public schools, from the International Organisation for Standardisation 9001 (ISO 9001) in section 2.3. The chapter then discusses the performance management leading to school improvement, public school functions to improve school performance, and school district functions to improve school performance in section 2.4. Finally, the chapter concludes by discussing the chapter review and defining the path analysis of the literature review in this study in section 2.5.

In Chapter 3, a detailed discussion is provided regarding the research methodology employed in this study to evaluate the seven QMPs factors in public schools. More importantly, the research methodology assists the researcher in identifying and evaluating the most significant factors of QMPs that improve school performance in the Tshwane District, and identifying the factors that support the seven QMPs factors to improve school performance in the Tshwane District.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter provides a detailed account of the literature review, which includes the main and sub-constructs of this study. It includes an analysis of the corresponding and contradicting views by various authors on evaluating the seven QMPs (factors) in public schools to improve performance. In this chapter, the research methodology and research design used to collect, analyse, and interpret data to achieve the aim and objectives of this study is presented. Moreover, the research objectives in this study are presented as primary and secondary objectives. The aim of this study is to identify and evaluate the most significant factors of the seven QMPs, and to identify the factors that support the seven QMPs (factors) to improve school performance and then make recommendations on factors that improve school performance in the Tshwane District. This chapter is presented as outlined in Figure 3.1.

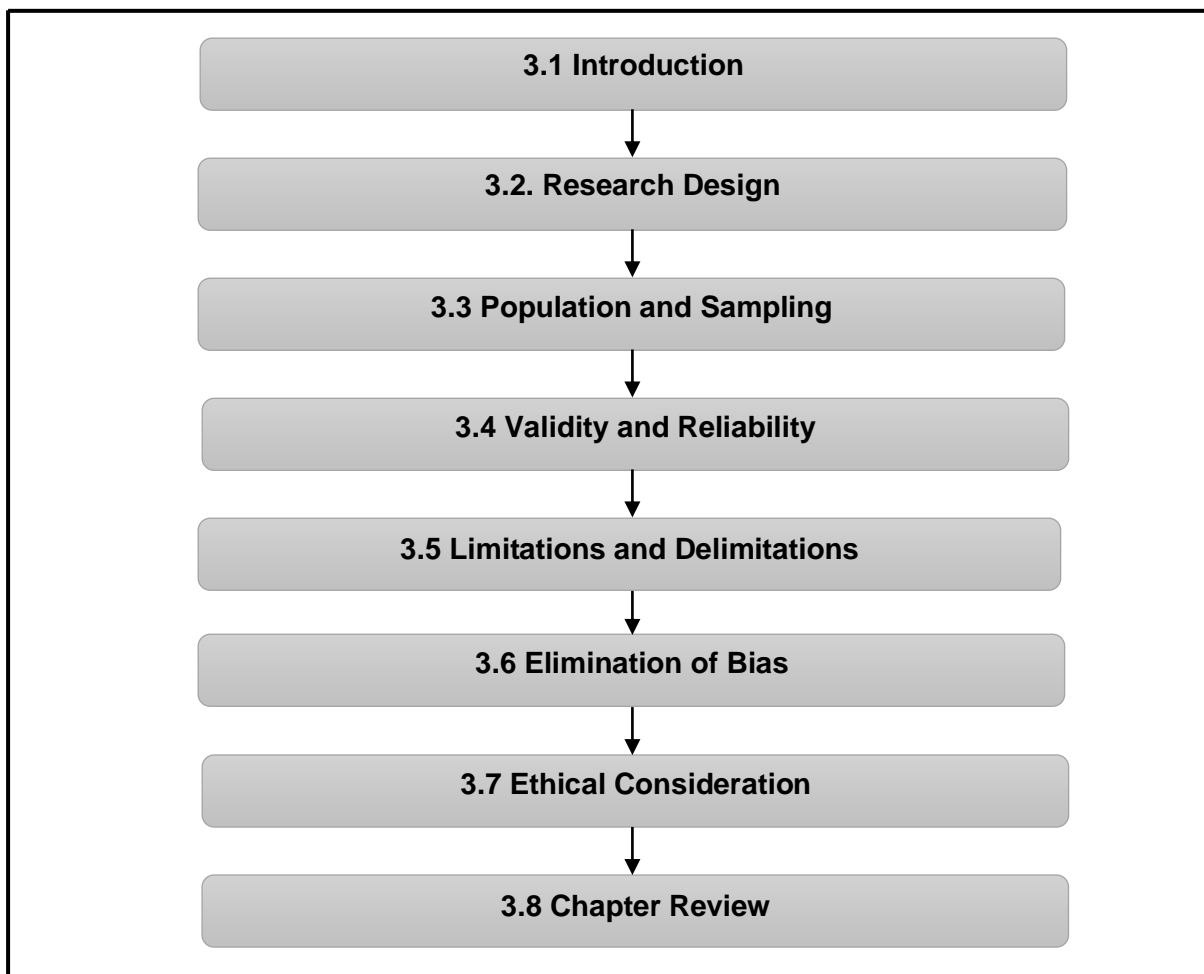


Figure 3.1: Structure of Chapter 3

Source: Own compilation (2022)

3.2 Research Design

Hair *et al.*, (2021:92) defines a research design as a proposal, formation and proposed action of a study formulated to get responses to research questions. According to Creswell and Creswell (2018:49), research designs are plans and procedures for research that cover the research processes in detailed quantitative, qualitative and mixed methods for collecting, analysing and interpreting data. These definitions are elaborated on later in this chapter.

The research design and plan of this study are illustrated in the research onion in Figure 3.2, and the reasons for selecting the research design which was adopted for this study is also provided in this chapter. Additionally, employing a research onion in the research design assisted the researcher to provide greater insights that effectively and efficiently undertake the research problem of the study to achieve the research objectives of the study, and evaluate the seven QMPs factors in public schools in the Tshwane District towards improving performance.

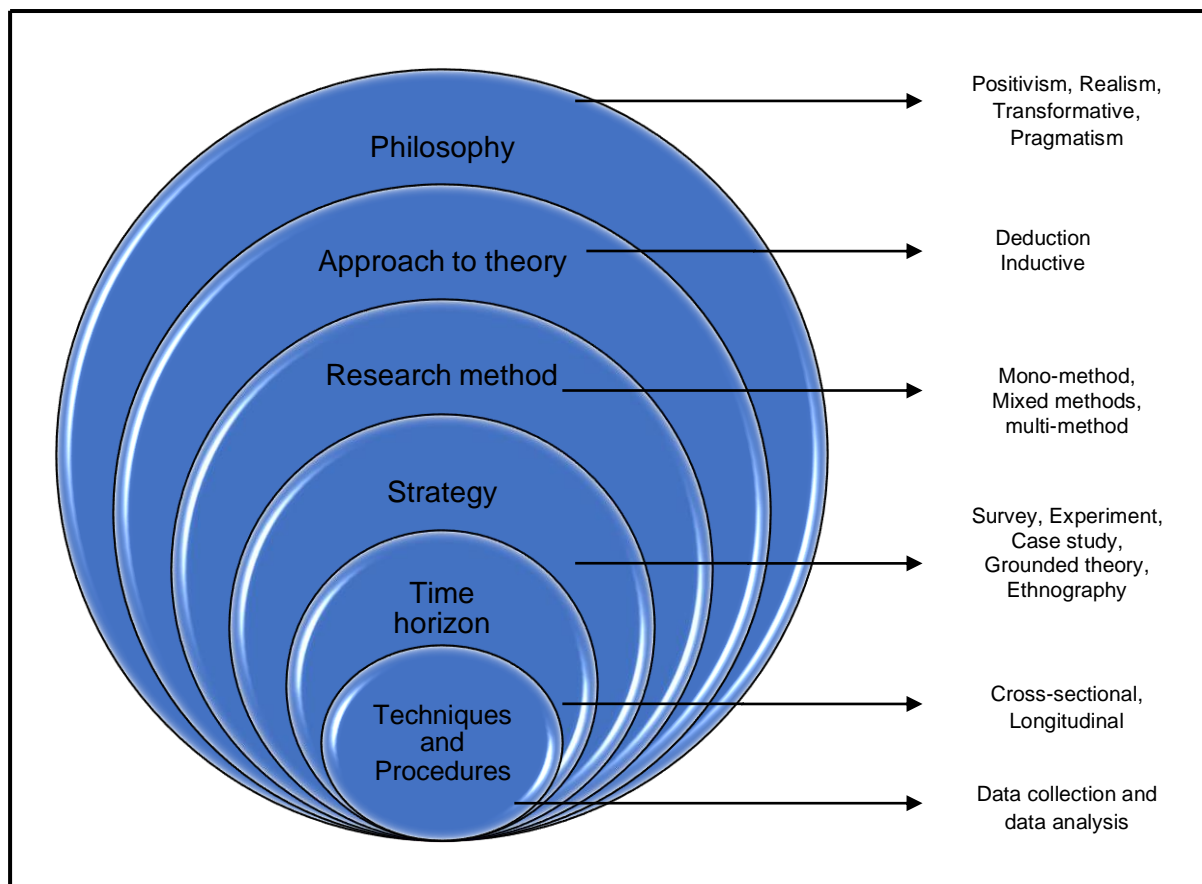


Figure 3.2 Research onion

Source: Saunders *et al.*, (2019:130)

The research onion in Figure 3.2 is made up of six layers, and this section peels and unpacks the research onion with all its applicable layers mentioned, by firstly discussing the philosophy layer, followed by the approach to theory layer, method layer, strategy layer, time horizon layer, and techniques and procedures layer. The next section discusses the inner layer (philosophy) of the research onion as shown in Figure 3.2.

3.2.1 Philosophy

According to Saunders *et al.* (2019:128), the term, 'research philosophy' refers to a system of beliefs and assumptions about the development of knowledge. Burrell and Morgan (2016:4-5) stated that a researcher makes numerous assumptions while embarking on research, of which there are three types, namely:

- *Ontological assumptions* – These are assumptions regarding the reality faced in the research, or what makes something a reality, and how a researcher can understand existence.
- *Epistemological assumptions* – These are assumptions associated with human knowledge, or what forms valid knowledge, whether it can be known, and how a researcher can get it and transfer it.
- *Axiological assumptions* – These are assumptions about the level of influence of the researcher's values on the research process, or what is essential and valuable in the research.

The inner layer (philosophy) of the research onion as illustrated in Figure 3.2 shows the different research philosophies, namely positivism, realism, transformative and pragmatism philosophies.

3.2.1.1 Positivism

Du Plooy-Cilliers, Davis and Bezuidenhout (2014:25) states that, positivism refers to the study of reality that can be objectively viewed and measured. According to Babbie (2021), the key components of a positivist paradigm comprise the following:

- The objective view is led by laws.
- It is generally linked quantitatively, using accurate measurements.
- Various quantitative techniques exist, including structured questionnaires.
- The researcher abides by the independency of topics.
- The research is aligned to deductive reasoning.

3.2.1.2 Realism

Creamer (2019:6) defined realism philosophy that views entities as existing independently of being perceived, but are only being partially and imperfectly perceived, and all knowledge is viewed as partial, incomplete, and uncertain. According to Babbie (2021), realism philosophy relies on explanatory research that observes variation of changes in the independent and dependent variables.

3.2.1.3 Transformative

Doyle, Brady, and Byrne (2016) defined the transformative philosophy as a framework of belief systems that places priority on the incorporation of value-based goals within a mixed methods study. According to Babbie (2021), transformative philosophy relies on participants that help to define the problem statement, and in the transformative philosophy, data is collected in an interactive way.

3.2.1.4 Pragmatism

Creamer (2019:6) stated that, the pragmatism philosophy is an umbrella for realism philosophy. According to Babbie (2021), pragmatism philosophy relies on the abductive reasoning approach to theory.

The research philosophy that this study adopted is the positivism philosophy. A positivism philosophy was adopted because in the context of this study, the key components of the positivism philosophy were applied as the researcher quantitatively used accurate measurements, such as the reliability statistical measurements on the seven QMPs factors, and followed the quantitative techniques such as the structured online questionnaire and the Statistical Package for Social Sciences (SPSS version 26.0) software. Additionally, this study was aligned to the deductive reasoning analytical approach to theory; hence, the positivism philosophy was followed in this study. As a result, the key components of the positivism philosophy assisted the researcher in acquiring a better understanding of identifying and evaluating the most significant factors of the seven QMPs (factors) to improve school performance in the Tshwane District, and identify the factors that support the seven QMPs (factors) to improve school performance in the Tshwane District.

The next section discusses the inner layer (approach to theory) as displayed in the research onion in Figure 3.2.

3.2.2 Approach to theory

The two different types of approach to theory development are deductive and inductive as illustrated in the outer layer (approach to theory) of the research onion in Figure 3.2.

3.2.2.1 Deductive

According to Babbie (2016:49), the deductive approach comprises of reasons of assumptions from general theory to specific theory. Du Plooy-Cilliers *et al.*, (2014:49) states that, the top-down approach is used for deductive reasoning for a concept to be explored and tested to achieve the research objectives so that theory can be adapted or affirmed. In a deductive approach to theory, data collection is used to evaluate propositions related to an existing theory, (Saunders, Lewis & Thornhill, 2016:145).

3.2.2.2 Inductive

Saunders *et al.*, (2019:153) stated that, inductive approach applies in research where the study commences by collecting data from respondents to explore a phenomenon, and the researcher generates theory that is often in the form of a conceptual framework.

The deductive approach to theory is adopted for the study, because the study is non-experimental research. Additionally, the deductive approach is adopted for the study because it applies to quantitative research to describe ways of connecting theory into data, (Creamer, 2019:14). Furthermore, the deductive approach is adopted for the study, as it assists the researcher in testing the literature review theory based on information obtained (Creamer, 2019:14). Furthermore, the deductive approach was adopted because, if the study commences with theory that is often developed from reading literature and designing a research strategy to test the theory, then the study will adopt a deductive approach (Saunders *et al.*, 2019:153). Accordingly, the researcher commenced with corresponding and contrasting views from different authors from local and international literature which were discussed, and tested in Chapter 4. Additionally, the researcher adopted the deductive approach to evaluate the literature that is based on the construct of quality management, the seven QMPs (factors) and school performance, as well as to achieve the results of the study empirically.

The next section discusses the inner layer (research method) as displayed in the research onion in Figure 3.2.

3.2.3 Research method

Babbie (2013:75) defined research method as a focus on the research process, and the kind of tools and procedures to be used. There are three research methods, namely mono-qualitative, mono-quantitative and mixed, as illustrated in the inner layer (research method) of the research onion in Figure 3.2.

3.2.3.1 Quantitative research

Van Zyl (2014:212) defined quantitative research as the social or behavioural science research that explores the processes that underlie human behaviour using exploratory techniques such as surveys. According to Creswell (2014), quantitative research is pre-determined, adopts instrument-based questions, includes observational data, and uses statistical analysis and statistical interpretation.

3.2.3.2 Qualitative research

Van Zyl (2014:212) defined qualitative research as an integral part of conducting research in the social and behavioural sciences. Furthermore, Creswell and Creswell (2018:254) stated that qualitative research is used to uncover trends in thought and opinions and delve deeper into the problem. According to Creswell (2014), qualitative research includes the use of research instruments such as open-ended questions, interview data, document data, audio-visual data, interpretation of themes and patterns (Creswell, 2014).

3.2.3.3 Mixed-methods research

Creswell and Creswell (2018:51) defined mixed methods research as an approach in which the researcher collects, analyses, and interprets both quantitative and qualitative data, integrate the two approaches in various ways, and frames the study within a specific design. According to Caffery, Martin-Khan and Wade (2019:6), Doyle *et al.* (2016), and Hair *et al.* (2021), there are different types of mixed methods research, namely:

- Explanatory sequential design - In an explanatory sequential design, the quantitative data is analysed first, and then the qualitative study is executed to gain further understanding of the outcomes.
- Exploratory sequential design – Exploratory sequential design is characterised by a primary qualitative phase which builds into a quantitative phase.
- Convergent design - In a convergent design, quantitative and qualitative data are collected concurrently but remain separate and the findings of one method do not depend on the results of another method.

The mono-quantitative research method is adopted in the study, as one quantitative research was conducted to collect data through the online questionnaire (Saunders *et al.*, 2016:151). The rationale for adopting quantitative research is that an expansion study was selected. Consequently, an expansion study allows and requires the quantitative findings to be explained and discussed (Doyle *et al.*, 2016). According to Creswell and Plano-Clark (2011:69), the advantage of adopting quantitative research is that it is straightforward, and it quantitatively collects, analyses, and interprets data to make it understandable.

The adoption of quantitative research method in this study assisted the researcher in drawing conclusions based on the numerical measurements of characteristics (Scott & Garner 2013:9). Furthermore, the quantitative research was suitable for this study, since it involves the collection of data, so that information can be quantified and subjected to statistical analysis (Creswell & Creswell, 2018:49). Moreover, descriptive quantitative research was employed in this study to ensure that the research objectives are achieved (Cooper & Schindler, 2014:21). Therefore, the study followed quantitative descriptive research to identify and then evaluate the most significant factors of QMPs that improve school performance in the Tshwane District, and to validate the findings on these QMPs factors.

Furthermore, quantitative research is adopted due to its narrative of that, in a mono-method quantitative research, the researcher identifies the research problem based on trends that the researcher seeks to establish an overall tendency of responses from individuals in the field of the study or on the need to explain why something occurs, (Creswell, 2012:13). For example, in this study the trend of the research problem was that the significance of QMPs factors to improve school performance in the Tshwane District are unknown, which the researcher engaged through an online questionnaire with respondents on the trend.

The next section discusses the inner layer (strategy) as displayed in the research onion in Figure 3.2.

3.2.4 Strategy

According to Hair *et al.*, (2019:189), research strategy is defined as a plan of how the researcher will go about answering the research questions. The inner layer (strategy) in the research onion illustrated on Figure 3.2 shows the different research strategies, namely survey, experiment, case study, grounded theory and ethnography.

3.2.4.1 Survey

According to Cohen, Manion and Morrison (2017:334), an online survey is defined as a measurement tool to test a theory or fact through the collection of data at a certain point in time.

3.2.4.2 Experiment

According to Hair *et al.*, (2021:190) experiment is a form of research that owes much to the natural sciences, although it features strongly in psychological and social science research.

3.2.4.3 Case study

According to Yin (2018:13), case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context.

3.2.4.4 Grounded theory

According to Babbie (2016:384), grounded theory is derived from data that is systematically gathered and analysed through the research process in an iterative process.

3.2.4.5 Ethnography

According to Babbie (2016:304), ethnography requires the researcher to be immersed in a study and become part of the respondents in the study to understand the phenomenon being studied.

This study adopted the online survey strategy. The online survey strategy was adopted for the study following the positivism philosophy, associated with a deductive research approach, using an online questionnaire, adopting probability sampling strategies, as well as using the SPSS version 26.0 software to analyse the descriptive data (Saunders *et al.*, 2016). Additionally, an online survey was adopted in the study because it is a systematic process of collecting, analysing, and interpreting information to increase the understanding of a phenomenon about the interested or concerned field of this study (Leedy & Ormrod, 2015:20). Consequently, adopting the online survey research strategy assisted the researcher in identifying and evaluating the seven QMPs (factors) in public schools, which enabled the researcher to understand the most significant QMPs factors and the supporting factors that support the seven QMPs factors to improve school performance in the Tshwane District.

The next section discusses the inner layer (time horizon) as displayed in the research onion in Figure 3.2.

3.2.5 Time horizon

The next sections discuss the time horizons, namely the cross-sectional and longitudinal time horizon, as illustrated in the outer layer in the research onion in Figure 3.2.

3.2.5.1 Cross-sectional

According to Leedy and Ormrod (2015:157), cross-sectional studies are simple in design, and generally aimed at finding out the occurrence of an issue or problem by taking a cross-section of the population at a specific time.

3.2.5.2 Longitudinal

According to Cohen *et al.*, (2017:337), longitudinal studies are required to be conducted over a period of time (can be some years), asking the same questions. Saunders *et al.*, (2016:148) stated that, in longitudinal studies, the basic question asked is, 'Has there been any change over a period of time?'

A cross-sectional time horizon was adopted in this study, instead of a longitudinal time horizon because a cross-sectional study analyses data collected from a population at a specific point in time. According to Saunders *et al.*, (2016:148), cross-sectional studies often employ the survey strategy and explain how factors are correlated in a study. In the context of this study, a survey strategy is adopted, and the survey assist the research in collecting data and determining the correlation between the seven QMPs factors and the factors that support the seven QMPs to improve school performance in the Tshwane District; hence a cross-sectional time horizon was adopted in this study.

The next section discusses the inner layer (techniques and procedures) as displayed in the research onion in Figure 3.2.

3.2.6 Techniques and procedures

According to Saunders *et al.* (2019:157), techniques and procedures are used to collect and analyse data, and include the following:

- *Questionnaire* - A questionnaire is often a paper-and-pencil set of structured and focused questions, and it saves time because respondents can complete it without any direct assistance or intervention from the researcher, and it is self-administered in nature, as an e-mailed questionnaire produces quality data, (Salkind, 2018:123).
- *Observation* - Observation is way of gathering data by watching behaviour, events, or noting physical characteristics in their natural setting, and observations are either

direct observation (occurs when the researcher is directly adjacent to the environment being studied) or participant observation (requires the researcher to be an active participant in the social network being studied), (Salkind, 2018:173).

- *Interviews* - Interviews involves asking questions and getting answers from participants in a study, and has a variety of forms, namely individual interviews, face-to-face interviews, and focus group interviews, (Salkind, 2018:162).

The study adopted the questionnaire technique to collect data as opposed to the observation and interviews techniques because the research method that this study followed is the quantitative research method that requires an adoption of the online questionnaire technique and procedures. The following sections discuss the questionnaire adopted in the study as illustrated in the outer layer (data collection and data analysis) in the research onion in Figure 3.2.

3.2.6.1 Data collection

This section discusses the questionnaire that was adopted to collect data. Furthermore, it identifies and discusses how the questionnaire was constructed, as well as how it was administrated. The data-collection technique was comprised of a web-based questionnaire survey. The questionnaire design adopted the LimeSurvey program. A self-administered approach was followed, utilising a computer-aided web-based questionnaire. Furthermore, an email message explaining the procedure to follow to complete the questionnaire was sent to respondents. The email message included a hyperlink to the Uniform Reference Locator (URL) where the questionnaire was hosted. A dedicated URL was established on the website of the Bureau of Market Research (BMR) at the University of South Africa (Unisa), and the respondents were invited by email to visit the URL and complete the questionnaire online. This online approach was appropriate, as surveys enable researchers to generalise findings on their own.

Figure 3.3 below identifies the planning stages followed for the online questionnaire in this study. Moreover, Figure 3.3 below demonstrates how the questionnaire was constructed, as well as the pilot study of how the questionnaire was administrated.

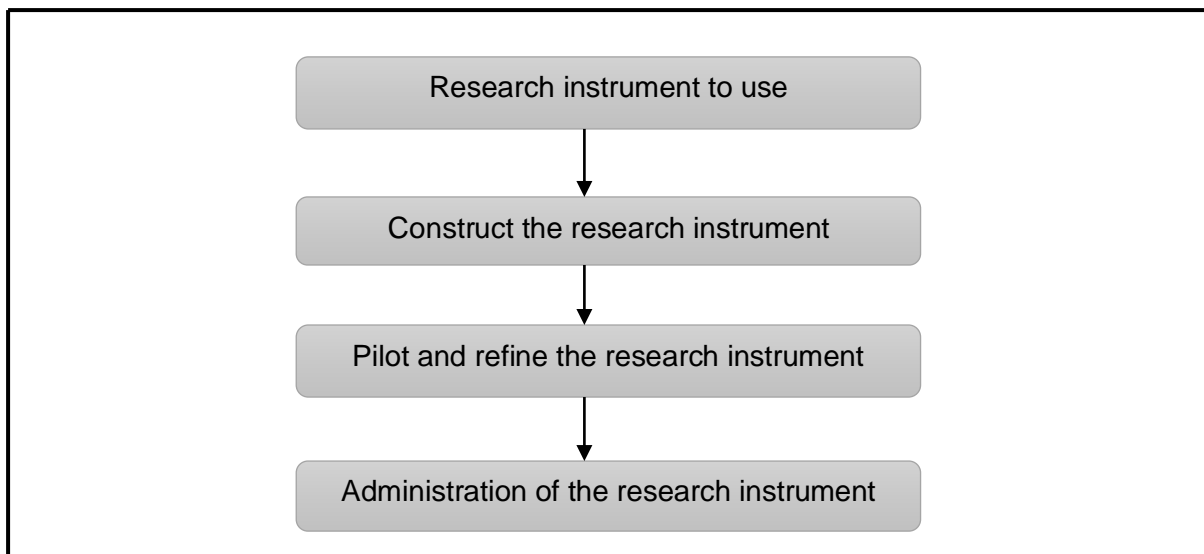


Figure 3.3: Questionnaire planning stages

Source: Adapted from Cohen *et al.*, (2017:337) and Cohen, Manion, and Morrison (2007:210)

3.2.6.1.1 Research instrument

Figure 3.3 (questionnaire planning stages) indicates that the research instrument that was employed in this study to collect data is the online questionnaire. The online questionnaire was based on the closed-ended questions. According to Sreejesh, Mohapatra and Anusree (2014:150), the benefits of using the closed-ended questions are as follows:

- The questions are convenient to respond to.
- The questions ensure that respondents have control when responding to questions.
- The questions makes data analysis easy.
- The questions ensure that there are no discrepancies between the articulated and unarticulated answers.
- The questions increase the rate of response.
- The questions take less time for respondents.

According to Sreejesh *et al.* (2014:150), the challenges of using the closed-ended questions are as follows:

- There is a chance that the selection of choices is improper for disclosing the truth.
- Poorly structured questionnaires will result in untruthful outcomes.
- Closed-ended questions necessitate a preliminary test to ensure precision for the selection choices offered.

- It is not possible to cover all possible answers.
- It is not possible to find out if the question is misinterpreted.

The closed-ended questions were used, so that the researcher could provide respondents with options to choose from, and to allow the respondents to respond without any influence from the researcher. Therefore, the reason for choosing the closed-ended questions is the benefits of the closed-ended questions identified above and knowing the challenges of the closed-ended questions.

3.2.6.1.2 Research instrument construction

Based on Figure 3.3 (questionnaire planning stages), the measurement scales of the questionnaire are the nominal scale, ordinal scale, interval scale and ratio scale (Blackstone, 2012:160).

The nominal scale was adopted in this study, since it serves numbers as labels, rather than just numerical values, and it determines the mode, frequency, or Chi square values (Blackstone, 2012:160). The ordinal scale was also adopted in this study because it classifies data into different categories, where data is arranged in some order. The interval scale was also adopted, as it measures, in terms of equal intervals, or degrees of differences, and can be used for determining the standard deviation, as well as Pearson's correlation coefficient. The ratio scale was not adopted in this study, due to the fact that, quantitative research data either chooses to employ interval scale or ratio scale (Blackstone, 2012:161). Furthermore, the language that was used was English.

Accordingly, in the nominal scale, the researcher identified and evaluated the factors of the seven QMPs (factors), and identified the factors that support the seven QMPs (factors) to improve school performance in the Tshwane District. In the ordinal scale, the researcher classified the data into three categories, namely the school principal category, SGB category and educator category. In the interval scale, the researcher measured the degree of factors of the seven QMPs and the degree of factors supporting the seven QMPs factors to obtain greater insights of the research problem.

3.2.6.1.2.1 Online questionnaire

Based on Figure 3.3 (questionnaire planning stages), the online questionnaire was based on a five-point Likert-scale, ranging from strongly agree or strongly disagree, and sought the demographic information of the respondents. The choice of using the five-point Likert-scale, as opposed to the seven-point Likert-scale, is that the five-point Likert-scale assisted the respondents with considering the decisions made, and it gave respondents the chance to review the choice made to determine the degree of choices (Saunders *et al.*, 2016:378).

Moreover, the five-point Likert-scale was considered sufficient to be employed in this study, as it increases the response rate and permits respondents to choose the most appropriate option that matches the level of agreement (ResearchGate, 2020). Moreover, the five-point Likert-scale gives a green light to the researcher to consider different statistical techniques, such as the t-test, f-test and the regression model and analysis, which were adopted in this study, and to develop an extensive statistical analysis. The five-point Likert-scale, ranging from strongly agree or strongly disagree is as follows:

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

The online questionnaire of this study is demonstrated in Annexure D. Table 3.1 shows the structure of the online questionnaire employed, and outlines the different sections of the online questionnaire.

Table 3.1: Structure of the online questionnaire

Section in questionnaire	Category of question	Likert-scale
A. Biographical information	Demographics	Not applicable
B. Seven quality management principles	Closed-ended questions	Five-point Likert-scale agreement
C. Overview of quality management principles in public schools	Closed-ended questions	Five-point Likert-scale agreement
D. Experience on quality management	Closed-ended questions	Five-point Likert-scale agreement

Source: Own compilation (2022)

3.2.6.1.3 Pilot study

According to Leedy and Ormrod (2015:128), a pilot study is a way to determine the feasibility of the research, and it includes a smaller number of participants from a larger amount used in the whole study from the gathered data. Based on Figure 3.3 (questionnaire planning stages), a pilot study was conducted in this study. Furthermore, the pilot study was used in this study to overcome the survey challenges of obtaining quality data. Moreover, all parts of the survey were piloted to ensure that the online questionnaire sections are well presented and that the questions are understandable.

Therefore, to ensure validity of the online questionnaire, experts were approached to test the online questionnaire, so that their opinions could be incorporated into the data-collection tool. Accordingly, after the online questionnaire was reviewed, necessary changes were

updated, and a pilot study was conducted, including two respondents from the SGB group and two respondents from the educator group, and feedback was used to rework the online questionnaire before it was rolled out to the selected sample. It should be noted that, the data collected from respondents that were used in piloting the online questionnaire, were omitted from the final data collection of the study. Unclear questions were corrected and incorporated into the final version of the questionnaire (Van Zyl, 2014:115).

3.2.6.1.4 Administration of research instrument

Based on Figure 3.3 (questionnaire planning stages), the online questionnaire adopted in this study was self-administered, as the researcher used a link that was emailed to school principals. According to Saunders *et al.*, (2016:362) a self-administered online questionnaire is a questionnaire that is completed by respondents participating in the study. The school principals distributed the online questionnaire link to SGB members and school educators. Consequently, this ensured that the online questionnaire reached enough and acceptable responses from respondents.

Additionally, communication with respondents took place after-hours, as respondents were busy with work duties. Furthermore, requests for participation were done telephonically or by email. The researcher conducted and managed a line graph analysis to evaluate the responses to the questionnaire per week to clarify if there was a change in responses projected and responses received (Creswell & Creswell, 2018:216).

3.2.6.2 Data analysis

Hair *et al.*, (2019:597) defined data analysis as a way to interpret data collected to gain deeper insight into the data collected. As illustrated in the outer layer (techniques and procedures) of the research onion displayed in Figure 3.2, this section discusses the data analysis followed in the study. The study used SPSS version 26.0 software with descriptive statistics such as the mode, mean, median, and standard deviation to analyse data. Moreover, the descriptive statistical analysis was employed in this study, due to the fact that it informs about the attributes that are allocated to scores that are assembled, for example, the degree to which a single score is different from another score (Saunders, *et al.*, 2016:444-447). For this reason, the measurement of score-sharing helped the researcher to interpret the outcomes that are linked to the research problem of this study. Furthermore, the SPSS version 26.0 software was employed in this study, since it was used to identify and evaluate the most significant factors of the seven QMPs, and to identify the factors that support the seven QMPs factors in the Tshwane District to improve school performance.

Accordingly, this study adopted the exploratory factor analysis. According to Babbie (2016:90), exploratory factor analysis discusses in detail the interrelationships between groups of items, and establishes the correctness of constructs and their underlying dimensions. The exploratory factor analysis analysed the interrelationships between the constructs of seven QMPs, quality management and school performance. The factor analysis determined the commonalities of constructs and their underlying dimensions. Therefore, the adoption of the factor analysis assisted the researcher in gaining a better insight regarding the evaluation of the seven QMPs (factors) in public schools to improve school performance.

3.2.6.5.1 Data processing

As illustrated in the outer layer (techniques and procedures) of the research onion displayed in Figure 3.2, this section discusses the data processing followed in the study. Firstly, the data collected was coded on Microsoft Excel spreadsheet because the advantage of entering the raw data on Microsoft Excel spreadsheet before transferring it into the SPSS software is that it is easier to clean the data in Microsoft Excel spreadsheet than in the SPSS software. Secondly, the data was transferred into the SPSS version 26.0 software. The SPSS software uses visual representation analysis of data that includes graphs, charts and tables. Meanwhile, a statistician analysed and interpreted the data (Van Zyl, 2014:163). Finally, the data was interpreted and presented by the researcher considering the findings of this study.

The data analysis tool adopted in this study was the inferential statistics using statistical techniques such as the Pearson's Correlation coefficient. According to Van Zyl (2014:208), the Pearson's Correlation coefficient analysis is calculated because of the fact that it establishes the relationships between the variables identified, and as a result, it determines the relationships between seemingly related variables. Moreover, all the statistical outcomes of constructs identified were briefly discussed and summarised. The descriptive statistics, concerned with the description and summary of data in the form of frequency tables and graphs used to describe some of the characteristics of the distribution of scores collected, were adopted in the study (Salkind, 2018).

The study used the inferential statistical tests to test the variables that emanated from the constructs, which determined if responses from the sample could assist the researcher in drawing conclusions, in relation to the entire population (Babbie, 2016:451). Moreover, standard deviation and mean analysis were used to establish the variations in responses given by respondents.

3.2.6.5.2 Stages of data analysis

As illustrated in the outer layer (techniques and procedures) of the research onion displayed in Figure 3.2, this section discusses the stages of data analysis followed in the study. A descriptive data analysis was used to collect, edit, code, report and file data to ensure that the findings reported were understandable, (Hair, *et al.*, 2019:597). Table 3.2 demonstrates the stages of data analysis that were followed in this study.

Table 3.2 Stages of data analysis

Stage	Description
<ul style="list-style-type: none">• Editing• Coding• Data file	Every stage is examined to detect any mistakes that happened.
<ul style="list-style-type: none">• Descriptive analysis• Univariate analysis• Bivariate analysis• Multivariate analysis	This stage requires a selection of proper analyses to adopt in the study

Source: Hair *et al.*, (2019:653)

The data collected was arranged into categories, and was further examined to determine a mutual relationship and connection across the unit of analysis. Furthermore, the unit of analysis was a co-operative way to test, understand and interpret the seven QMPs (factors) in public schools when the researcher engaged with school leadership, SGB members and educators. The researcher obtained the capacity to gain an accurate and deeper understanding of the research problem, for the study to achieve its primary and secondary research objectives.

The following section discusses the population and sampling of the study.

3.3 Population and Sampling

This section discusses the population and sample of this study. The population of this study is comprised of potential respondents to the online questionnaires. Moreover, the sampling in this section identified different sampling strategies that are probability sampling strategies and non-probability sampling strategies, and identified the sampling strategy adopted in this study and why it was adopted.

3.3.1. Target population

According to Salkind (2014:185), a target population is a group of potential participants to whom the researcher wants to generalise the results of a study. The target population for this study included all two hundred and forty-one (241) public schools (both primary and secondary schools) in the Tshwane West District region (Gauteng Education Department Districts, 2020). Secondly, it was decided to narrow down the population to focus on fifty-five

(55) secondary public schools in the region, as primary schools had not been considered to participate in this study. Lastly, the target population to select was further narrowed down to ten (10) public secondary schools that the study intended to employ, which participated in this study, due to the population size and the sample size of the study. Furthermore, the target population was comprised of ten (10) school principals that were regarded as school leadership; one hundred and ten (110) SGB members that were regarded as school governance; and one hundred and eighty (180) school educators that were regarded as implementers of school activities. Therefore, the population size of this study was 300 and the sample size was 169 respondents. How the study arrived at 169 sample size is discussed in section 3.3.2.1 (sample size) below. This is outlined in Table 3.3.

Table 3.3 Population size of the study

Respondents	School 1	School 2	School 3	School 4	School 5	School 6	School 7	School 8	School 9	School 10	Total
Principal	1	1	1	1	1	1	1	1	1	1	10
SGBs	11	12	9	13	12	11	10	10	12	10	110
School educators	17	18	15	20	21	20	17	18	16	18	180
Total population size:											300
Sample size:											169

Source: Guided by Krejcie and Morgan (1970:608)

On the one hand, the population is in line with the research problem of this study that states, *The significance of quality management principles (factors) to improve school performance in the Tshwane District are unknown*. On the other hand, access to the target population to form part of this study was granted to the researcher, as the study was approved by the GDBE.

3.3.2 Sampling

According to Van Zyl (2014:95), a sample is a subset of a population, and there are two types of sampling, namely probability sampling and non-probability sampling.

3.3.2.1 Probability sampling

According to Etikan and Bala (2017:2), probability sampling refers to the selection of a sample from a population based on the principle of random selection.

3.3.2.2 Non-probability sampling

Non-probability sampling refers to the sampling procedure of selecting a sample from a population using a subjective non-random method, (Etikan & Bala, 2017:2).

The study adopted a stratified random probability sampling technique because a stratified random sampling divides the members of the population into several groups of population that are individually more homogeneous than the total population before sampling (Etikan & Bala, 2017:2). As a result, in this study the members of the population are grouped under the following groups.

- School principals' group category
- SGBs' group category
- Educators' group category.

The choice of using a stratified random sampling technique is because it is used to obtain a representative of a good sample, and to minimise sampling errors (Etikan & Bala, 2017:2). Consequently, the need to ensure that all categories of the population are proportionally represented offers motivation for the stratified random sampling technique.

3.3.2.1 Sample size

A sample size of respondents was used for this study based on the estimated population, and the sample size determined the number of respondents in the study at the school per category to sample. The candidates selected were contacted to explain the purpose of the study, as well as to determine their willingness to participate. Since the exercise was voluntary in nature, selected candidates were given the opportunity of opting not to participate, if they weren't interested. The sample size was stratified by a sample size of respondents at a confidence level of 95% and an error margin of 5% (Research Advisors, 2006:1). Due to response errors, the sample size for this study was increased. This is scientifically demonstrated as follows.

Table 3.4. Required sample size

Population Size	Confidence level = 95%				Confidence level = 99%			
	Error Margin				Error Margin			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
300	169	217	251	291	207	246	270	295

Source: Research advisors (2006:1)

To obtain an adequate sample size, the researcher utilised the Raosoft sample size calculator. The sample size is calculated according to the Raosoft® calculator (Raosoft® Inc. USA) with a 5% margin of error and 95% confidence interval ($p \geq 0.5$). As a result, questionnaires stopped at the point of saturation. According to Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs and Jinks, (2018:1894), saturation is a criterion where no new data is collected from the respondents. The Raosoft sample size calculation of this study is demonstrated as follows.

Parameter	Value
What margin of error can you accept? <small>5% is a common choice</small>	5 %
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	95 %
What is the population size? <small>If you don't know, use 20000</small>	300
What is the response distribution? <small>Leave this as 50%</small>	50 %
Your recommended sample size is	169

Figure 3.4: Sample size calculator

Source: Raosoft (2020)

According to Research Advisors (2006:1) in Table 3.4, and Raosoft (2020) in Figure 3.4, the sample size of the study was obtained through a population size of 300 who advocated for a sample size of 169 at a margin error of 5%, and a confidence level of 95%, where the response distribution remained at 50%. The next section discusses the validity and reliability of the study.

3.4 Validity and Reliability

According to Cooper and Schindler (2014:52) a construct is defined as a theory within an area of research, with a view to creating the reason for that research. In this study, the constructs are defined from the topic of the study. Moreover, to ensure that this study was valid and reliable, measurements were used by experts to test the research instrument adopted. Therefore, the topic of this study is, *Evaluating quality management principles in public schools in the Tshwane District towards improving performance*. The constructs that are defined from the topic are:

- Construct 1: Quality management
- Construct 2: Seven quality management principles (factors)
- Construct 3: School performance.

3.4.1 Validity

Beins (2013:131) defined validity as a property of data, concepts or research findings whereby they are useful in varying degrees for measuring or understanding phenomena. The synonyms for 'validity' include 'accuracy', 'authenticity' and 'genuineness' (Salkind, 2014:173). The different types of validity are construct validity measurement, face validity, predictive validity and concurrent validity.

3.4.1.1 Construct validity measurement

According to Cooper and Schindler (2014:257), construct validity measurement identifies the necessary constructs that are assessed to set up the accuracy of the constructs measured.

3.4.1.2 Face validity

According to Bryman (2012), face validity refers to the measure that is deeply thoughtful on the content of the concept in question.

3.4.1.3 Predictive validity

According to Surucu and Maslakci (2020:2697), predictive validity is obtained by calculating the correlation between the estimated score obtained from a scale and the criterion known to measure the properties desired to be measured.

3.4.1.4 Concurrent validity

Surucu and Maslakci (2020:2697) defined concurrent validity as a form of validity used as a measure of the convergence of the results of an alternative instrument used to measure the same structure.

The study adopted the construct validity measurement and the face validity to prevent research instrument errors. Additionally, the researcher ensured that the research instrument used is accurate with the constructs of the study and ensured that a pilot study is conducted with experts, and the research instrument is addressed to experts to ensure that the research instrument is measuring what it is planning to measure, hence, construct validity is adopted in the study.

Moreover, the researcher engaged with school principals, SGB members and educators, and frequently consulted with supervisors of the study to ensure that the study achieved its research aim, hence, face validity is adopted in the study. Face validity enabled the

researcher to assess the research instrument with the intention of instituting changes to the instrument.

3.4.2 Reliability

According to Beins (2013:130), reliability is defined as a measure of the consistency or reproducibility of data collected using the same methodology on more than one occasion, across different, but related test items, or by different individuals. The synonyms for reliability are consistency, stability and predictability (Salkind, 2014:165). Additionally, the reliability of a study can be influenced by errors and mistakes, namely of the random fluctuation error and systematic error.

According to Burns and Burns (2008:411-412), random fluctuation error is the level at which a score is affected on potential components, and systematic error is the influence of an unpleasant variable that is biased on values using a single method. Therefore, the researcher made certain that the constructs measured (quality management, seven QMPs (factors) and school performance) were errorless. Consequently, the researcher ensured that there was consistency, stability and predictability in the reliability of the study, as well as results of the study.

This study employed the Cronbach's Alpha coefficient to measure the reliability scale. According to Hair *et al.*, (2019:800), Cronbach's Alpha coefficient is the greatest scale to measure reliability and it represent the average correlation between all items that comprise the scale. In this study, reliability was measured by linking the values and Cronbach's Alpha coefficient to determine whether the scale was reliable for measuring the variables of the constructs that were tested.

3.4.3 Correlation analysis

The study conducted a correlation coefficient analysis using SPSS version 26 software to measure and determine the correlation between constructs which include quality management, seven QMPs (factors) and school performance. According to Cooper and Schindler (2014:469), a correlation analysis shows the level at which variables develop alongside each other, for instance, when a single variable rises, the other variables will also rise.

By using a correlation coefficient analysis, the researcher measured the mutual relationship or connection between constructs to determine the degree or level that one construct affects or depends on another construct. As a result, the measurement of constructs assisted the researcher in explaining the values of constructs in this study.

3.5 Limitations and Delimitations

The following sections discuss the limitations, delimitations and assumptions of this study.

3.5.1 Limitations

According to Creswell and Creswell (2018:273), limitations are what the researcher wants to achieve in the area of study, but the researcher's participation is limited in that particular area of the study. Limitations of any study concern potential weaknesses that are usually out of the researcher's control, and are closely associated with the chosen research design, statistical model constraints, funding constraints or other factors. In this respect, a limitation is an imposed restriction which is, therefore, essentially out of the researcher's control. It may affect the study design, results and conclusions. For example, when exploring respondents' responses to an online questionnaire, the researcher may be limited to accessing only a small geographical area which would not provide an overall scope of responses.

Therefore, in quantitative studies, that sample would not have been representative and when doing qualitative research, data saturation would not have been achieved. With regard to measurement and testing, the research tool itself may be a limiting factor by providing narrow results. For example, a set of good, reliable scales would be perfect for weight measurements, but would provide only one of two essential parameters for estimating body mass index. Time is another factor that may limit a study by distorting results. For example, a study on dietary habits may limit the extent of the conclusions drawn, depending on the year data was gathered. In addition, greater societal circumstances and financial trends that may coincide with the study period should be acknowledged as such. One of the limitations in this study was the non-response rate challenge by respondents. The study discusses the limitations encountered in the study more broadly in Chapter 4, section 5.5.

3.5.2 Delimitations

According to Theofanidis and Fountouki (2019: 157), delimitations are, in essence, the limitations consciously set by the researcher, and they are concerned with the definitions that researchers decide to set as the limits of their work, so that the study's aims and objectives do not become impossible to achieve. Therefore, the delimitation of the non-response rate mentioned in section 3.5.1 (limitations) is that the researcher ensured that the online questionnaire instructions are clear and understandable. Additionally, the other delimitation of the non-response rate is that the researcher mentioned the potential benefits of the study to all respondents.

3.5.3 Assumptions

According to Leedy and Ormrod (2015:23), assumptions are unexpected and unexamined conditions that are taken for granted, and without them being considered, the study would not achieve its objectives. The assumption in this study is that the researcher encounters difficulties in the administration of the research instrument, due to some of respondents having no access to an electronic mail (email) account. Accordingly, due to the scope of the study, the researcher overcame this challenge by overseeing the printing of questionnaires that were delivered to respondents in this regard.

3.6 Elimination of Bias

According to Simundic (2013:12), bias in research is a deviation from the truth in data collection, data analysis, interpretation and publication, which can cause false conclusions of the research. For the researcher to ensure that there was no prejudice that was considered to be incorrect against the respondents of this study, the researcher ensured that the structure of the questions asked were understandable and respondents were able to give opinions. Additionally, the researcher ensured that the questions were not emotional, regrettable to answer, or biased, and that they were all answerable without doubts. Furthermore, the study was pilot tested.

3.7 Ethical Considerations

According to Saunders *et al.*, (2016) research ethics is defined as the suitability of the researcher's conduct, in relation to the rights of those who become the subject of the research project, or who are affected by it. Leedy and Ormrod (2015) stated that most ethical issues in research can be categorised into four categories, namely protection from harm, informed consent, right to privacy, and honesty. The next sections discuss permission granted to engage with the selected population of the study, privacy and confidentiality of respondents, and informed consent that is a voluntary agreement by respondents to respond to the online questionnaire.

3.7.1 Permission

Communication for permission between the researcher and the GDBE was through electronic mail (email). Additionally, all documents required by the GDBE to be submitted, for the researcher to be granted the permission letter, were submitted by email. Therefore, the email communication between the researcher and the GDBE is depicted in Annexure G.

Accordingly, a letter requesting permission from GDBE to conduct the study was submitted to the Acting Chief Executive (in the Office of the Director: Education Research & Knowledge

Management). Moreover, the submitted letter as a gatekeeper letter proposed all details pertaining to the study and the letter considered the ethical moral principles of the University of South Africa (UNISA). The letter that was submitted to request permission is illustrated in Annexure A.

Consequently, a signed permission letter by the GDBE Acting Chief Executive in the Office of the Director: Education Research & Knowledge Management was granted through communication by an electronic mail (email) between the GDBE and the researcher. Accordingly, the provincial district conducting this study is mentioned in the permission letter, as well as the maximum number of schools to participate in the study. A signed permission letter by the Tshwane West Acting District Director in the Office of the Director was granted. The signed permission letter is illustrated in Annexure B.

3.7.2 Privacy and confidentiality

To ensure privacy and confidentiality, no names were written on the questionnaire that was issued, and respondents were advised not to indicate their names or anything that could identify them. To further ensure ethical consideration, the researcher guaranteed that no harm, either physical or emotional, came to the respondents because of the study. Moreover, all documents used in the study were stored in a locked environment, and soft copies were password protected. The statistician signed a confidentiality agreement letter that is depicted in Annexure F.

3.7.3 Informed consent

A participant information sheet was submitted to the GDBE for consideration and motivation, for the researcher to be permitted to engage in public schools in the Tshwane District. The submitted participant information sheet discussed the purpose of the study, the reason why the GDBE was invited to participate in the study, and the nature of participation in this study. Furthermore, the participant information sheet outlined withdrawal from participation in the study after agreement; confidentiality of respondents; security; protection of data by the researcher; and how respondents would be informed about the findings and results of the study. The submitted participant information sheet is illustrated in Annexure C.

Additionally, a participant consent form was generated and given to school principals, SGB members, and educators to go through and sign. Signing of the participant consent form by respondents ensured that respondents understood the purpose of the study. Furthermore, the participant consent form mentioned that participation was voluntary and that respondents could choose not to participate. The participant consent form and the questionnaire are illustrated in Annexure D.

Ethical clearance was obtained from UNISA to acknowledge that the study was accepted by UNISA, and the ethical clearance certificate is illustrated in Annexure E. Turnitin (2022), which is an online originality checking of similarities, plagiarism and citation prevention service that checks the writing of a particular study for mistakes or inappropriate copying, was used in the study to check any similarities, plagiarism and in-text citation. Additionally, Turnitin is also used to follow the ethical practices required by UNISA. The Turnitin originality report is illustrated in Annexure H.

3.8 Chapter Review

Accordingly, this chapter broadly presents the systematic and theoretical analysis of the research methodology adopted in this study, which was applied to identify and evaluate the most significant factors of the seven QMPs, as well as the factors that support the seven QMPs (factors) to improve school performance in the Tshwane District.

Furthermore, for the researcher to gain a deeper insight into the research problem, namely *The significance of quality management principles (factors) to improve school performance in the Tshwane District are unknown*, this chapter identifies the research design in section 3.2. Section 3.3 describes the population and sampling of the study. Subsequently, the chapter discusses validity and reliability for quality results, in section 3.4. Thereafter, the chapter discusses the limitations and delimitations of the study in section 3.5. In section 3.6, elimination of bias is deliberated. Finally, the chapter explains the ethical consideration to be complied with, in section 3.7.

Additionally, this chapter demonstrates the research philosophy approach of this study as represented in the research onion in Figure 3.2, namely the positivism philosophy, deduction approach to theory, mono-method quantitative research method, survey strategy, cross-sectional time horizon, and questionnaire research instrument and technique, which was developed from the literature review of this study. In Chapter 4, the results, findings and data analysis regarding the seven significant QMPs factors, and the factors that support the seven QMPs to improve school performance in the Tshwane District are discussed.

CHAPTER 4: DATA ANALYSIS, INTERPRETATION OF RESULTS AND FINDINGS

4.1 Introduction

Chapter 3 discussed the research methodology that was used to collect, interpret and analyse the data. In this chapter, the data collected is analysed and discussed based on the statistical analysis completed. The chapter presents the results that were obtained from the online questionnaire.

The aim of this study was to identify and evaluate the most significant QMPs factors, and the factors that support the QMPs factors, and, subsequently, to make recommendations on factors that improve school performance in the Tshwane District. Hence, the problem investigated is that 'the significance of QMPs (factors) to improve school performance in the Tshwane District are unknown'.

It should be noted that the primary research objective of this study was:

- To identify and then evaluate the most significant factors of QMPs that improves school performance in the Tshwane District.

Subsequently, the secondary research objective was:

- To identify the factors that support QMPs in the Tshwane District.

Similarly, the main research question was:

- What are the most significant factors of QMPs to improve school performance in the Tshwane District?

Hence, the sub-research question was:

- What factors support QMPs in the Tshwane District?

It should be noted that the research question, research objectives and research problem are aligned with the seven QMPs (factors) that comprise the following, as discussed in Chapter 2, section 2.3, and presented in this chapter:

- Principle (Factor) 1: School leadership
- Principle (Factor) 2: Engagement of school leadership

- Principle (Factor) 3: Evidence-based decision-making in schools
- Principle (Factor) 4: School relationship management
- Principle (Factor) 5: Process approach in schools
- Principle (Factor) 6: Improvement of operational school activities
- Principle (Factor) 7: Customer focus in schools.

Accordingly, the study pursued a positivistic philosophy and quantitative approach to theory to evaluate the unknown significance of factors affecting the practice of QMPs to improve school performance in the Tshwane District. Furthermore, a mono-method, quantitative survey strategy; cross-sectional time horizon; and self-administered questionnaire technique and procedures distributed to respondents were followed to identify and evaluate the significant factors, and identify the factors that support QMPs in the Tshwane District. Moreover, the data analysis, findings and interpretation of the results are addressed and presented according to the flow diagram in Figure 4.1.

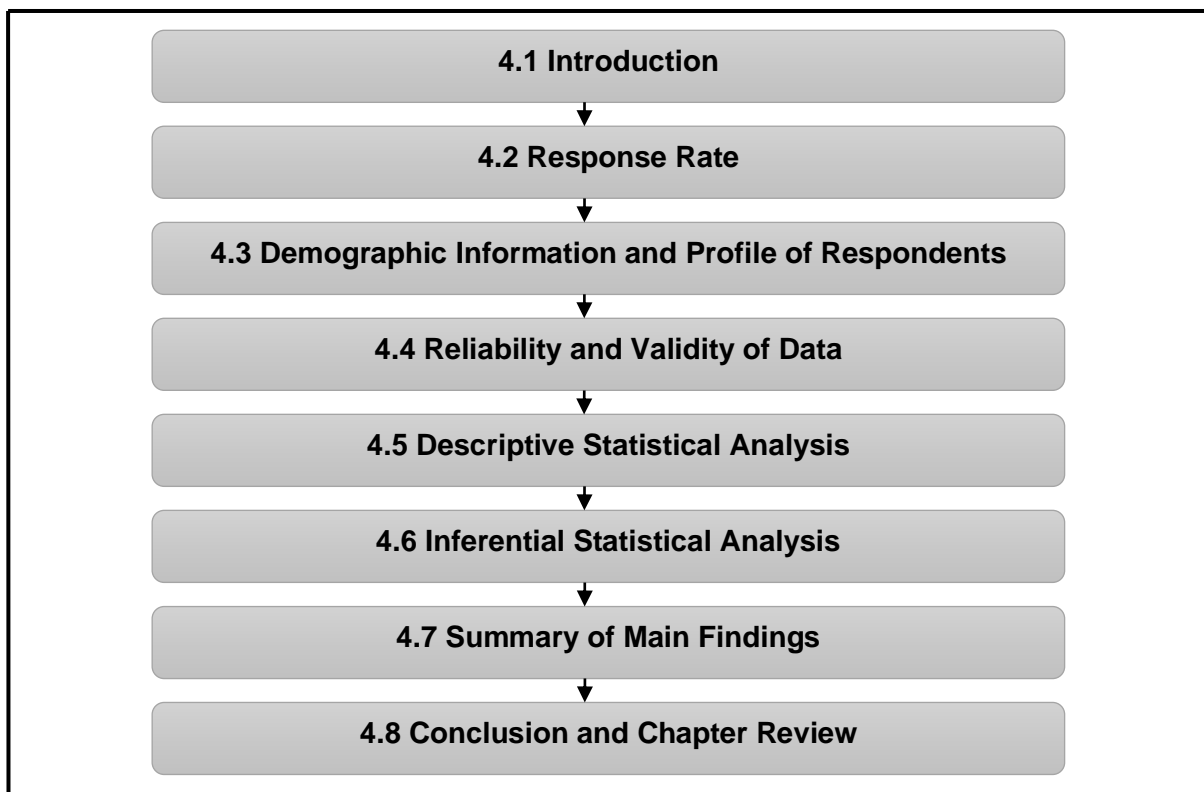


Figure 4.1: Flow diagram of Chapter 4

Source: Own compilation (2022)

The next section discusses the response rate from the survey questionnaire depicted in Annexure D.

4.2 Response Rate

The population size of this study was 300, which advocated for a stratified sample size of 169 responses (Research advisors, 2006:1), at an error margin of 5% and a confidence level of 95% (Raosoft, 2020). As a result, the study received its recommended sample size of 169 responses from school principals, SGB members and educators. Therefore, this sample size calculation was deemed acceptable for the study.

Furthermore, the data was collected over a period of five months (from 01 July 2021 to 30 November 2021). The reason why the data was collected over a period of five months was the low response rate of the online questionnaire, as only a small number of respondents were responding to the survey on a weekly basis. The received data from respondents was analysed to produce descriptive findings related to demographic information and the profile of respondents, and evaluated the seven QMPs in public schools. All necessary measures, including follow-up emails sent to schools and telephone calls made to engage with schools and respondents, were applied by the researcher to ensure that the public schools selected participated in the study. These telephone calls were made after hours to ensure that the researcher refrained from disturbing respondents while they were on duty. Furthermore, the researcher provided all respondents with an equal opportunity for participation.

The researcher used a bar graph using percentages to track the weekly progress of data collection. Moreover, the bar graph tracked the data received and the outstanding data to determine if the study was on track. Additionally, the statistical data analysis commenced when the researcher received 100% of responses, which accounts for a total of 169 responses received.

The following section depicts and discusses the demographic information and profile of respondents, and how the section contributes towards the study.

4.3 Demographic Information and Profile of Respondents

The demographic information of respondents is analysed and interpreted in this section, since all respondents (school principals, SGB members, and school educators) contributed to the study by responding and rating the statements in Section A of the online questionnaire, in accordance with the level of experience acquired in the implementation of the seven QMPs in public schools. The ratings of questions by respondents on the statements in the online questionnaire assisted the researcher with achieving the primary

and secondary research objectives to identify, and then evaluate the most significant factors of QMPs that improve school performance in the Tshwane District, and identify the factors that support QMPs in the Tshwane District. Additionally, the ratings of questions by respondents on the statements in the online questionnaire were analysed, which assisted the researcher with answering the main research question and the sub-research questions of the study.

The next section discusses the gender analysis of the respondents.

4.3.1 Gender analysis of respondents

This section sought the gender of the respondents. The aim of this section is to determine the ratio of male to female respondents. As a result, Table 4.1 and Figure 4.2 show the frequency distribution of the respondents, according to a gender analysis of respondents in percentage values, as n = 169.

Table 4.1: Gender analysis

Gender	Frequency	Percentage
Male	79	46.70%
Female	90	53.30%
Total	169	100%

Figure 4.2 illustrates this analysis in chart form.

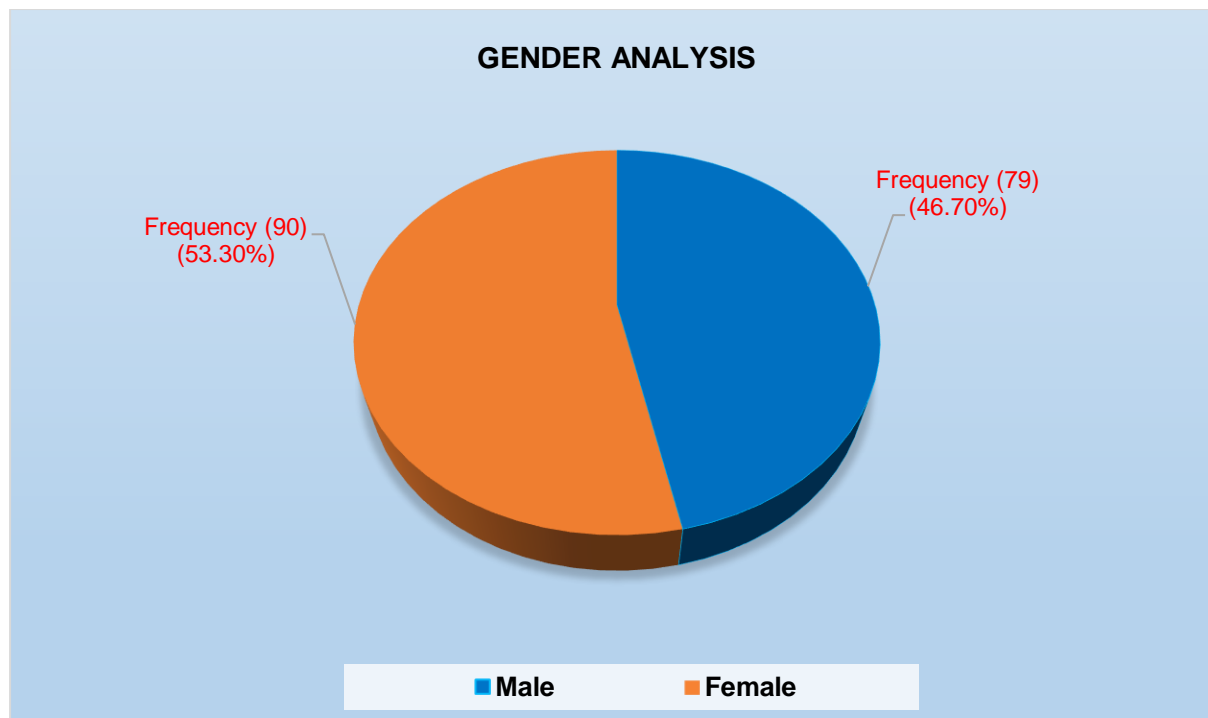


Figure 4.2: Gender analysis

According to Table 4.1 and Figure 4.2, the gender analysis indicates that the majority of respondents were females, and the ratio of females to males was approximately 1:1 (53.30%:46.70%). As a result, the gender analysis contributes to the study by indicating that the female gender was represented by a greater number of respondents, which contributed to the achievement of the primary and secondary research objectives.

The next section discusses the age group analysis of the respondents.

4.3.2 Age group analysis of respondents

This section sought to determine the different age groups of the respondents. Therefore, Table 4.2 and Figure 4.3 show the age group frequency distribution of respondents, as reflected in the different age brackets in percentage values, as n = 169.

Table 4.2: Age group analysis

Age group	Frequency	Percentage	Cumulative Frequency
18-29	39	23.07%	23.1
30-39	19	11.24%	34.3
40-49	31	18.34%	52.7
50-59	72	42.60%	95.3
60-65	8	4.73%	100.0
Total	169	100	

These results are graphically presented and synthesised in Figure 4.3 for a better illustration.

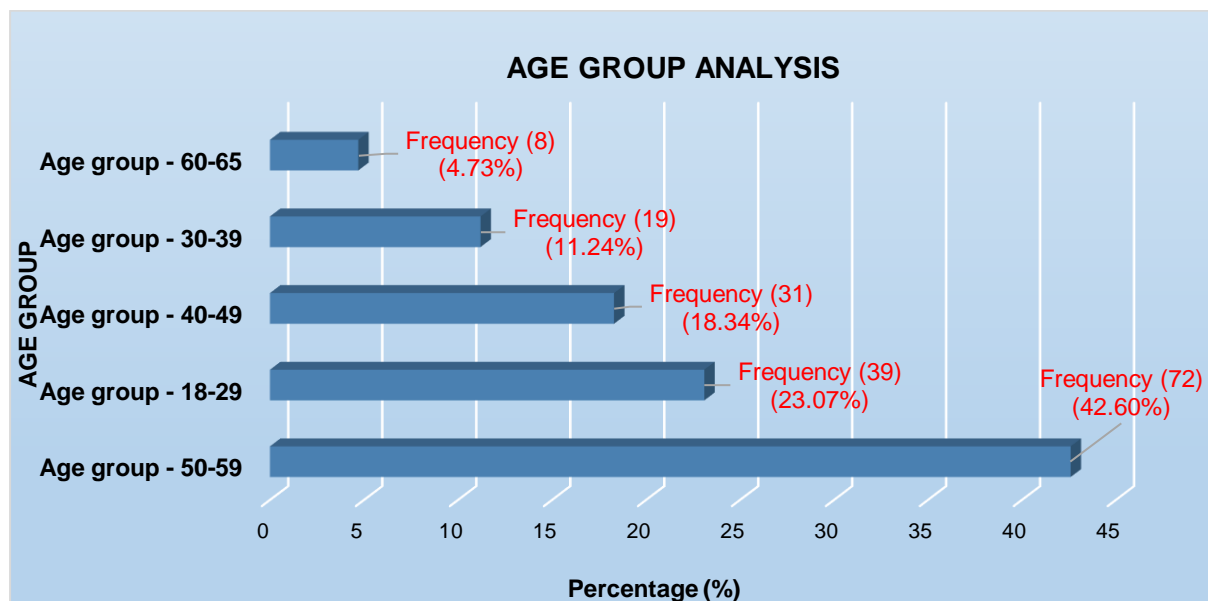


Figure 4.3: Age group analysis

Table 4.2 and Figure 4.3 indicate that the majority of respondents (42.60%) were between 50 and 59 years of age, and only 4.73% of respondents were in the age group 60 to 65 years. As a result, this age group analysis contributes to the study by demonstrating the likelihood that respondents between the age of 50 and 59 would mostly contribute constructively to the achievement of the study's primary and secondary research objectives. This is due to the fact that this age category (between the age of 50 and 59) is significant, and it indicates that this category responded to the online questionnaire using their experience acquired throughout their years of employment in secondary public schools. The results further indicate that respondents between the ages of 60 and 65 only constitute a small percentage that insignificantly impacts the achievement of the study's primary and secondary research objectives.

The next section discusses the highest academic qualification analysis of the respondents.

4.3.3 Highest academic qualification analysis of respondents

This section sought to determine the highest academic qualifications of the respondents. The aim of this section is to analyse the data from respondents, in accordance with the level of academic qualifications acquired. Therefore, Table 4.3 and Figure 4.4 indicate the frequency distribution of the highest academic qualification acquired by respondents ranging from Matric (Grade 12) to Doctoral degree/D-Tech degree, as shown in percentage values, as n = 169.

Table 4.3: Highest academic qualification

Qualification	Frequency	Percentage	Cumulative Frequency
Matric or less (Grade 12)	31	18.34%	18.3
Certificate (1-year or below)	27	16.00%	34.3
Diploma (3-year diploma/N6)	13	7.69%	42.0
Bachelor's degree/B-Tech	68	40.23%	82.2
Honours degree/Postgraduate diploma	26	15.38%	97.6
Master's degree/M-Tech	4	2.36%	100.0
Doctoral degree/D-Tech	0	0.00%	100.0
Total	169	100.0	

These results are demonstrated and presented in Figure 4.4 for a better illustration.

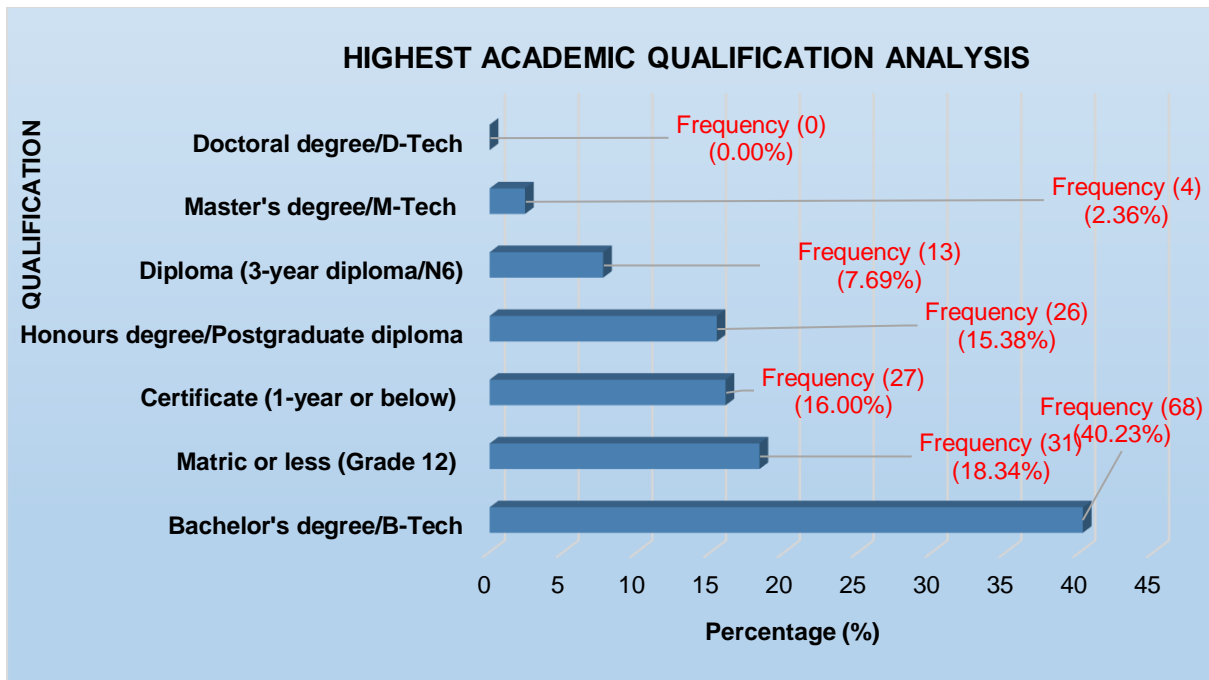


Figure 4.4: Highest academic qualification analysis

Table 4.3 and Figure 4.4 indicate that the majority of respondents (40.23%) hold a bachelor's degree/B-Tech degree, followed by 18.34% respondents with a Matric (grade 12) or lower. Thereafter, 16.00% respondents with a certificate (1-year or below) and, subsequently, 15.38% respondents with an honours degree/postgraduate diploma. However, the results indicate that 7.69% respondents with a diploma (3-year diploma/N6) and 2.36% respondents with a master's degree/M-Tech degree were associated with the smallest number as a percentage. In contrast, the results show that there were 0.00% respondents holding a doctorate degree/D-Tech degree.

These results contribute to the study by indicating that respondents with a bachelor's degree/B-Tech degree (40.23%) contribute constructively to the achievement of the study's primary and secondary research objectives. These respondents acquired skills from different higher learning institutions, which ensured that they acquired a certain level of knowledge of the seven QMPs (factors), so that they could respond to the online questionnaire. Moreover, these results indicate that respondents with a diploma (7.69%) and respondents with a master's degree/M-Tech degree (2.36%) constitute a minimal percentage, which insignificantly impacts the achievement of the study's primary and secondary research objective.

The following section gives an analysis of the number of years respondents were employed in public schools.

4.3.4 Number of years employed in public schools

Respondents were required to provide the number of years that they were employed in public schools. The aim of this section is to analyse the data received from respondents, in relation to their working experience. Table 4.4 and Figure 4.5 provide the frequency distribution of working experience that respondents acquired during the time of their employment in public schools, as indicated in percentage values, as n = 169.

Table 4.4: Number of years employed in public schools

Operational Years	Frequency	Percentage	Valid Percentage	Cumulative Frequency
5-10 years	61	36.10%	53.00%	53.0
11-15 years	9	5.32%	7.80%	60.8
16-20 years	7	4.14%	6.10%	66.9
21-25 years	11	6.50%	9.60%	76.5
>25 years	27	16.00%	23.50%	100.0
Total	115	68.00%	100.00%	
Missing	54	32.00%		
Grand Total	169	100.0		

These results are presented in Figure 4.5 and further explained narratively to provide a greater insight into the analysis.

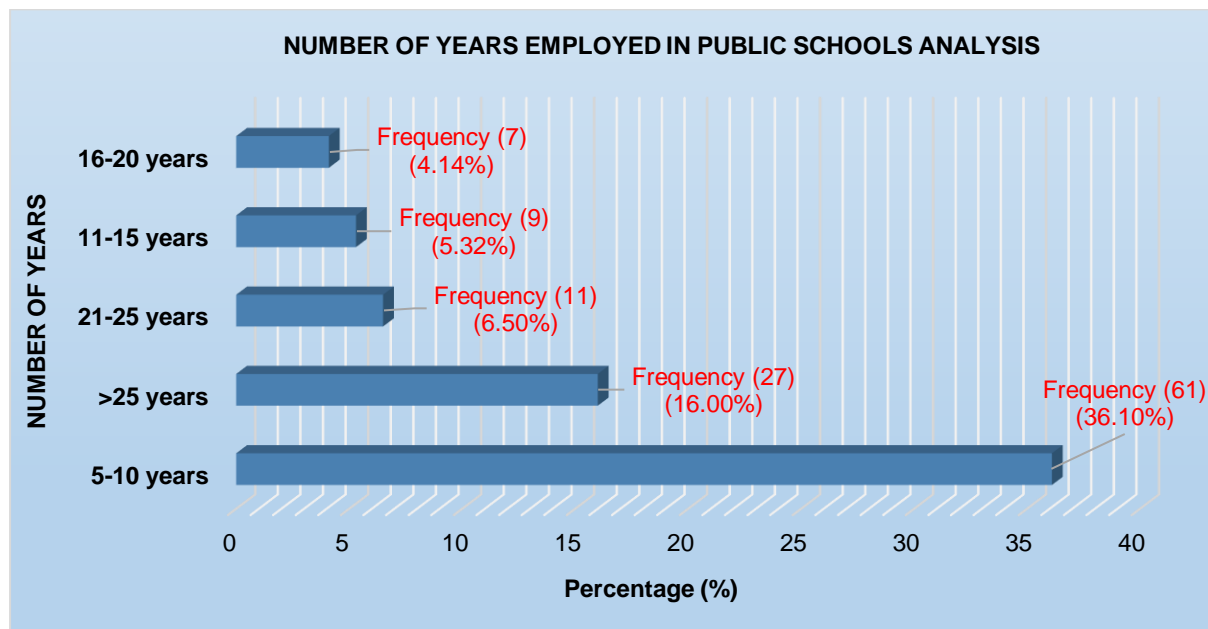


Figure 4.5: Number of years employed in public schools analysis

Table 4.4 show that the majority of respondents (53.00%) had between 5 to 10 years' working experience in public schools. This was followed by 23.50% of respondents with

more than 25 years' working experience. Thereafter, 9.60% of respondents had between 21 to 25 years' working experience, while there were 7.80% of respondents that had 11 to 15 years' working experience in public schools. The results also indicate that there were 6.10% of respondents that had 16 to 20 years' working experience.

The results contribute to the study by indicating that respondents with 5 to 10 years' working experience, and respondents with more than 25 years' working experience in public schools contributed significantly to the achievement of the study's primary and secondary research objectives because these respondents were senior employees in public schools that participated in the study, and they easily aligned their acquired experience with the questions asked in the online questionnaire. Moreover, these results indicate that respondents with 11 to 15 years', 16 to 20 years', and 21 to 25 years' working experience insignificantly impact the achievement of the study's primary and secondary research objectives.

The next section discusses the occupation of respondents.

4.3.5 Occupation of respondents

Respondents were requested to provide their professional occupation, as they were employed in public schools. The aim of this section is to analyse the data received from respondents, in accordance with their profession. Table 4.5 and Figure 4.6 provide the frequency distribution of occupation that respondents occupied during the time of their employment in public schools, as indicated in percentage values, as n = 169.

Table 4.5: Occupation of respondents

Occupation	Frequency	Percentage
Principal	10	5.91%
School Governing Body (SGB)	63	37.27%
Educator (Teacher)	96	56.80%
Total	169	100.0

These results are presented in chart form in Figure 4.6 and discussed to provide greater insight into the analysis.

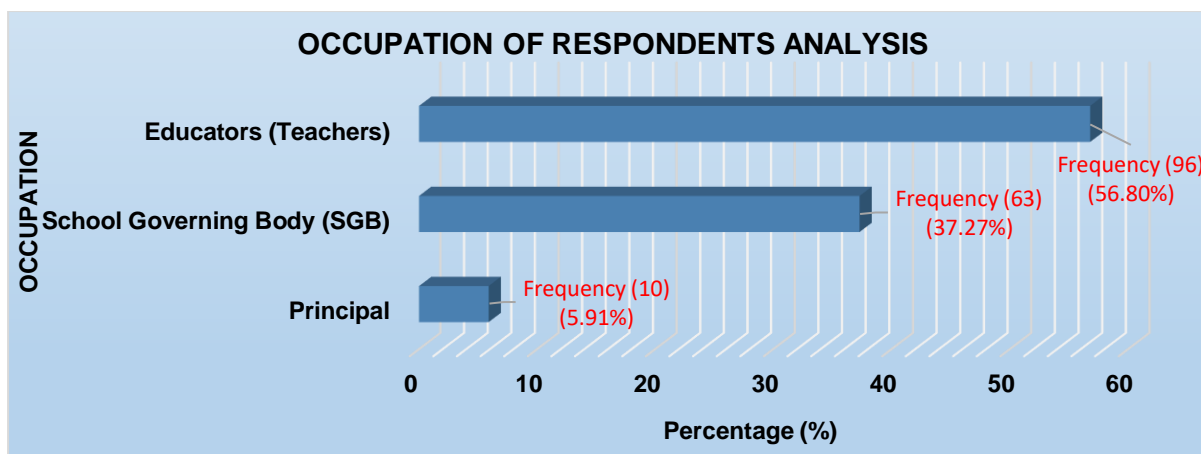


Figure 4.6: Occupation of respondents' analysis

According to Table 4.4 and Figure 4.6, it is evident that the majority of respondents (56.80%) were educators. This was followed by SGB members with a notable 37.27% of responses. The results further show that there were 5.91% school principals that responded to the online questionnaire, in accordance with the sample size of the study. It should be noted that 10 public secondary schools participated in this study; therefore, the whole sample of 10 (5.90%) school principals responded to the online questionnaires.

These results contribute to the study by indicating that educators and SGB members contributed significantly to the achievement of the primary and secondary research objectives because in this study, educators are part of the implementation of the seven QMPs (factors), and SGB members are part of taking responsibility for the oversight of the implementation of the seven QMPs (factors). Furthermore, the results indicate that school principals insignificantly impact the achievement of the study's primary and secondary research objectives.

The following section discusses reliability and validity of data collected to ascertain that the study is valid and reliable.

4.4 Reliability and Validity of Data

This section demonstrates the psychometric properties (the validity and reliability of the measurement tools) of the consistency between one measurement and the next (reliability), and the accuracy of the measurement of the concepts (validity). Moreover, in this study, the Cronbach's Alpha (α) coefficient generated by the SPSS was used to measure the robustness and reliability of the online questionnaire as depicted in Annexure D. Additionally, the Cronbach's Alpha (α) coefficient was used to measure whether there was internal consistency in the research instrument used to collect the data.

According to Hair, Sarstedt and Ringle (2017:16), Cronbach's Alpha (α) coefficient is defined as a measure of the internal consistency of a set of items comprising a scale. Consequently, the normal range of α values is between 0.000 and + 1.000, a situation where higher values closer to +1 reflect higher reliability and a higher degree of internal consistency. Additionally, reliability coefficients which are higher than 0.650 are customarily regarded as acceptable, and values above 0.700 as more than adequate, (Ellis, Han, & Pardo, 2017:163). Therefore, unreliable measures lead to weaker relationships between variables.

It should be noted that in this section, the data analysis emanates from responses to the seven QMPs benefits and challenges by respondents on a five-point Likert scale. As a result, the aim of this section is to analyse the data received from respondents to emphasise the measurement of the seven QMPs constructs, in order to provide the importance of the benefits and challenges of the seven QMPs, as well as to link the primary research objective to the analysis that sought to identify and then evaluate the most significant factors of QMPs that improve school performance in the Tshwane District. Additionally, to link the secondary research objectives to the analysis that sought to identify the factors that support QMPs in the Tshwane District, and to assist the researcher with arriving at the reliable recommendations on the factors that improve school performance in the Tshwane District. Additionally, the aim of this section is to analyse the data received from respondents to assist the researcher with answering the main research question, 'What are the most significant factors of QMPs to improve school performance in the Tshwane District?'

The reliability statistics for the key study variables of the seven QMPs are shown in Table 4.6. Unquestionably, the rule of thumb is that if the Cronbach's Alpha coefficient is below 0.60 and, if an item is deleted and the coefficient goes up, or gets to at least 0.60, then that item should not be included in the measure (Hair, Wolfinger, Money, Samouel, and Page, 2015). Accordingly, the Cronbach's Alpha coefficient measurement is depicted in Table 4.6 that demonstrates the Cronbach's Alpha coefficient range and the strength of association.

Table 4.6: Cronbach's Alpha coefficient measurement rule of thumb

Cronbach's Alpha Coefficient	Strength of Association
<0.6	Poor
0.6 to <0.7	Moderate
0.7 to <0.8	Good
0.8 to <0.9	Very Good
>0.9	Excellent

Source: Hair *et al.*, (2015)

The following section depicts and interprets the reliability statistics measurement of the seven QMPs variables (benefits and challenges of the seven QMPs).

4.4.1 Reliability statistics measurement of the seven QMPs

Respondents were sought to provide their experience in the seven QMPs (benefits and challenges) in public schools, responding to Section B of the online questionnaire. For this reason, the aim of this section is to measure the data received from respondents to assist the researcher with reaching the primary research objective of identifying and then evaluating the most significant factors of QMPs that improve school performance in the Tshwane District. Therefore, Tables 4.7 to 4.21 illustrate the responses of respondents (n = 169) to the benefits and challenges of the seven QMPs.

According to Hair *et al.*, (2017:17), reliability statistics refer to the overall consistency of a measure. Therefore, it should be noted that the scores of all the items that were used to measure a variable were added to obtain or form the variable. Accordingly, the Cronbach's Alpha coefficient measurement scale to the benefits and challenges of the seven QMPs contributes to the study to ensure that there is an average correlation and consistency between the seven QMPs (benefits and challenges). Additionally, to ensure that there is a link to what the study seeks to achieve, namely to identify and then evaluate the most significant factors of QMPs that improve school performance in the Tshwane District. Furthermore, to identify the factors that support QMPs in the Tshwane District, so that the researcher arrives at the reliable recommendations on the factors that improve school performance.

Table 4.7 emphasises the reliability statistics measurement of the seven QMPs constructs to provide the importance of the benefits and challenges of the seven QMPs.

Table 4.7: Reliability statistics measurement of the seven QMPs

Seven Quality Management Principles	Survey Variables	Cronbach's Alpha Coefficient	No. of Items
School leadership	Benefit of school leadership	0.917	4
	Challenges of school leadership	0.932	7
Evidence-based decision-making in schools	Benefits of evidence-based decision-making in schools	0.906	5
	Challenges of evidence-based decision-making in schools	0.934	6
Process approach in schools	Benefits of process approach in schools	0.874	4
	Challenges of process approach in schools	0.929	7

Seven Quality Management Principles	Survey Variables	Cronbach's Alpha Coefficient	No. of Items
Engagement of school staff	Benefits of engagement of school staff	0.953	7
	Challenges of engagement of school staff	0.941	7
School relationship management	Benefits of school relationship management	0.864	3
	Challenges of school relationship management	0.936	5
Customer focus in schools	Benefits of customer focus in schools (communities, learners and parents)	0.939	5
	Challenges of customer focus in schools (communities, learners and parents)	0.935	6
Improvement of operational school activities	Benefits of improvement of operational school activities	0.906	5
	Challenge of improvement of operational school activities	0.931	5

These results are presented in Figure 4.7 and are explained to provide a greater insight into the analysis.

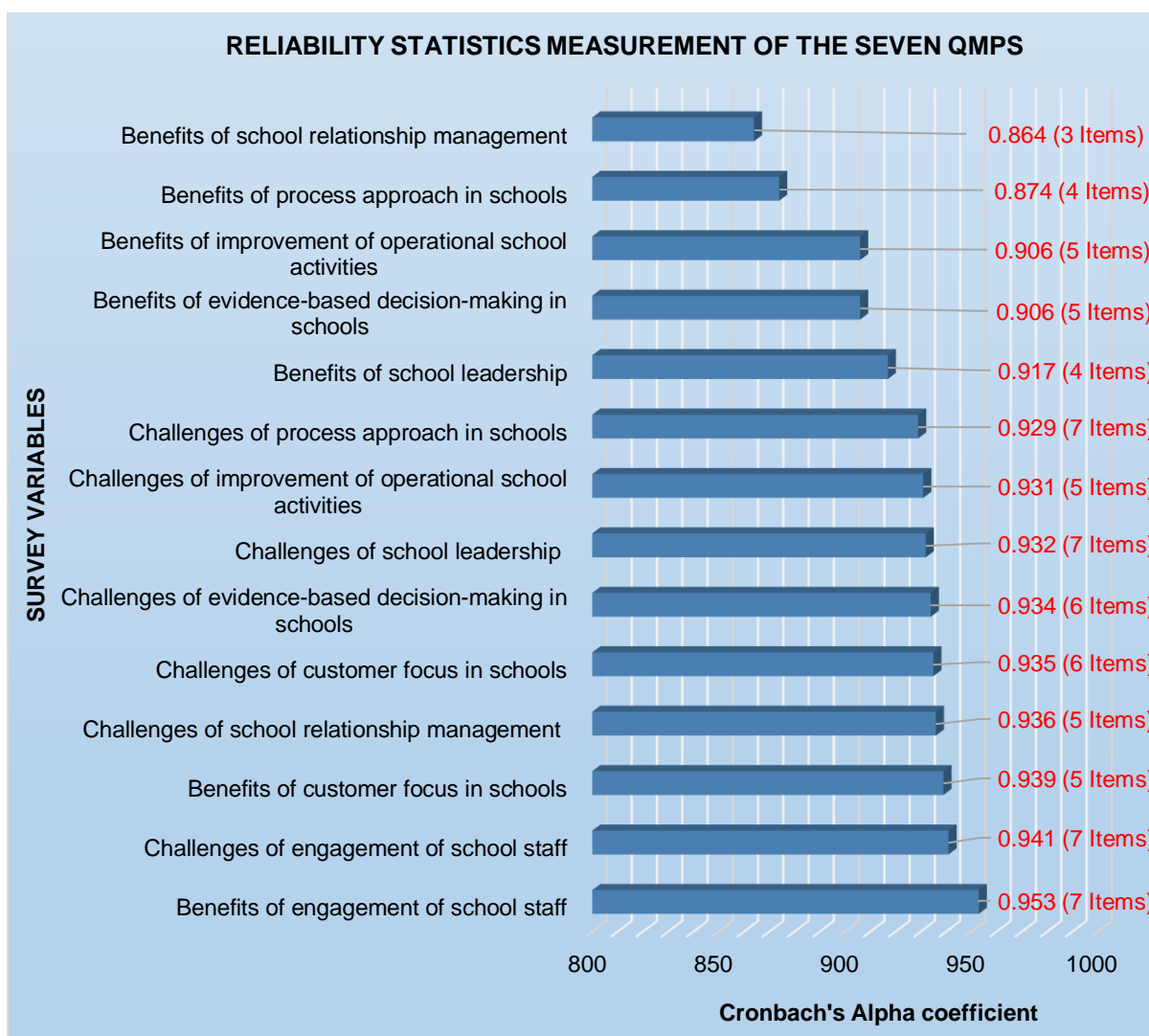


Figure 4.7: Reliability statistics measurement of the seven QMPs

Considering the Cronbach's Alpha coefficient measurement rule of thumb as demonstrated in Table 4.6, and the results displayed in Table 4.7 and Figure 4.7, it is evident that the reliability of all the measured variables for the seven QMPs (benefits and challenges) can be described as varying between very good and excellent. Furthermore, it is also evident that there is no data with a variable that varies from poor and moderate to good. As a result, the overall Cronbach's Alpha coefficient displayed in Table 4.7 and Figure 4.7 confirms the reliability of the online questionnaire as demonstrated in Annexure D, which was used to collect the data. Moreover, these results indicate that the reliability of all the variables is adequate, as it constructively contributes to identifying and evaluating the most significant factors of QMPs to improve school performance in the Tshwane District.

In Tables 4.8 to 4.21, and Figures 4.8 to 4.21, the item-total correlation test resulting from Table 4.7 and Figure 4.7 is performed to check if any item in the set of tests is inconsistent with the averaged behaviour of the others, and can, therefore, be discarded. The item-total correlation is defined as a correlation between the question score and the overall measurement score (Hair *et al.*, 2017:17). Additionally, in Tables 4.8 to 4.21 and Figures 4.8 to 4.21, the Cronbach's Alpha coefficient results measuring the reliability statistics analysis of the seven QMPs (benefits and challenges), in alignment with the research objectives that are linked to each QMP benefit and challenge, are discussed. Furthermore, the alignment between the seven QMPs reliability statistics analysis and the research objectives is in conjunction with the problem statement of the study, which is outlined as an area of concern alluding to the fact that *the significance of factors that are affecting the practice of QMPs to improve school performance are unknown*.

All the measurements of the variables (seven QMPs benefits and challenges) in Tables 4.8 to 4.21 and Figures 4.8 to 4.21 reliability statistics analysis emanating from Table 4.7 and Figure 4.7 are linked to the primary research objective that advocates identifying and then evaluating the most significant factors of QMPs that improve school performance in the Tshwane District.

The following section measures the reliability statistics of the school leadership principle (factor) (benefits and challenges).

4.4.1.1 Factor 1: School leadership (benefits and challenges)

Table 4.8: School leadership (benefits)

Item-Total Statistics					
<i>I believe that the benefits of school leadership as a factor to improve school performance are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
increasing effectiveness and efficiency in meeting quality school objectives	12.82	3.656	0.768	0.603	0.908
providing better school coordination processes	12.71	3.595	0.839	0.721	0.883
improving communication between school levels and functions	12.77	3.480	0.814	0.686	0.892
developing and improving school capabilities and staff to deliver desired school results	12.68	3.752	0.828	0.689	0.888

These results are displayed in Figure 4.8 for better illustration.

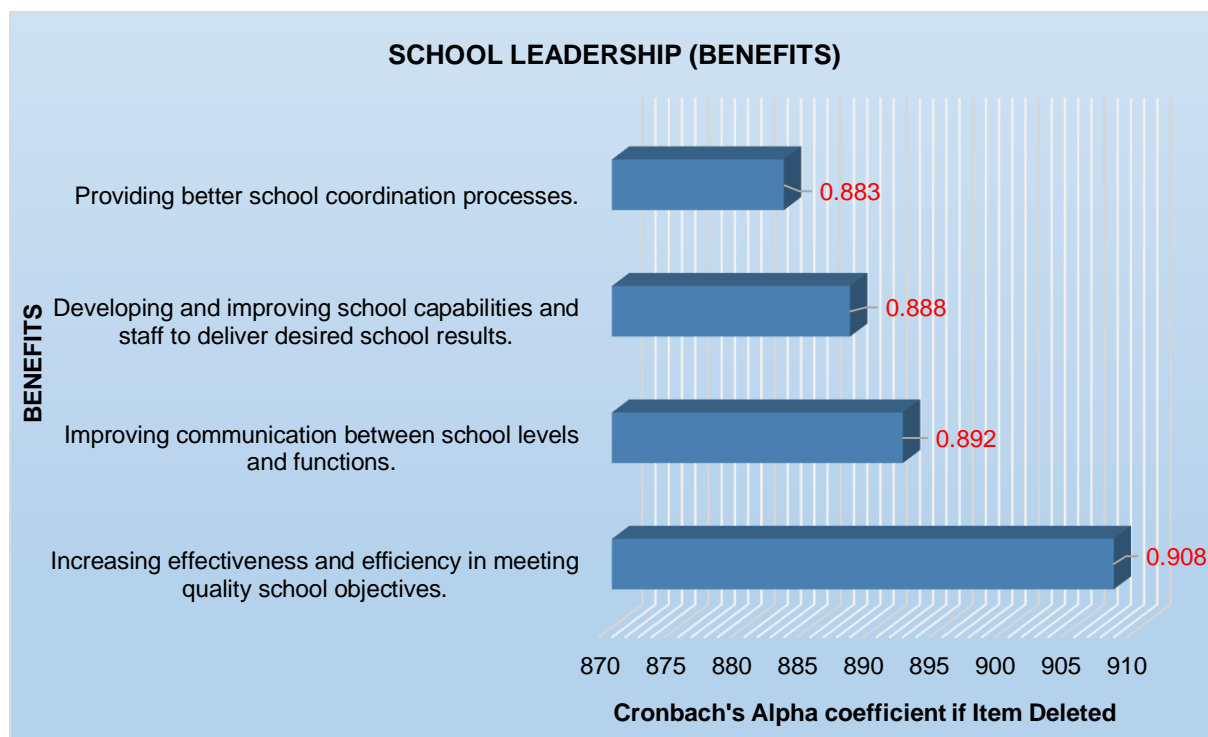


Figure 4.8: School leadership (benefits)

As displayed in Table 4.8 and Figure 4.8 (School leadership: benefits), these results indicate that the benefit of school leadership that alludes to *increasing effectiveness and efficiency in meeting quality school objectives* (Cronbach's Alpha coefficient of 0.908) contributes

constructively to achieving the primary research objective of the study. Apart from the contribution, the benefit that alludes to *improving communication between school levels and functions* (Cronbach's Alpha coefficient of 0.892), followed by the benefit that advocates *developing and improving school capabilities and staff to deliver desired school results* (Cronbach's Alpha coefficient of 0.888), and the benefit that advocates *providing better school coordination processes* (Cronbach's Alpha coefficient of 0.883) contribute significantly to achieving the primary research objective of this study. Further, these results contribute significantly towards answering the main research question of this study.

Table 4.9: School leadership (challenges)

Item-Total Statistics					
<i>I believe that the challenges that hinders school leadership as a factor to improve school performance are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
communicating and acquiring staff buy-in when outlining the mission, vision, strategy, policies and processes	25.12	14.622	0.765	0.703	0.923
creating and sustaining school shared values, fairness and ethical models for behaviour at all levels	25.06	14.441	0.787	0.733	0.921
establishing school culture of trust and integrity	25.06	14.806	0.777	0.761	0.922
encouraging a school-wide commitment to quality	25.04	13.850	0.829	0.704	0.917
ensuring that school leaders at all levels are positive examples to staff	25.02	15.129	0.676	0.561	0.931
providing school staff with the required resources, training and authority to act with accountability	25.02	14.049	0.774	0.705	0.922
inspiring, encouraging and recognising school staff contribution	24.98	14.160	0.866	0.779	0.913

These results are graphically presented in Figure 4.9 for a better illustration.

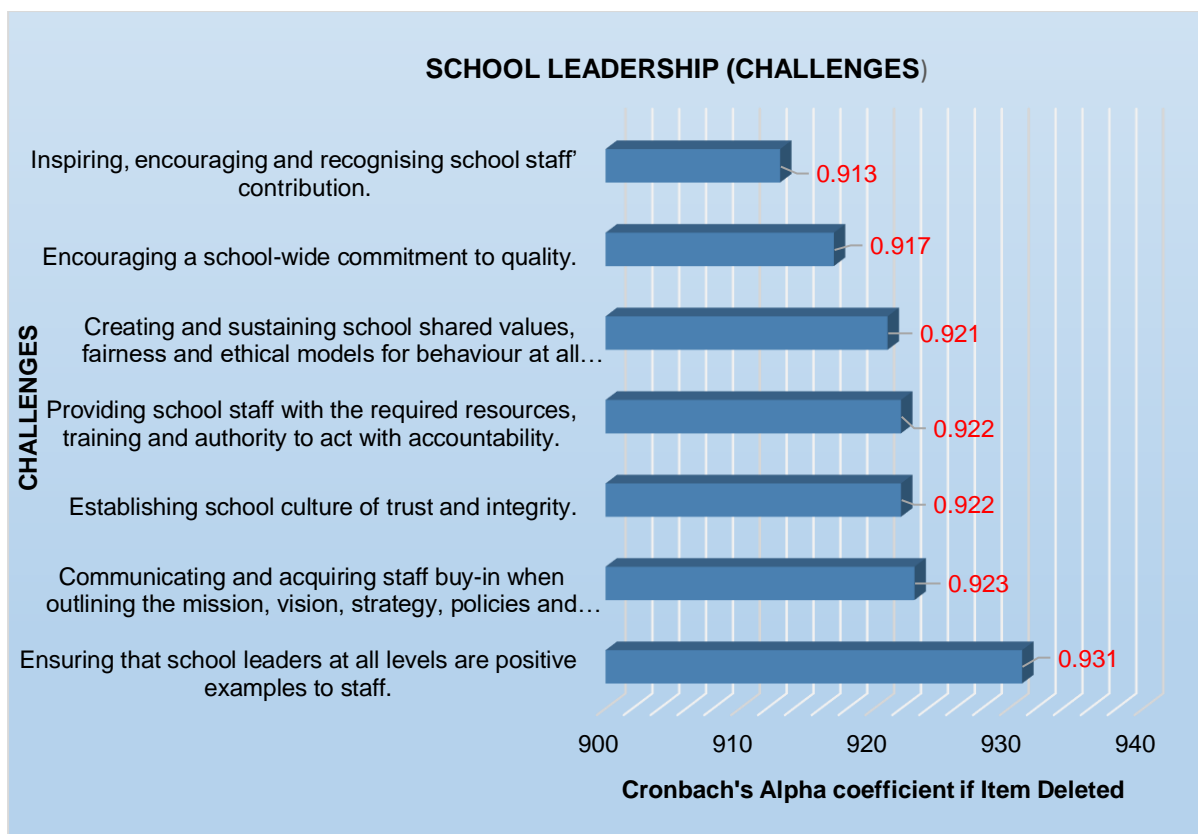


Figure 4.9: School leadership (challenges)

As shown in Table 4.9 and Figure 4.9 (School leadership: challenges), the results show that the school leadership challenge that leads to *ensuring that school leaders at all levels are positive examples to staff* (Cronbach's Alpha coefficient of 0.931), followed by the challenge that leads to *communicating and acquiring staff buy-in when outlining the mission, vision, strategy, policies, and processes* (Cronbach's Alpha coefficient of 0.923), the challenge that leads to *establishing school culture of trust and integrity* (Cronbach's Alpha coefficient of 0.922), the challenge that leads to *providing school staff with the required resources, training and authority to act with accountability* (Cronbach's Alpha coefficient of 0.922), the challenge that leads to *creating and sustaining school shared values, fairness and ethical models for behaviour at all levels* (Cronbach's Alpha coefficient of 0.921), the challenge that leads to *encouraging a school-wide commitment to quality* (Cronbach's Alpha coefficient of 0.917), and the challenge that leads to *inspiring, encouraging and recognising school staff contribution* (Cronbach's Alpha coefficient of 0.913) all contribute constructively to achieving the primary research objective of the study. Moreover, these results contribute constructively towards answering the main research question of this study.

The following section measures the reliability statistics of the engagement of school staff principle (factor) (benefits and challenges).

4.4.1.2 Factor 2: Engagement of school staff (benefits and challenges)

Table 4.10: Engagement of school staff (benefits)

Item-Total Statistics					
<i>My understanding of the benefits of engagement of school staff as a factor to improve school performance can benefit the school by...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
improving an understanding of school quality objectives by staff and increasing motivation to achieve them	24.06	20.008	0.869	0.793	0.943
enhancing involvement of staff in improving school activities	23.90	21.499	0.713	0.535	0.955
enhancing school individual development, initiatives and creativity	24.06	19.742	0.856	0.770	0.944
enhancing school staff satisfaction	24.04	19.907	0.843	0.737	0.945
enhancing trust and collaboration	24.08	18.963	0.901	0.838	0.941
increasing attention to share school values and culture	23.98	20.302	0.851	0.796	0.945
enhancing the ability to focus efforts on key processes and opportunities for improvement	23.99	19.770	0.843	0.791	0.945

These results are graphically presented and synthesised in Figure 4.10 for a better illustration.

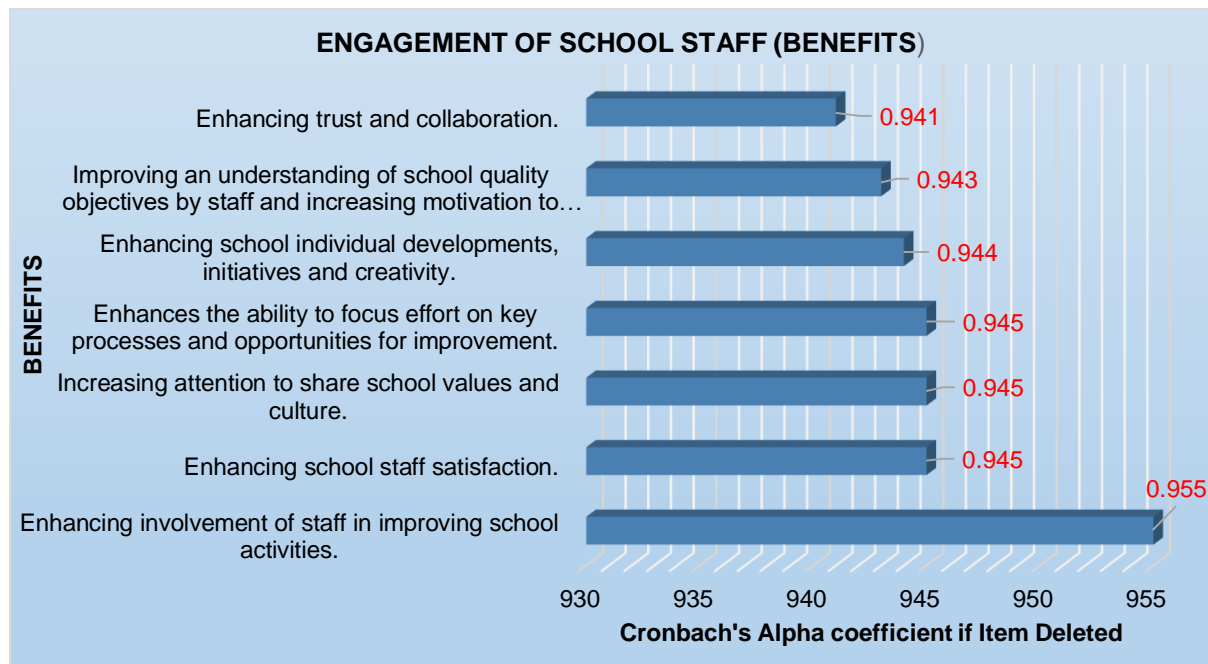


Figure 4.10: Engagement of school staff (benefits)

Based on the results displayed in Table 4.10 and Figure 4.10 (Engagement of school staff: benefits), the benefit of the engagement of school staff that leads to *improving an understanding of school quality objectives by staff and increasing motivation to achieve them* (Cronbach's Alpha coefficient of 0.943), followed by the benefit that leads to *enhancing involvement of staff in improving school activities* (Cronbach's Alpha coefficient of 0.955), the benefit that leads to *enhancing school individual developments, initiatives and creativity* (Cronbach's Alpha coefficient of 0.944), the benefit that leads to *enhancing school staff satisfaction* (Cronbach's Alpha coefficient of 0.941), the benefit that leads to *enhancing trust and collaboration* (Cronbach's Alpha coefficient of 0.945), the benefit that leads to *increasing attention to share school values and culture* (Cronbach's Alpha coefficient of 0.945), and the benefit that leads to *enhances the ability to focus effort on key processes and opportunities for improvement* (Cronbach's Alpha coefficient of 0.945) all contribute constructively to achieving the primary research objective of the study. Therefore, these results contribute constructively towards answering the main research question of this study.

Table 4.11: Engagement of school staff (Challenges)

Item-Total Statistics					
<i>My understanding of the challenges that affect engagement of school staff as a factor to improve school performance are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
communicating with school staff to promote understanding of the importance of their individual contribution	23.41	16.207	0.813	0.704	0.931
promoting collaboration throughout the school	23.27	16.053	0.817	0.705	0.931
facilitating open discussion and sharing of school knowledge and experience	23.38	16.457	0.806	0.667	0.932
empowering school staff to determine constraints to performance and to take initiatives without fear	23.38	16.176	0.837	0.743	0.929
recognising and acknowledging school staff contribution, learning and improvement	23.34	16.128	0.834	0.713	0.929
enabling self-evaluation of performance against personal objectives	23.36	16.147	0.785	0.638	0.934
conducting surveys to assess school staff satisfaction, communicating results, and taking appropriate actions	23.41	16.573	0.746	0.622	0.937

Figure 4.11 illustrates this analysis in chart form.

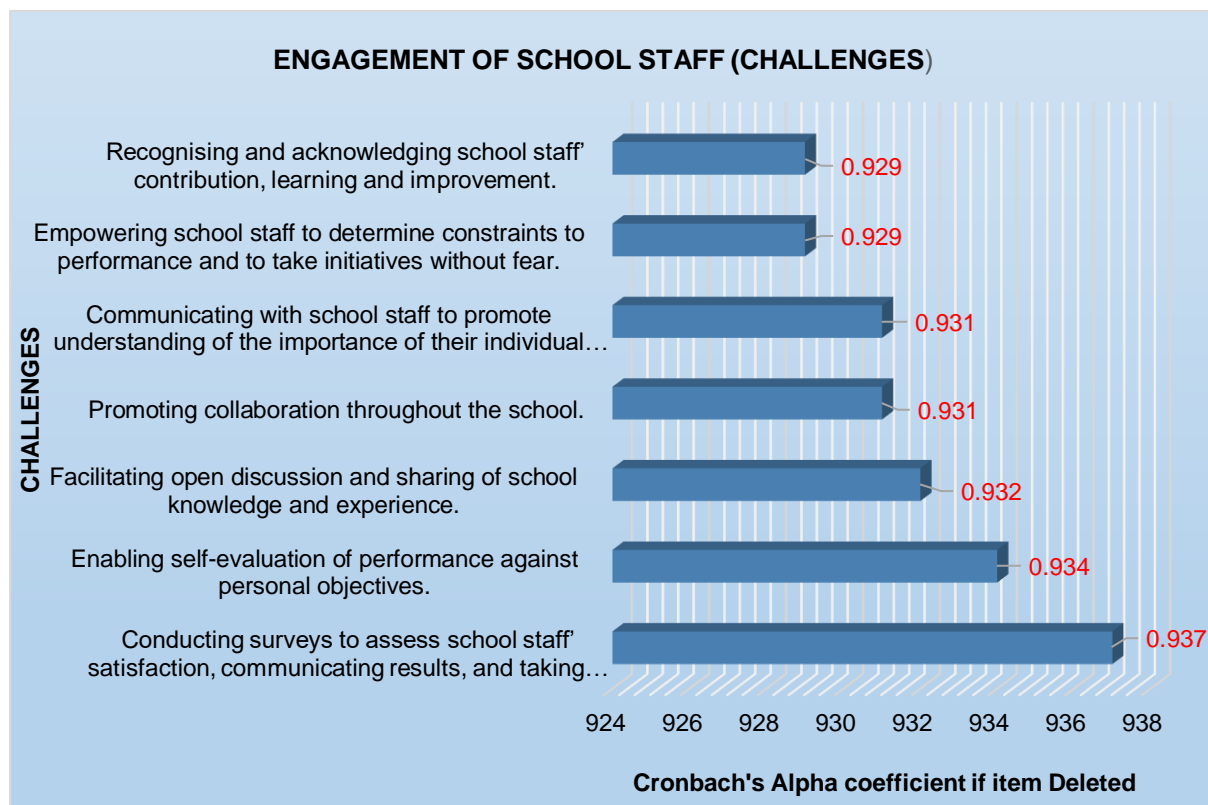


Figure 4.11: Engagement of school staff (challenges)

Table 4.11 and Figure 4.11 (Engagement of school staff: challenges) show that the engagement of school staff challenge that leads to *communicating with school staff to promote understanding of the importance of their individual contribution* (Cronbach's Alpha coefficient of 0.931), followed by the challenge that leads to *promoting collaboration throughout the school* (Cronbach's Alpha coefficient of 0.931), the challenge that leads to *facilitating open discussion and sharing of school knowledge and experience* (Cronbach's Alpha coefficient of 0.932), the challenge that leads to *empowering school staff to determine constraints to performance and to take initiatives without fear* (Cronbach's Alpha coefficient of 0.929), the challenge that leads to *recognising and acknowledging school staff contribution, learning and improvement* (Cronbach's Alpha coefficient of 0.929), the challenge that leads to *enabling self-evaluation of performance against personal objectives* (Cronbach's Alpha coefficient of 0.934), and the challenge that leads to *conducting surveys to assess school staff satisfaction, communicating results, and taking appropriate actions* (Cronbach's Alpha coefficient of 0.937) all contribute constructively to achieving the primary research objective of the study. Accordingly, these results contribute constructively towards answering the main research question of this study.

The following section measures the reliability statistics of evidence-based decision-making in schools principle (factor) (benefits and challenges).

4.4.1.3 Factor 3: Evidence-based decision-making in schools (benefits and challenges)

Table 4.12: Evidence-based decision-making in schools (Benefits)

Item-Total Statistics					
<i>My understanding is that the benefits of evidence-based decision-making in schools as a factor to improve school performance are to...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
improve decision-making processes in schools	16.13	7.720	0.642	0.433	0.908
improve assessments of school process performance and ability to achieve school objectives	16.05	7.144	0.689	0.492	0.900
improve school operational effectiveness and efficiency	16.15	6.334	0.846	0.749	0.866
increase the ability to review, challenge and change school opinions and decisions	16.11	6.331	0.860	0.758	0.863
increase the ability to demonstrate the effectiveness of past school decisions	16.17	6.817	0.786	0.631	0.880

Figure 4.12 shows this analysis in chart form.

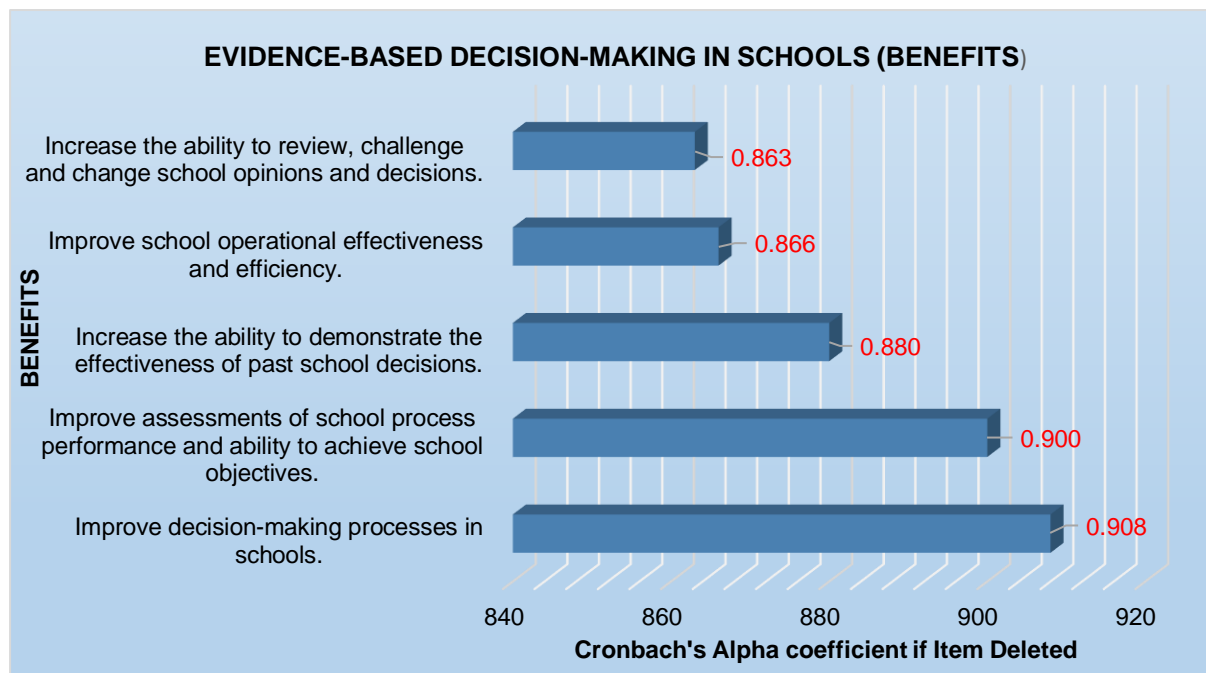


Figure 4.12: Evidence-based decision-making in schools (benefits)

As displayed in Table 4.12 and Figure 4.12 (evidence-based decision-making in schools: benefits), the results indicate that the benefit of evidence-based decision-making in schools as a factor to improve school performance that alludes to *improving decision-making processes in schools* (Cronbach's Alpha coefficient of 0.908), and the benefit that alludes to *improve assessments of school process performance and ability to achieve school objectives* (Cronbach's Alpha coefficient of 0.900) contribute constructively to achieving the primary research objective of the study. However, Table 4.12 and Figure 4.12 indicate that the benefit of evidence-based decision-making in schools that alludes to *improve school operational effectiveness and efficiency* (Cronbach's Alpha coefficient of 0.866), the benefit that alludes to *increase the ability to review, challenge and change school opinions and decisions* (Cronbach's Alpha coefficient of 0.863), and the benefit that alludes to *increase the ability to demonstrate the effectiveness of past school decisions* (Cronbach's Alpha coefficient of 0.880) contribute significantly to achieving the primary research objective of the study. Therefore, these results contribute significantly towards answering the main research question of this study.

Table 4.13: Evidence-based decision-making in schools (Challenges)

Item-Total Statistics					
<i>My understanding is that the challenges that hinder evidence-based decision-making in schools as a factor to improve school performance is...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
determining, measuring and monitoring key school indicators to demonstrate school performance	19.40	11.911	0.732	0.550	0.931
making all school data needed available to the relevant school staff	19.18	11.512	0.814	0.730	0.921
ensuring that school data and information are sufficiently accurate, reliable and secure	19.18	10.784	0.846	0.743	0.917
analysing and evaluating school data and information using suitable methods	19.27	11.044	0.864	0.762	0.915
ensuring that school staff are competent to analyse and evaluate school data and information as needed	19.23	11.504	0.760	0.642	0.928
making school decisions and taking actions based on evidence	19.23	11.108	0.822	0.679	0.920

These results are graphically presented and synthesised in Figure 4.13 for a better illustration.

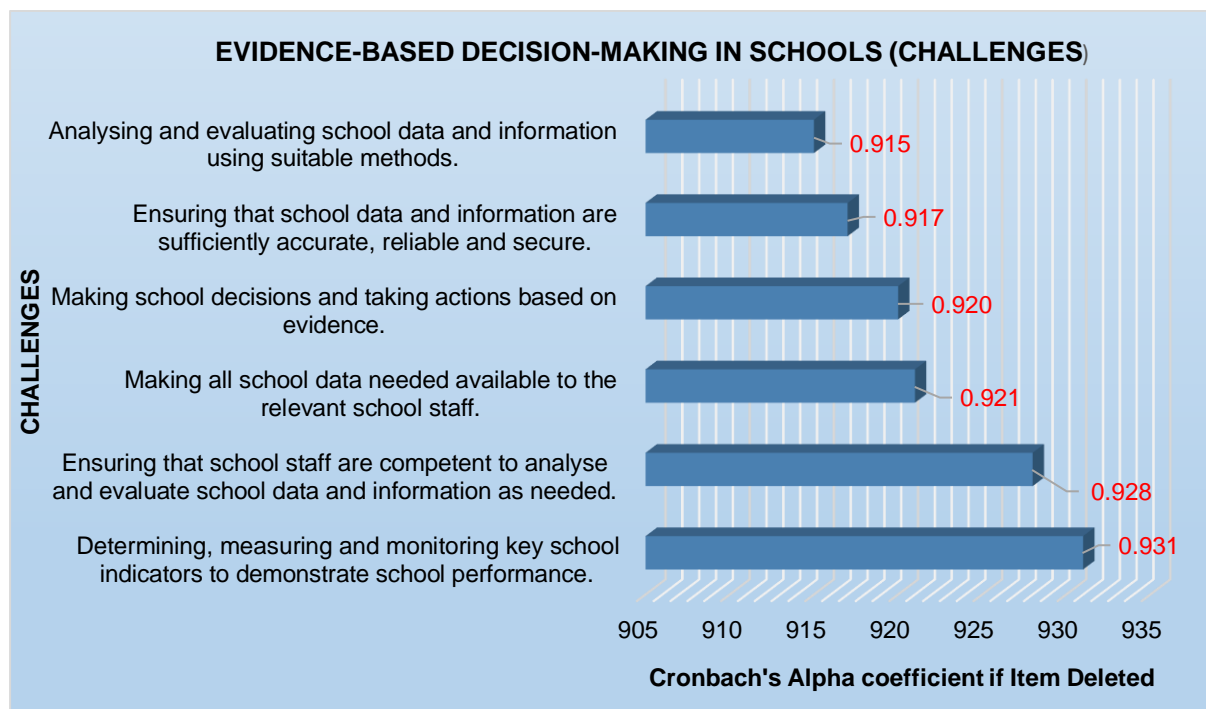


Figure 4.13: Evidence-based decision-making in schools (challenges)

Based on the results displayed in Table 4.13 and Figure 4.13 (Evidence-based decision-making in schools: Challenges), the evidence-based decision-making in schools challenge that alluded to *determining, measuring and monitoring key school indicators to demonstrate school performance* (Cronbach's Alpha coefficient of 0.931), followed by the challenge that alludes to *analysing and evaluating school data and information using suitable methods* (Cronbach's Alpha coefficient of 0.928), the challenge that alludes to *ensuring that school staff are competent to analyse and evaluate school data and information as needed* (Cronbach's Alpha coefficient of 0.928), the challenge that alludes to *making all school data needed available to the relevant school staff* (Cronbach's Alpha coefficient of 0.921), the challenge that alludes to *making school decisions and taking actions based on evidence* (Cronbach's Alpha coefficient of 0.920), and the challenge that alludes to *ensuring that school data and information are sufficiently accurate, reliable and secure* (Cronbach's Alpha coefficient of 0.917) all contribute constructively to achieving the primary research objective of the study. Therefore, these results contribute constructively towards answering the main research question of this study.

The following section measures the reliability statistics of school relationship management principle (factor) (Benefits and Challenges).

4.4.1.4 Factor 4: School relationship management (Benefits and Challenges)

Table 4.14: School relationship management (Benefits)

Item-Total Statistics					
<i>I believe that the benefits of school relationship management as a factor to improve school performance can be achieved when...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
enhancing performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder	7.80	1.606	0.785	0.617	0.774
promoting common understanding of school objectives and values among school stakeholders	7.72	1.622	0.713	0.518	0.836
increasing capability to create value for school stakeholders by sharing resources and competence and managing school quality-related risks	7.72	1.477	0.735	0.555	0.820

These results are presented in Figure 4.14 and further explained naratively to provide a greater insight into the analysis.

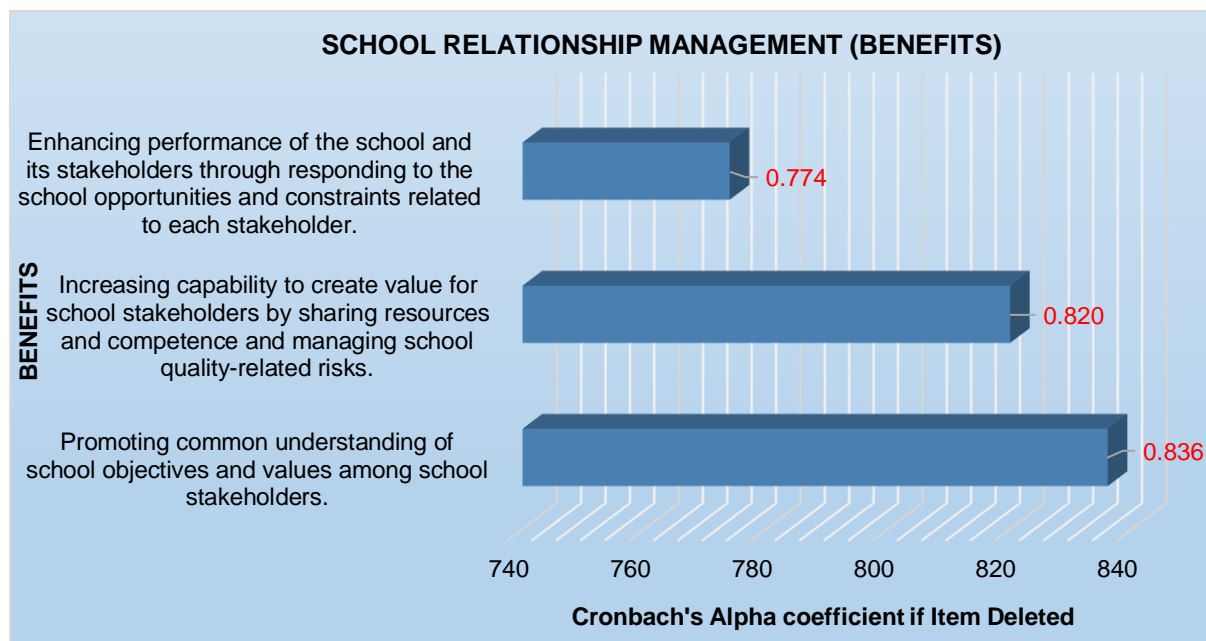


Figure 4.14: School relationship management (Benefits)

Table 4.14 and Figure 4.14 (School relationship management: Benefits) indicate that the school relationship management benefit that advocates *promoting common understanding of school objectives and values among school stakeholders* (Cronbach's Alpha coefficient of 0.836), followed by the benefit that advocates *increasing capability to create value for school stakeholders by sharing resources and competence and managing school quality-related risks* (Cronbach's Alpha coefficient of 0.820) contribute significantly to achieving the primary research objective of the study. Conversely, Table 4.14 and Figure 4.14 (School relationship management: Benefits) further indicate that the school relationship management benefit that advocates *enhancing performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder* (Cronbach's Alpha coefficient of 0.774) contribute insignificantly to achieving the primary research objective of the study; however, the challenge contributes towards significantly evaluating the seven QMPs in public schools. As a result, these results contribute significantly towards answering the main research question of this study.

Table 4.15: School relationship management (Challenges)

Item-Total Statistics					
<i>I believe that the challenges of school relationship management as a factor to improve school performance that are experienced in schools are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
determining and prioritising school stakeholder relationships that need to be managed	15.51	7.573	0.813	0.706	0.924
establishing school relationships that balance short-term gains with long-term considerations	15.40	7.224	0.860	0.767	0.915
pooling and sharing information, expertise and resources with relevant school stakeholders	15.51	7.439	0.821	0.683	0.923
measuring school performance and providing performance feedback to school stakeholders, as appropriate, to enhance school improvement activities	15.54	7.365	0.801	0.672	0.926
Establishing collaborative development and improvement activities with partners and school stakeholders	15.46	7.365	0.850	0.773	0.917

These results are demonstrated and presented in Figure 4.15 for a better illustration.

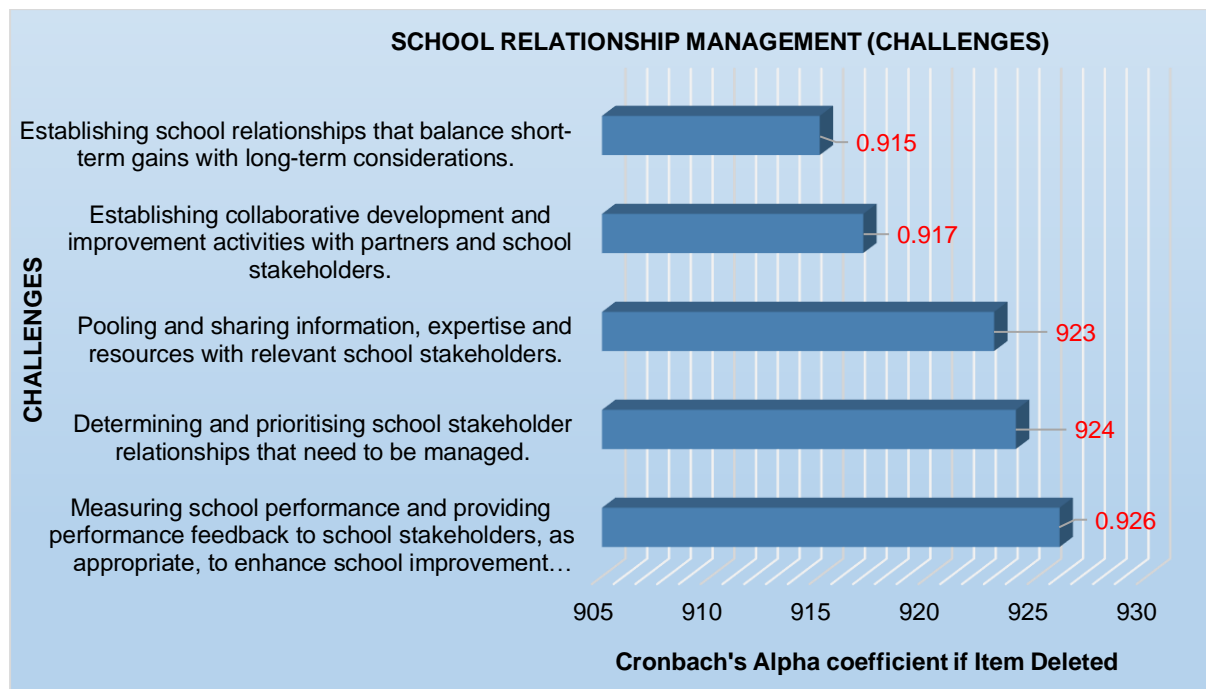


Figure 4.15: School relationship management (Challenges)

Table 4.15 and Figure 4.15 (School relationship management: Challenges) indicate that the school relationship management challenge that alludes to *determining and prioritising school stakeholder relationships that need to be managed* (Cronbach's Alpha coefficient of 0.924), followed by the challenge that alludes to *establishing school relationships that balance short-term gains with long-term considerations* (Cronbach's Alpha coefficient of 0.915), the challenge that alludes to *pooling and sharing information, expertise and resources with relevant school stakeholders* (Cronbach's Alpha coefficient of 0.923), the challenge that alludes to *measuring school performance and providing performance feedback to school stakeholders, as appropriate, to enhance school improvement activities* (Cronbach's Alpha coefficient of 0.926), and the challenge that alludes to *establishing collaborative development and improvement activities with partners and school stakeholders* (Cronbach's Alpha coefficient of 0.917) contribute constructively to achieving the primary research objective of the study. Consequently, these results contribute constructively towards answering the main research question of this study.

The following section measures the reliability statistics of the process approach in schools principle (factor) (Benefits and Challenges).

4.4.1.5 Factor 5: Process approach in schools (Benefits and Challenges)

Table 4.16: Process approach in schools (Benefits)

Item-Total Statistics					
<i>I believe that the benefits of the process approach in schools as a factor to improve school performance is to...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
enhance the school's ability to focus effort on key processes and opportunities for school improvement.	11.65	3.780	0.643	0.424	0.872
provide consistence and predictable school outcomes through a system of aligned processes	11.66	3.219	0.769	0.640	0.823
optimise school performance through effective process management, efficient use of school resources, and reduced cross-functional barriers	11.62	3.219	0.724	0.526	0.842
enable the school to provide confidence to school stakeholders as to its consistency, effectiveness and efficiency	11.66	3.015	0.797	0.666	0.812

These results are illustrated in Figure 4.16 and explained naratively.

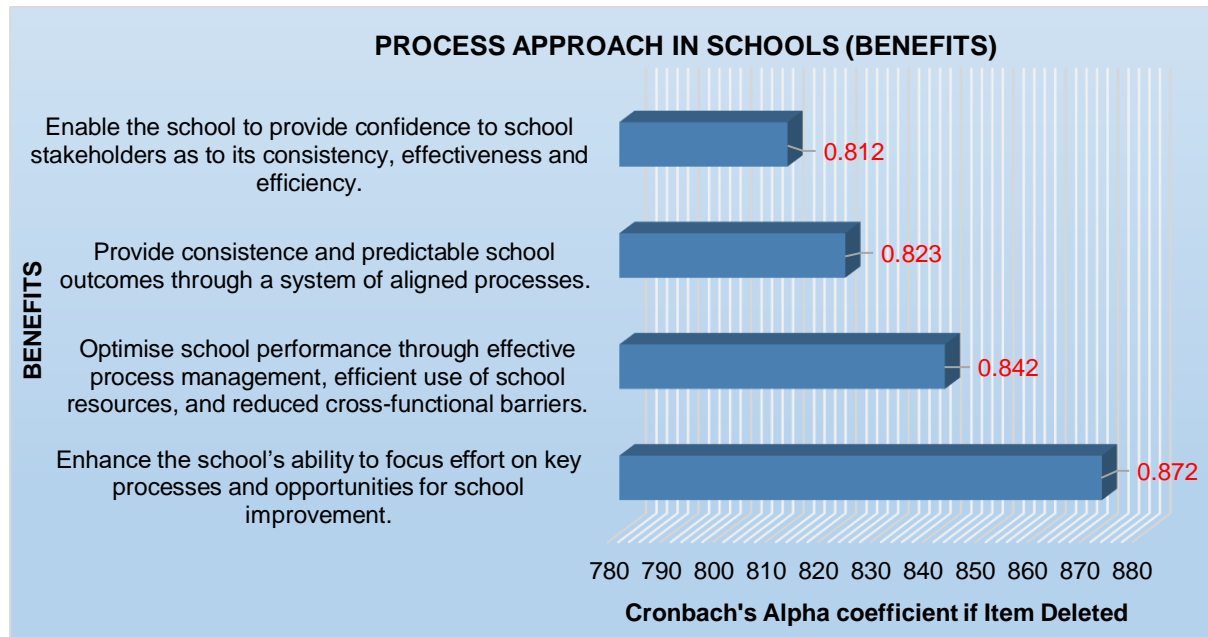


Figure 4.16: Process approach in schools (Benefits)

Based on the results displayed in Table 4.16 and Figure 4.16 (Process approach in schools: Benefits), the benefit of the process approach in schools that alludes to *enhance the school's ability to focus effort on key processes and opportunities for school improvement (Cronbach's Alpha coefficient of 0.872)*, followed by the benefit that alludes to *provide consistence and predictable school outcomes through a system of aligned processes (Cronbach's Alpha coefficient of 0.823)*, the benefit that alludes to *optimise school performance through effective process management, efficient use of school resources, and reduced cross-functional barriers (Cronbach's Alpha coefficient of 0.842)*, the benefit that alludes to *enable the school to provide confidence to school stakeholders as to its consistency, effectiveness and efficiency (Cronbach's Alpha coefficient of 0.812)*, and the benefit that alludes to *enhance the school's ability to focus effort on key processes and opportunities for school improvement (Cronbach's Alpha coefficient of 0.872)* all contribute significantly to achieving the primary research objective of the study. For this reason, these results contribute significantly towards answering the main research question of this study.

Table 4.17: Process approach in schools (Challenges)

Item-Total Statistics					
<i>I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
define school objectives of the system and processes necessary to achieve them	22.84	15.398	0.746	0.676	0.920
establish authority, responsibility and accountability for managing school processes	22.76	14.729	0.797	0.696	0.916
understanding the school's capabilities and determining resource constraints prior to action	22.75	14.954	0.788	0.690	0.916
determine school process interdependencies and analyse the effect of modifications to individual school processes on the system as a whole	22.78	14.889	0.835	0.761	0.912
manage school processes and their interrelations as a system to achieve school quality objectives effectively and efficiently	22.69	16.168	0.674	0.560	0.927
ensure the necessary school information is available to operate and improve school processes	22.66	15.195	0.776	0.731	0.918

Item-Total Statistics					
<i>I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
manage risks that can affect school outputs processes and overall school outcomes of quality management	22.71	15.564	0.802	0.756	0.916

These results are shown in Figure 4.17 and further discussed to provide a greater insight into the analysis.

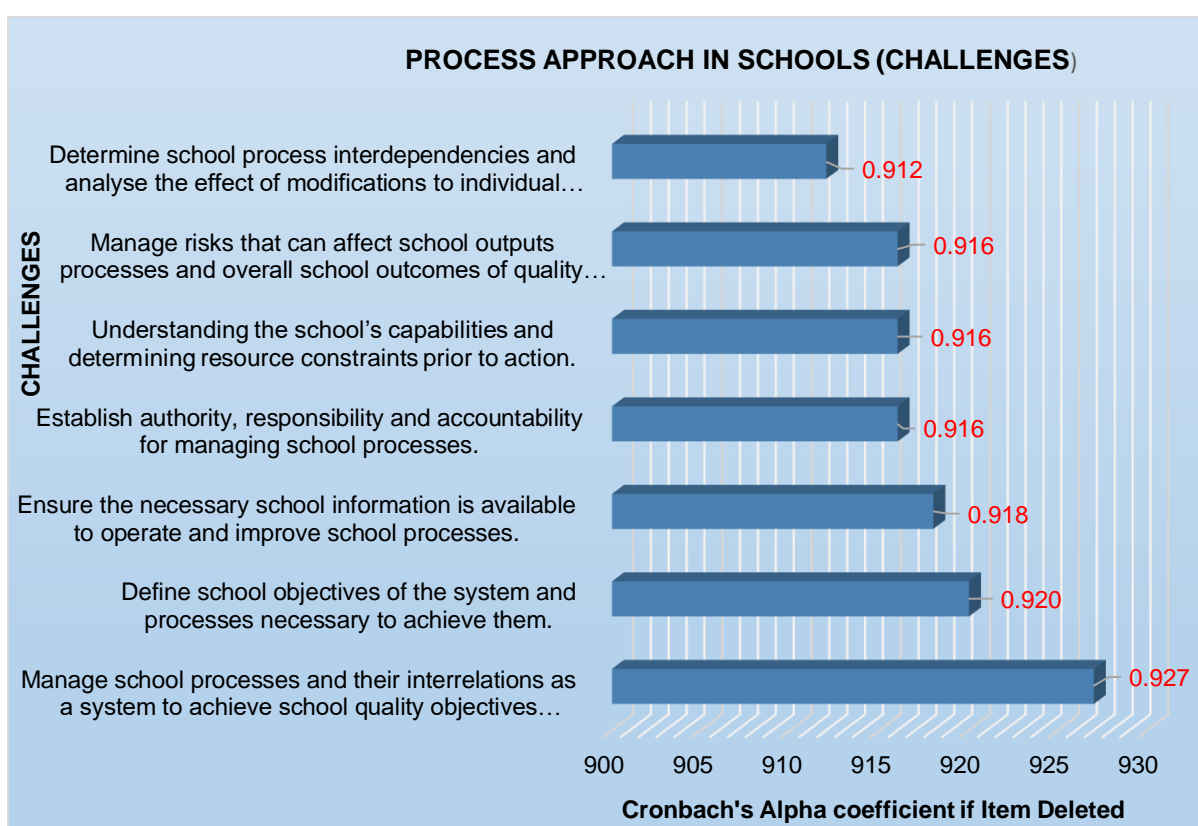


Figure 4.17: Process approach in schools (Challenges)

Based on the results displayed in Table 4.17 and Figure 4.17 (Process approach in schools: Challenges), the challenge of the process approach in schools that alludes to *define school objectives of the system and processes necessary to achieve them* (Cronbach's Alpha coefficient of 0.920), followed by the challenge that alludes to *establish authority, responsibility and accountability for managing school processes* (Cronbach's Alpha coefficient of 0.916), the challenge that alludes to *understanding the school's capabilities and determining resource constraints prior to action* (Cronbach's Alpha coefficient of 0.916),

the challenge that alludes to *determine school process interdependencies and analyse the effect of modifications to individual school processes on the system as a whole* (Cronbach's Alpha coefficient of 0.912), the challenge that alludes to *manage school processes and their interrelations as a system to achieve school quality objectives effectively and efficiently* (Cronbach's Alpha coefficient of 0.927), the challenge that alludes to *ensure the necessary school information is available to operate and improve school processes* (Cronbach's Alpha coefficient of 0.918), and the challenge that alludes to *manage risks that can affect school outputs processes and overall school outcomes of quality management* (Cronbach's Alpha coefficient of 0.916) all contribute constructively to achieving the primary research objective of the study. Consequently, these results contribute constructively towards answering the main research question of this study.

The following section measures the reliability statistics of improvement of operational school activities principle (factor) (Benefits and Challenges).

4.4.1.6 Factor 6: Improvement of operational school activities (Benefits and Challenges)

4.18: Improvement of operational school activities (Benefits)

Item-Total Statistics					
<i>I believe that the benefits of improvement of operational school activities as a factor to improve school performance can be achieved through...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
improving process performance, school capabilities and customer satisfaction	15.09	7.137	0.806	0.657	0.877
enhancing focus on identifying the root-cause investigation and determination of the problem, followed by prevention and corrective actions	15.10	7.232	0.665	0.488	0.907
enhancing the ability to anticipate and react to internal and external school risks and opportunities	15.13	7.396	0.741	0.568	0.891
improving the use of learning for improvement	15.11	6.550	0.817	0.729	0.874
enhancing drive for innovation	15.11	6.873	0.807	0.736	0.876

These results are graphically presented in Figure 4.3 for a better illustration.

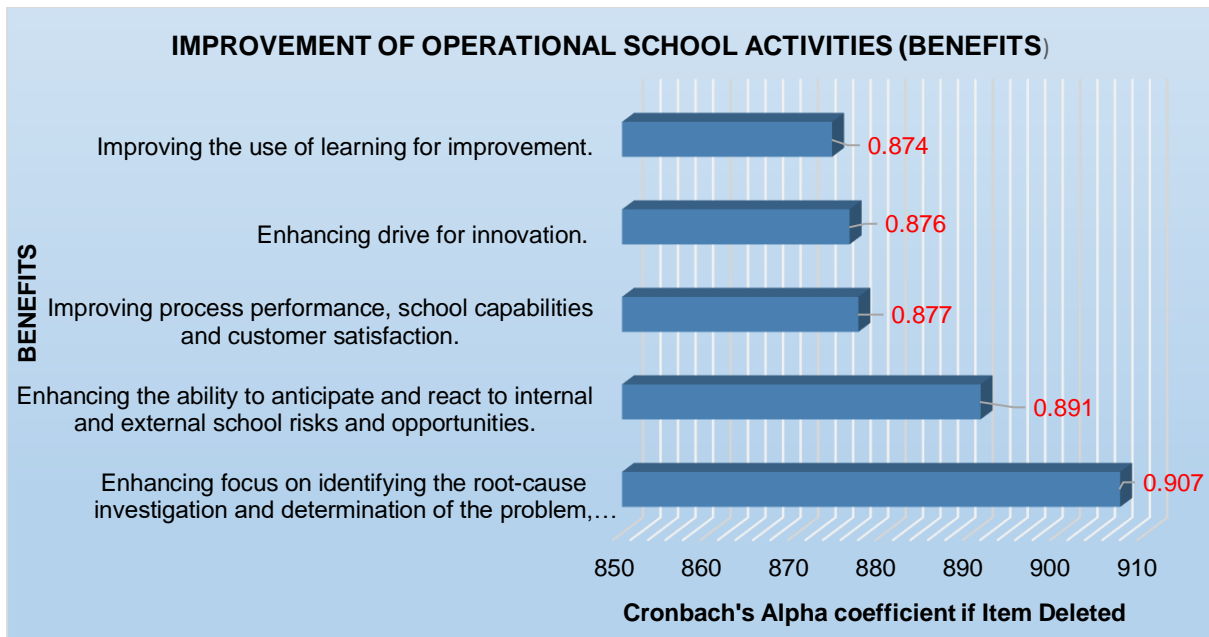


Figure 4.18: Improvement of operational school activities (Benefits)

Table 4.18 and Figure 4.18 (Improvement of operational school activities: Benefits) indicate that the benefit of improvement of operational school activities that alludes to *enhancing focus on identifying the root-cause investigation and determination of the problem, followed by prevention and corrective actions* (Cronbach's Alpha coefficient of 0.907) contribute constructively to achieving the primary research objective of the study. In contrast, Table 4.18 and Figure 4.18 further indicate that the benefit of improvement of operational school activities that alludes to *improving process performance, school capabilities and customer satisfaction* (Cronbach's Alpha coefficient of 0.877), followed by the benefit that alludes to *enhancing the ability to anticipate and react to internal and external school risks and opportunities* (Cronbach's Alpha coefficient of 0.891), the benefit that alludes to *improving the use of learning for improvement* (Cronbach's Alpha coefficient of 0.874), and the benefit that alludes to *enhancing drive for innovation* (Cronbach's Alpha coefficient of 0.876) contribute significantly to achieving the primary research objective of the study. Therefore, these results contribute significantly towards answering the main research question of this study.

4.19: Improvement of operational school activities (Challenges)

Item-Total Statistics					
<i>I believe that the challenges of improvement of operational school activities as a factor to improve school performance that hinder performance improvement are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
promoting establishment of improvement objectives at all school levels	15.10	9.069	0.790	0.643	0.921
educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives	15.01	9.206	0.751	0.565	0.928
ensuring that school staff is competent to successfully promote and complete improvement activities	15.08	8.909	0.855	0.772	0.908
developing and deploying processes to implement improvement activities throughout the school	15.11	8.999	0.828	0.701	0.913
tracking, reviewing and auditing the planning, implementation, completion and results of improvement activities	15.03	8.938	0.870	0.783	0.906

These results are graphically displayed in Figure 4.19 for a better illustration.

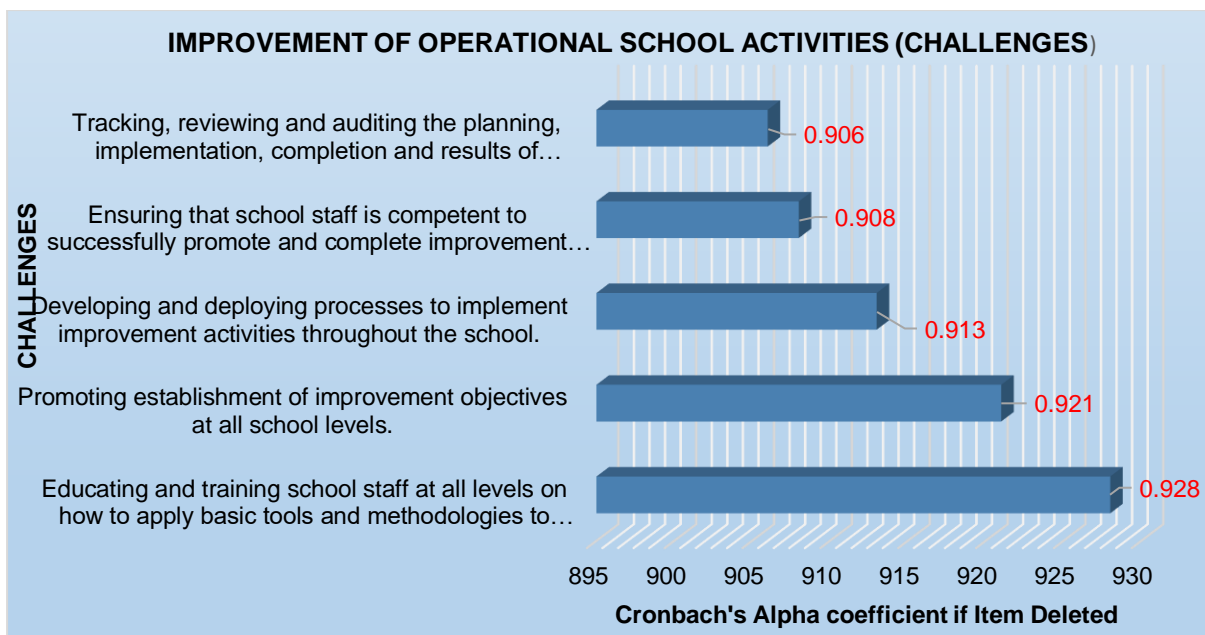


Figure 4.19: Improvement of operational school activities (Challenges)

Table 4.19 and Figure 4.19 (Improvement of operational school activities: Challenges) indicate that the challenge of improvement of operational school activities that results in *promoting establishment of improvement objectives at all school levels (Cronbach's Alpha coefficient of 0.921)*, followed by the challenge that results in *educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives (Cronbach's Alpha coefficient of 0.928)*, the challenge that results in *ensuring that school staff is competent to successfully promote and complete improvement activities (Cronbach's Alpha coefficient of 0.908)*, the challenge that results in *developing and deploying processes to implement improvement activities throughout the school (Cronbach's Alpha coefficient of 0.913)*, and the challenge that results in *tracking, reviewing and auditing the planning, implementation, completion and results of improvement activities (Cronbach's Alpha coefficient of 0.906)* contribute constructively to achieving the primary research objective of the study. Accordingly, these results contribute constructively towards answering the main research question of this study.

The next section measures the reliability statistics of customer focus in schools' principle (factor) (Benefits and Challenges).

4.4.1.7 Factor 7: Customer focus in schools (Benefits and Challenges)

4.20: Customer focus in schools (Benefits)

Item-Total Statistics					
<i>My understanding is that the benefits of customer focus in schools as a factor to improve school performance can improve school performance by...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
increasing school customer value	16.41	5.279	0.839	0.834	0.924
increasing school customer satisfaction	16.40	5.290	0.863	0.827	0.920
improving school customer loyalty	16.41	5.024	0.887	0.819	0.915
enhancing school reputation	16.35	5.193	0.884	0.815	0.916
expanding school customer base	16.35	5.386	0.718	0.606	0.947

These results are illustrated in Figure 4.20 and discussed narratively.

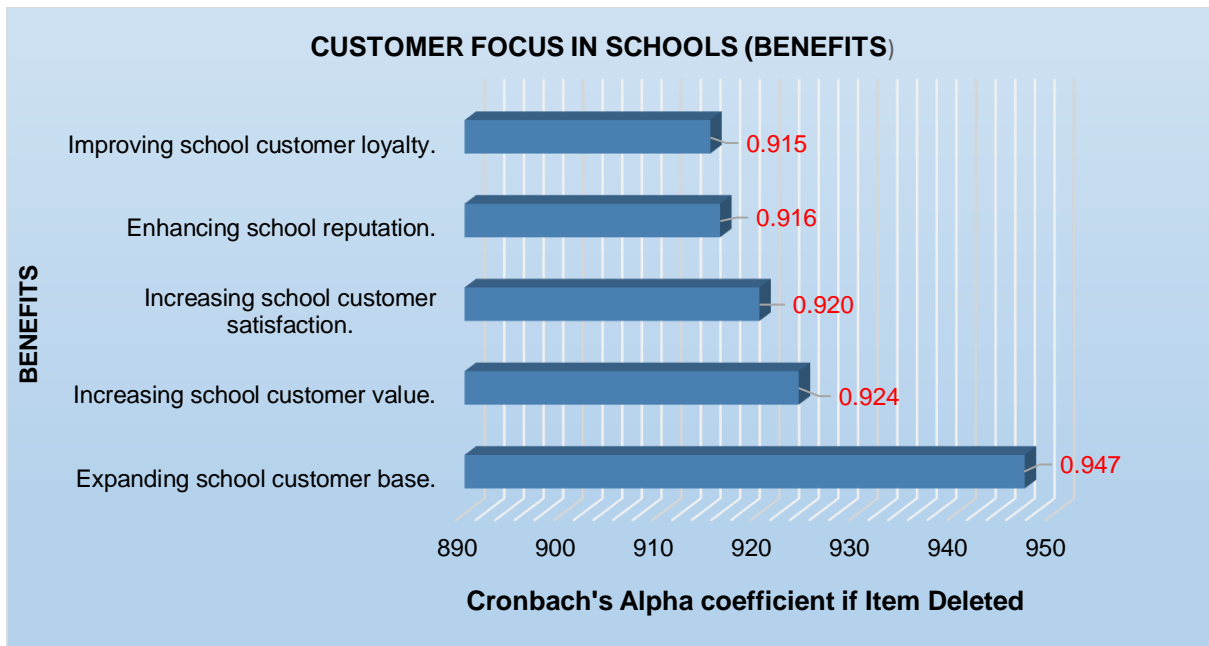


Figure 4.20: Customer focus in schools (Benefits)

Table 4.20 and Figure 4.20 (Customer focus in schools: Benefits) show that the benefit of the customer focus in schools that relates to *increasing school customer value* (Cronbach's Alpha coefficient of 0.924), followed by the benefit that relates to *increasing school customer satisfaction* (Cronbach's Alpha coefficient of 0.920), the benefit that relates to *improving school customer loyalty* (Cronbach's Alpha coefficient of 0.915), the benefit that relates to *enhancing school reputation* (Cronbach's Alpha coefficient of 0.916), and the benefit that relates to *expanding school customer base* (Cronbach's Alpha coefficient of 0.947) contribute constructively to achieving the primary research objective of the study. Accordingly, these results contribute constructively towards answering the main research question of this study.

4.21: Customer focus in schools (Challenges)

Item-Total Statistics					
<i>My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
recognising direct and indirect school customers as those who receive value from the school	19.08	12.764	0.679	0.480	0.938
understanding school customers' current and future needs and expectations	19.08	11.169	0.843	0.736	0.919
linking school objectives to					

Item-Total Statistics					
<i>My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are...</i>	Scale mean, if item deleted	Scale variance, if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha coefficient, if item deleted
school customer needs and expectations	19.16	11.006	0.830	0.759	0.921
planning, designing, developing, delivering and supporting services to meet school customer needs and expectations	19.19	11.441	0.806	0.708	0.923
determining and taking actions on school customer needs and expectations that can affect customer satisfaction	19.08	11.496	0.833	0.733	0.920
actively managing relationships with school customers to achieve sustained school performance	19.16	10.925	0.864	0.819	0.916

These results are depicted in Figure 4.21 to provide a greater insight into the analysis.

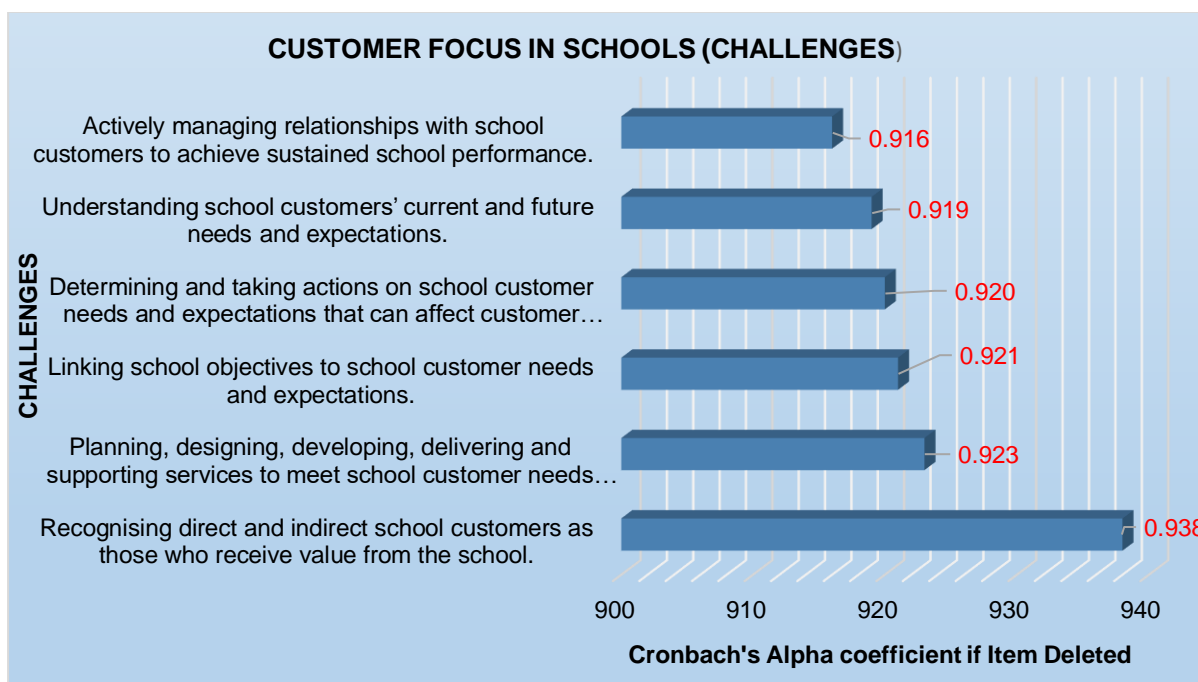


Figure 4.21: Customer focus in schools (Challenges)

Table 4.21 and Figure 4.21 (Customer focus in schools: Challenges) show that the challenge that hinders customer focus in schools that relates to *recognising direct and indirect school customers as those who receive value from the school* (Cronbach's Alpha coefficient of 0.938), followed by the challenge that relates to *understanding school customers' current*

and future needs and expectations (Cronbach's Alpha coefficient of 0.919), the challenge that relates to linking school objectives to school customer needs and expectations (Cronbach's Alpha coefficient of 0.921), the challenge that relates to planning, designing, developing, delivering and supporting services to meet school customer needs and expectations (Cronbach's Alpha coefficient of 0.923), the challenge that relates to determining and taking actions on school customer needs and expectations that can affect customer satisfaction (Cronbach's Alpha coefficient of 0.920), and the challenge that relates to actively managing relationships with school customers to achieve sustained school performance (Cronbach's Alpha coefficient of 0.916) contribute constructively to achieving the primary research objective of the study. As a result, these results contribute constructively towards answering the main research question of this study.

Based on the results presented in Tables 4.8 to 4.21 and Figures 4.8 to 4.21, it should be noted that the overall Cronbach's Alpha coefficient value reliability of all seven QMPs (factors) benefits and challenges is adequate at 0.921.

The next section discusses the descriptive statistical analysis of the study and how the analysis contributes to the study.

4.5 Descriptive Statistical Analysis

According to Salkind (2018), descriptive statistics can be used to describe some of the characteristics of the distribution of scores that have been collected, such as the average score on one variable, or the extent to which one score differs from another. This section focuses on the descriptive analysis of the following three variables, namely:

- Descriptive statistical analysis for the seven QMPs
- Overview of the seven QMPs in public schools
- Experience of respondents' quality management in public schools.

The sample size of this study exceeds the value of 50 respondents which is normally regarded as the requirement for significance for descriptive statistical analysis (Hair, Black, Babin & Anderson, 2014:115-116). In this study, the key variables were measured on a five-point Likert scale, where: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5.

Consequently, in this section, each variable is linked and explained, in relation to the primary research objective and the secondary research objectives of this study. Table 4.22 indicates the abbreviations and definitions in the frequency distribution tables in this section.

Table 4.22: Abbreviations of frequency distributions

Abbreviation	Definition
No.	Number
Std. dev.	Standard deviation
T	T-test / T-value
Prob	Probability

Further to the abbreviation of the frequency distribution table, Table 4.23 identifies and explains the purpose of the sub-sections in this section, which emanated from the discussions in the literature review in chapter 2 and, subsequently, from the results of the online questionnaire.

Table 4.23: Purpose of the sub-sections

Sub-sections	Purpose
Descriptive analysis for the seven QMPs (Factors)	To understand the level of knowledge of the seven QMPs from the respondents in public schools
Overview of QMPs in public schools	To acquire great insight from the respondents regarding the seven QMPs as factors that can be used to improve school performance
Experience of respondents on QMPs in public schools	To obtain feedback from respondents regarding their experience in QMPs in public schools

The t-test formula adopted in this study is the t-distribution test used to compare the mean scores on the Likert scale with the undecided or neutral score of 3 which was the mid-point between disagree and agree by applying the one-sample t-test. The formula used was:

$$T = \frac{\bar{X} - \mu}{S/\sqrt{n}}$$

Where:

- \bar{X} is the mean score
- μ is the assumed mean value (in this case, it equals to 3)
- S is the standard deviation of the scores
- Xi's (where i = 1, 2, ...30)
- n is the sample size.

Furthermore, this was undertaken by testing the null hypothesis that the calculated (or assumed) mean score for a particular question was equal to 3 (i.e. meaning that the respondents were undecided on the statement or question). If the difference between the two values, i.e. the calculated mean score and the assumed mean score of 3, was statistically significant from zero, and provided the mean score calculated from the data was less than 3, then this would provide scientific proof that respondents disagreed with the statement. If the difference was not significant, it would mean that they were undecided or neutral. On the other hand, if the difference was significant and the mean score was greater than 3, then it would mean that the respondents agreed with the statement. The level of significance used was 0.050 because the results of the study have a 5% or lower chance of occurring under the null hypothesis to be considered statistically significant.

The following section discusses the descriptive analysis for the seven QMPs.

4.5.1 Descriptive analysis for the seven quality management principles (factors)

Respondents were requested to provide their experience in the seven QMPs (benefits and challenges) in public schools, responding to Section B of the online questionnaire. For this reason, the aim of this section is to analyse the data received from respondents, in relation to the degree of respondents' agreements with the QMPs benefits and challenges statements, to assist the researcher with reaching the primary research objective that relates to identifying and then evaluating the most significant factors of QMPs that improve school performance in the Tshwane District, arriving at the reliable recommendations on the factors that improve school performance in the Tshwane District, as well as answering the main research question, *What are the most significant factors of QMPs to improve school performance in the Tshwane District?* and the sub-research question 1: *What factors support QMPs in the Tshwane District?*

Therefore, the frequency distribution of the seven QMPs in Tables 4.24 to 4.37 and Figures 4.22 to 4.35 from the survey variables ascertains whether respondents (n = 169) agreed, were neutral, or disagreed with the seven QMPs benefits and challenges statements. The seven QMPs in this study were measured, and the online questionnaire collected the data of respondents based on the experience and knowledge in the seven QMPs, as this study considers the seven QMPs as a set of fundamental beliefs, norms, rules and values that can be used as a basis for quality management.

Therefore, Tables 4.24 to 4.37 show the frequency distribution variable results of the descriptive statistical analysis for the seven QMPs. Furthermore, Tables 4.24 to 4.37 and Figures 4.22 to 4.35 also show the mean scores results, the t-test and the Likert scale percentages. The t-test tested the null hypothesis that the mean score is equal to 3. Some of the mean scores were below 3, and others were equal to 3 or above 3, which implies that either the respondents generally disagreed, were neutral, or agreed with the statements in the online questionnaire. Additionally, in Tables 4.24 to 4.37, summaries of the statistical analysis of the seven QMPs variables determined through the data collected are displayed.

The following section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (reject/accept), in respect of the benefits and challenges of school leadership principle (factor).

4.5.1.1 Factor 1: School leadership

Table 4.24: Frequency distribution of school leadership (Benefits)

School leadership	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
School Leadership (Benefits)										
<i>I believe that the benefits of school leadership as a factor to improve school performance are...</i>										
a. Increasing effectiveness and efficiency in meeting quality school objectives	4	0	18	93	52	4.130	0.790	18.50	0.000	Reject
b. Providing better school coordination processes	2	0	10	90	63	4.280	0.690	23.90	0.000	Reject
c. Improving communication between school levels and functions	2	0	18	84	61	4.220	0.737	21.30	0.000	Reject
d. Developing and improving school capabilities and staff to deliver desired school results	2	0	7	98	62	4.290	0.660	25.40	0.000	Reject

The Likert scale results are displayed in Figure 4.22 and further discussed.

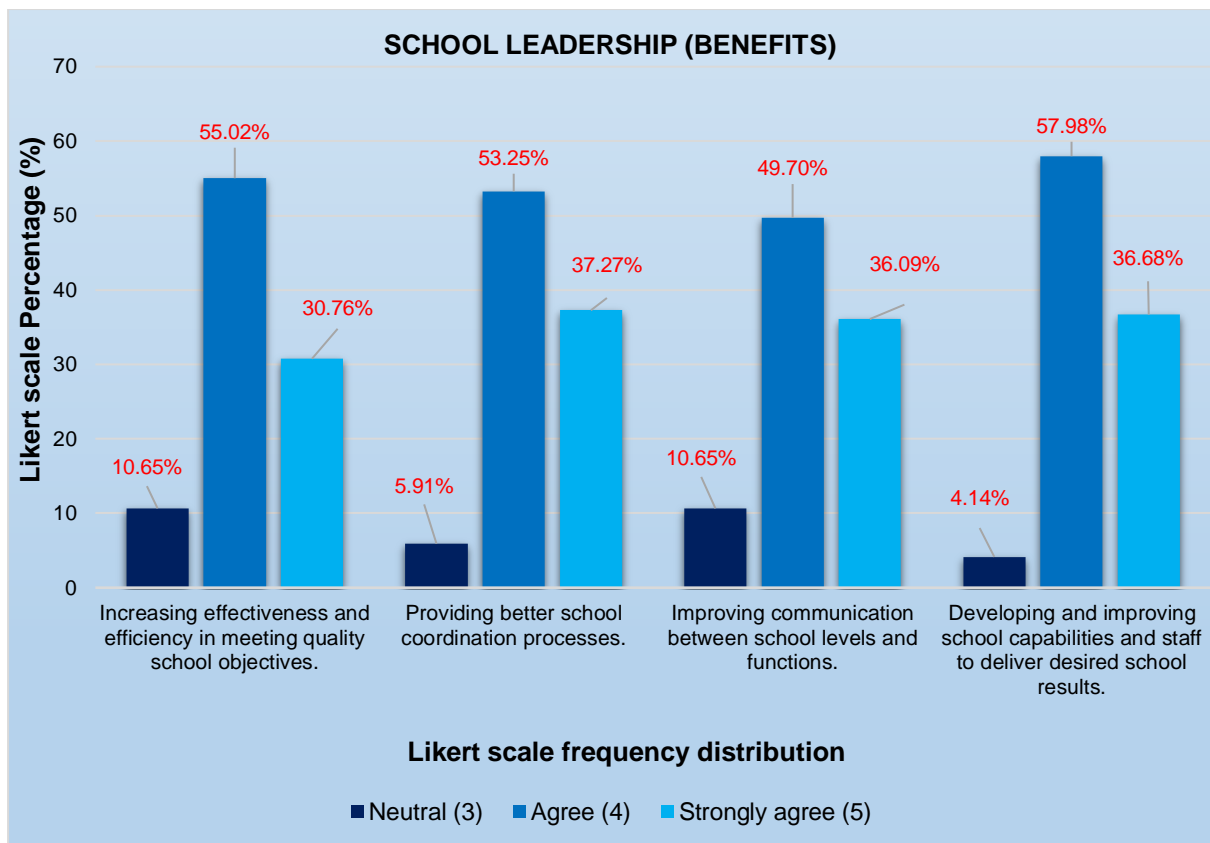


Figure 4.22: Likert scale frequency distribution of school leadership (Benefits)

From Table 4.24, on the variable that states, *I believe that the benefits of school leadership as a factor to improve school performance are*, it is evident that a one-sample t-test indicates that the overall mean score of 4.230 (std. dev. = 0.719) is statistically significant from the mid-point of 3 ($t = 22.28$, prob. = 0.000). This means that the respondents ($n = 169$) believed that the benefits of school leadership as a factor to improve school performance are increasing effectiveness and efficiency in meeting quality school objectives, providing better school coordination processes, improving communication between school levels and functions, and developing and improving school capabilities and staff to deliver desired school results.

It should be noted that the overall mean score is greater than 3 (neutral) and, as a result, according to the t-test results, the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Therefore, the results illustrated in Figure 4.22 imply that the respondents ($n = 169$) agreed with the statements of school leadership benefits. Therefore, the statements of school leadership benefits contribute constructively towards achieving the primary research objective and contribute constructively towards answering the main research question of this study.

Table 4.25: Frequency distribution of school leadership (Challenges)

School Leadership	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept	
School Leadership (Challenges)											
<i>I believe that the challenges that hinders school leadership as a factor to improve school performance are...</i>											
a.	Communicating and acquiring staff buy-in when outlining the mission, vision, strategy and policies and processes	0	3	29	86	49	4.080	0.734	19.00	0.000	Reject
b.	Creating and sustaining school shared values, fairness and ethical models for behaviour at all levels	0	1	31	75	58	4.150	0.740	19.95	0.000	Reject
c.	Establishing school culture of trust and integrity	0	0	28	83	54	4.160	0.691	21.50	0.000	Reject
d.	Encouraging a school-wide commitment to quality	0	8	16	80	61	4.180	0.798	18.90	0.000	Reject
e.	Ensuring that school leaders at all levels are positive examples to staff	0	2	23	81	59	4.190	0.717	21.40	0.000	Reject
f.	Providing school staff with the required resources, training and authority to act with accountability.	0	8	17	78	64	4.190	0.806	19.00	0.000	Reject
g.	Inspiring, encouraging and recognising school staff contribution.	0	2	22	75	65	4.240	0.727	21.80	0.000	Reject

Figure 4.23 illustrates the Likert scale analysis in chart form.

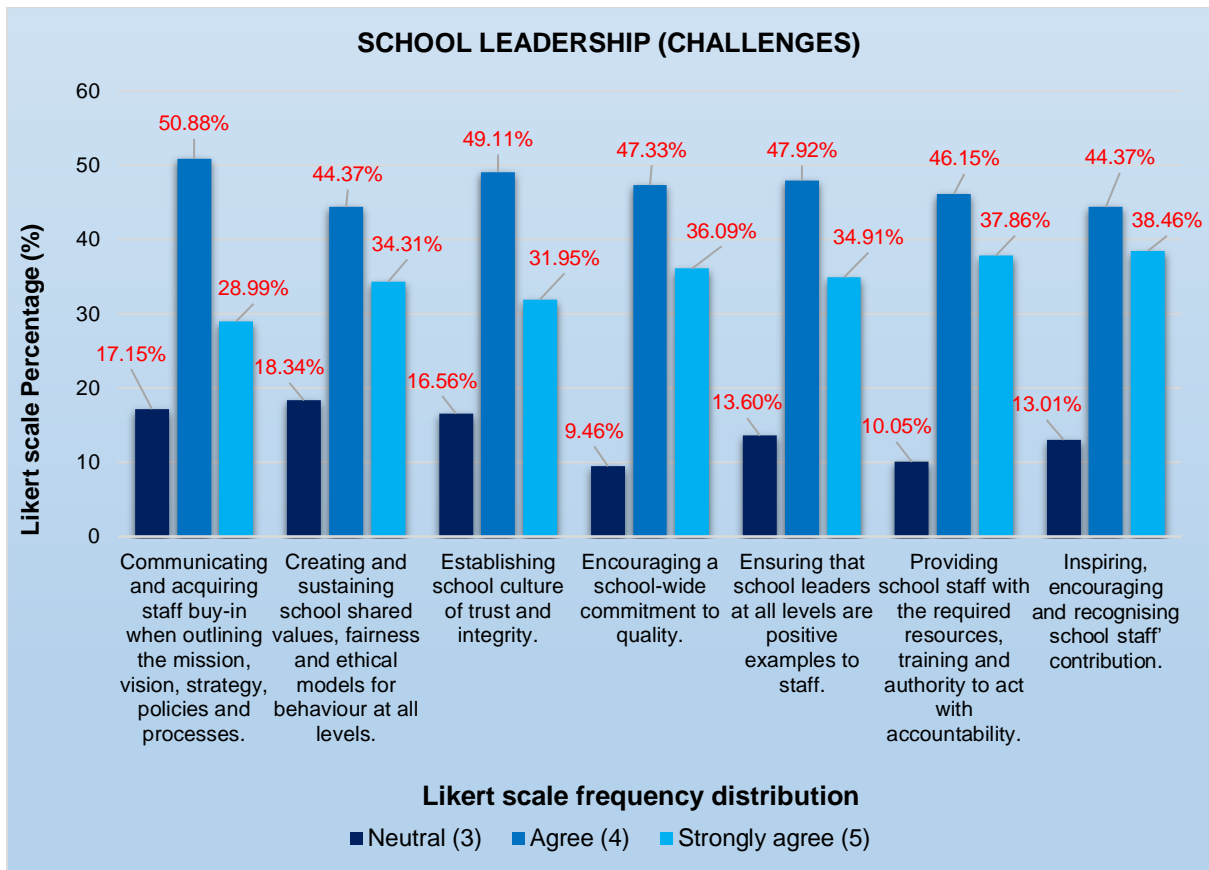


Figure 4.23: Likert scale frequency distribution of school leadership (Challenges)

As shown in Table 4.25, on the variable that states, *I believe that the challenges that hinders school leadership as a factor to improve school performance are*, a one-sample t-test shows that the overall mean score of 4.170 (std. dev. = 0.741) is statistically significant from the mid-point of 3 ($t = 20.22$, prob. = 0.000). As a result, respondents ($n = 169$) believed that the challenges that hinder school leadership as a factor are communicating and acquiring staff buy-in when outlining the mission, vision, strategy, policies and processes, creating and sustaining school shared values, fairness and ethical models for behaviour at all levels, establishing school culture of trust and integrity, encouraging a school-wide commitment to quality, ensuring that school leaders at all levels are positive examples to staff, providing school staff with the required resources, training and authority to act with accountability, and inspiring, encouraging and recognising school staff contribution.

Therefore, the overall mean score is greater than 3 (neutral), hence the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Therefore, the results shown in Figure 4.23 indicate that respondents ($n = 169$) agreed with the statements of school leadership challenges. Consequently, the statements of school leadership challenges contribute constructively

towards achieving the primary research objective, and contribute constructively towards answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of school leadership principle (factor) is 4.200. The next section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (reject/accept), in respect of the benefits and challenges of engagement of school staff principle (factor).

4.5.1.2 Factor 2: Engagement of school staff

Table 4.26: Frequency distribution of engagement of school staff (Benefits)

Engagement of School Staff	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Engagement of School Staff (Benefits)										
<i>My understanding of the benefits of engagement of school staff as a factor to improve school performance can benefit the school by...</i>										
a. Improving an understanding of school quality objectives by staff and increasing motivation to achieve them	2	6	29	90	40	3.960	0.819	15.10	0.000	Reject
b. Enhancing involvement of staff in improving school activities	0	4	26	85	54	4.120	0.749	19.40	0.000	Reject
c. Enhancing school individual developments, initiatives and creativity	2	6	35	78	46	3.960	0.862	14.30	0.000	Reject
d. Enhancing school staff satisfaction	2	4	38	75	48	3.980	0.852	14.80	0.000	Reject
e. Enhancing trust and collaboration	5	5	31	81	45	3.930	.922	13.00	0.000	Reject
f. Increasing attention to share school values and culture	3	2	25	92	45	4.040	0.797	16.90	0.000	Reject
g. Enhances the ability to focus effort on key processes and opportunities for improvement	3	4	30	78	52	4.030	0.870	15.30	0.000	Reject

The Likert scale results are graphically presented and synthesised in Figure 4.24 for a better illustration.

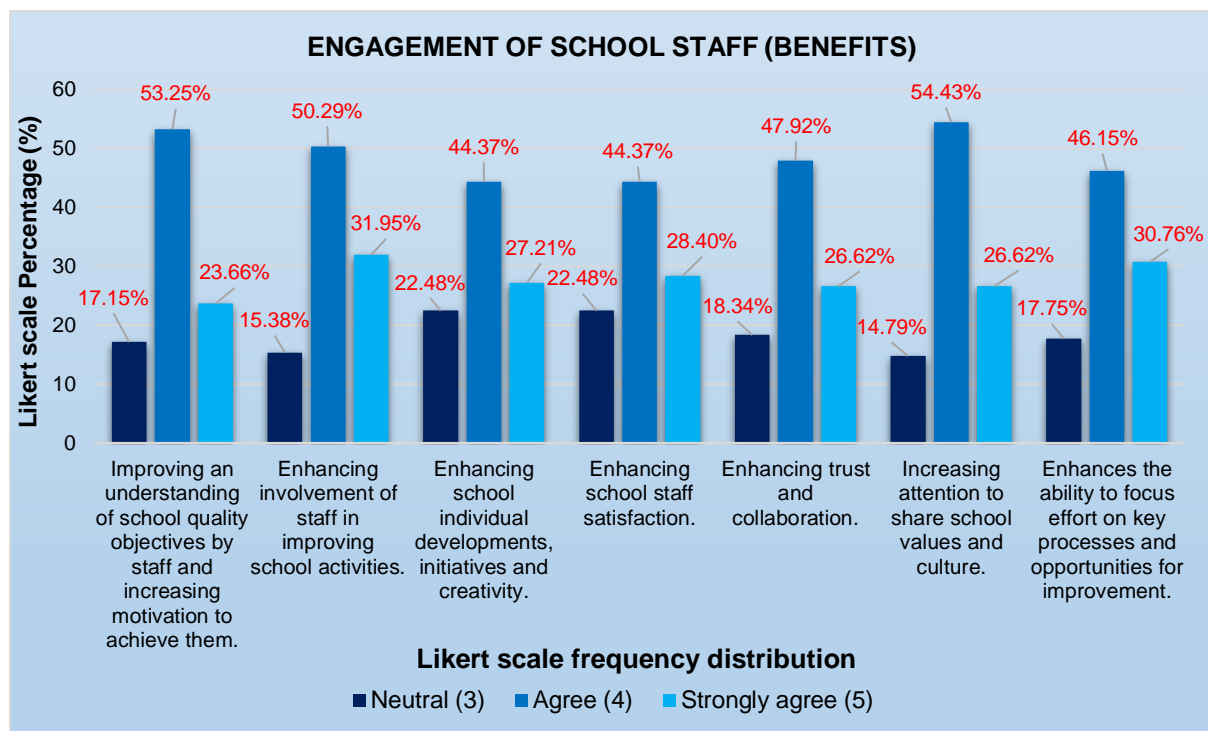


Figure 4.24: Likert scale frequency distribution of engagement of school staff (Benefits)

As illustrated in Table 4.26, on the variable that states, *My understanding of the benefits of engagement of school staff as a factor to improve school performance can benefit the school by*, a one-sample t-test shows that the overall mean score of 4.003 (std. dev. = 0.839) is statistically significant from the mid-point of 3 ($t = 15.54$, $prob. = 0.000$). Accordingly, the respondents' ($n = 169$) understanding is that the benefits of engagement of school staff as a factor are improving an understanding of school quality objectives by staff and increasing motivation to achieve them, enhancing involvement of staff in improving school activities, enhancing school individual developments, initiatives and creativity, enhancing school staff satisfaction, enhancing trust and collaboration, increasing attention to share school values and culture, and enhancing the ability to focus efforts on key processes and opportunities for improvement.

As a result, the overall mean score is greater than 3 (neutral), showing that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results displayed in Figure 4.24 indicate that respondents ($n = 169$) agreed with the statements of engagement of school staff benefits. Therefore, the statements of engagement of school staff benefits contribute

constructively towards achieving the primary research objective, and answering the main research question of this study.

Table 4.27: Frequency distribution of engagement of school staff (Challenges)

Engagement of School Staff	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Engagement of School Staff (Challenges)										
<i>My understanding of the challenges that affect engagement of school staff as a factor to improve school performance are...</i>										
a. Communicating with school staff to promote understanding of the importance of their individual contribution	3	7	31	100	26	3.830	0.806	13.30	0.000	Reject
b. Promoting collaboration throughout the school	3	3	32	87	42	3.970	0.827	15.10	0.000	Reject
c. Facilitating open discussion and sharing of school knowledge and experience	1	4	45	84	33	3.860	0.778	14.30	0.000	Reject
d. Empowering school staff to determine constraints to performance and to take initiatives without fear	0	7	39	89	32	3.870	0.764	14.70	0.000	Reject
e. Recognising and acknowledging school staff contribution, learning and improvement	0	5	42	84	38	3.920	0.769	15.40	0.000	Reject
f. Enabling self-evaluation of performance against personal objectives	0	8	40	81	38	3.890	0.809	14.20	0.000	Reject
g. Conducting surveys to assess school staff satisfaction, communicating results, and taking appropriate	2	4	40	91	29	3.850	0.778	14.00	0.000	Reject

Engagement of School Staff	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Engagement of School Staff (Challenges)										
<i>My understanding of the challenges that affect engagement of school staff as a factor to improve school performance are...</i>										
actions										

The Likert scale results are demonstrated and presented in Figure 4.25 for a better illustration.

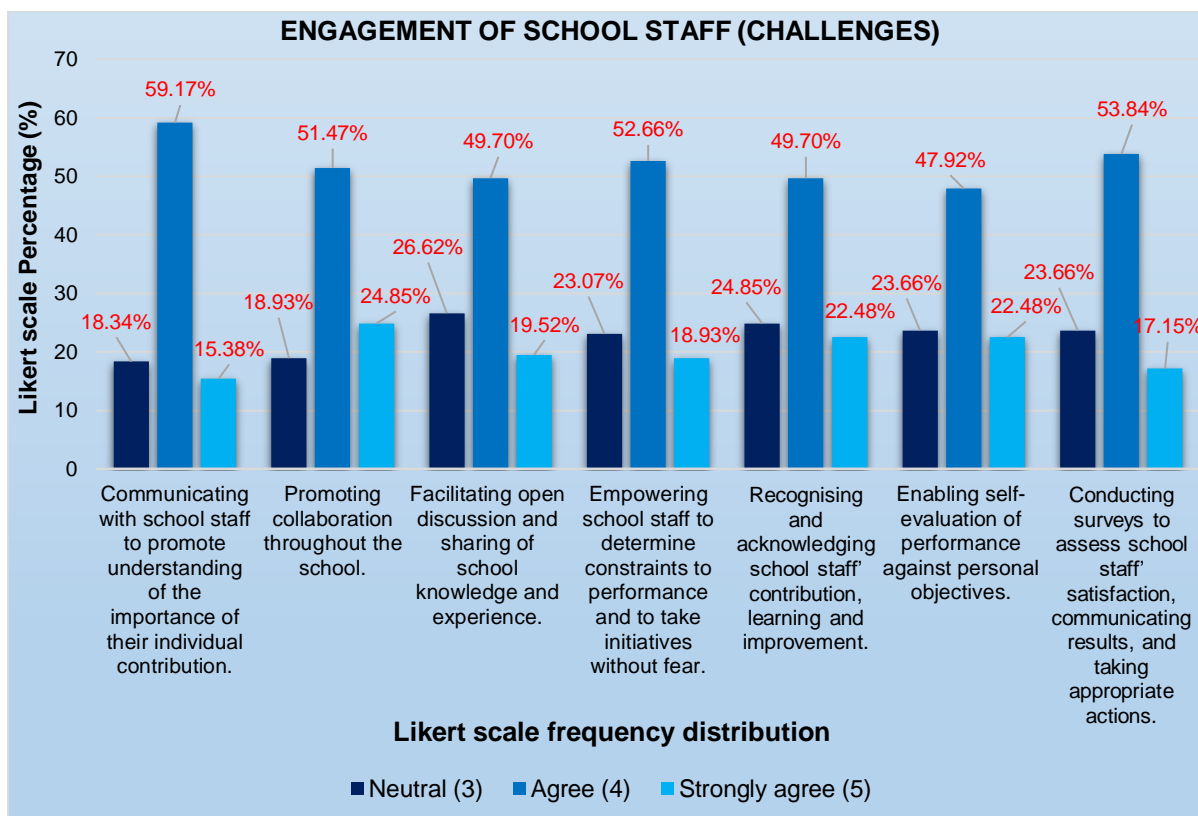


Figure 4.25: Likert scale frequency distribution of Engagement of school staff (Challenges)

As demonstrated in Table 4.27, on the variable that states, *My understanding of the challenges that affect engagement of school staff as a factor to improve school performance are*, a one-sample t-test indicates that the overall mean score of 3.884 (std. dev. = 0.790) is statistically significant from the mid-point of 3 ($t = 14.43$, prob. = 0.000). Therefore, the respondents' ($n = 169$) understanding is that the challenges that affect engagement of school staff as a factor are communicating with school staff to promote understanding of the importance of their individual contribution, promoting collaboration throughout the school, facilitating open discussion and sharing of school knowledge and experience, empowering school staff to determine constraints to performance and to take initiatives without fear, recognising and acknowledging school staff contribution, learning and improvement,

enabling self-evaluation of performance against personal objectives, and conducting surveys to assess school staff satisfaction, communicating results, and taking appropriate actions.

Consequently, the overall mean score is greater than 3 (neutral), indicating that the t-test results show that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results demonstrated in Figure 4.25 indicate that respondents (n = 169) agreed with the statements of engagement of schools' staff challenges. As a result, the statements of engagement of school staff challenges contribute significantly towards achieving the primary research objective and contribute significantly towards answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of engagement of school staff principle (factor) is 3.944. The following section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (reject/accept), in respect of the benefits and challenges of evidence-based decision-making in schools (Factor).

4.5.1.3 Factor 3: Evidence-based decision-making in schools

Table 4.28: Frequency distribution of evidence-based decision-making in schools (Benefits)

Evidence-based Decision-making in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Evidence-based Decision-making in Schools (Benefits)										
<i>My understanding is that the benefits of evidence-based decision-making in schools as a factor to improve school performance are to...</i>										
a. Improve decision-making processes in schools	0	1	30	99	36	4.020	0.653	20.20	0.000	Reject
b. Improve assessments of school process performance and ability to achieve school objectives.	0	1	36	77	54	4.100	0.746	19.00	0.000	Reject
c. Improve school operational effectiveness and efficiency	0	3	45	65	52	4.010	0.818	15.80	0.000	Reject
d. Increase the ability to review,										

Evidence-based Decision-making in Schools		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Evidence-based Decision-making in Schools (Benefits)											
<i>My understanding is that the benefits of evidence-based decision-making in schools as a factor to improve school performance are to...</i>											
	challenge and change school opinions and decisions.	0	6	38	70	53	4.020	0.835	15.70	0.000	Reject
e.	Increase the ability to demonstrate the effectiveness of past school decisions	0	5	33	87	40	3.980	0.755	16.70	0.000	Reject

The Likert scale results are presented in Figure 4.26 and explained narratively to provide a greater insight into the analysis.

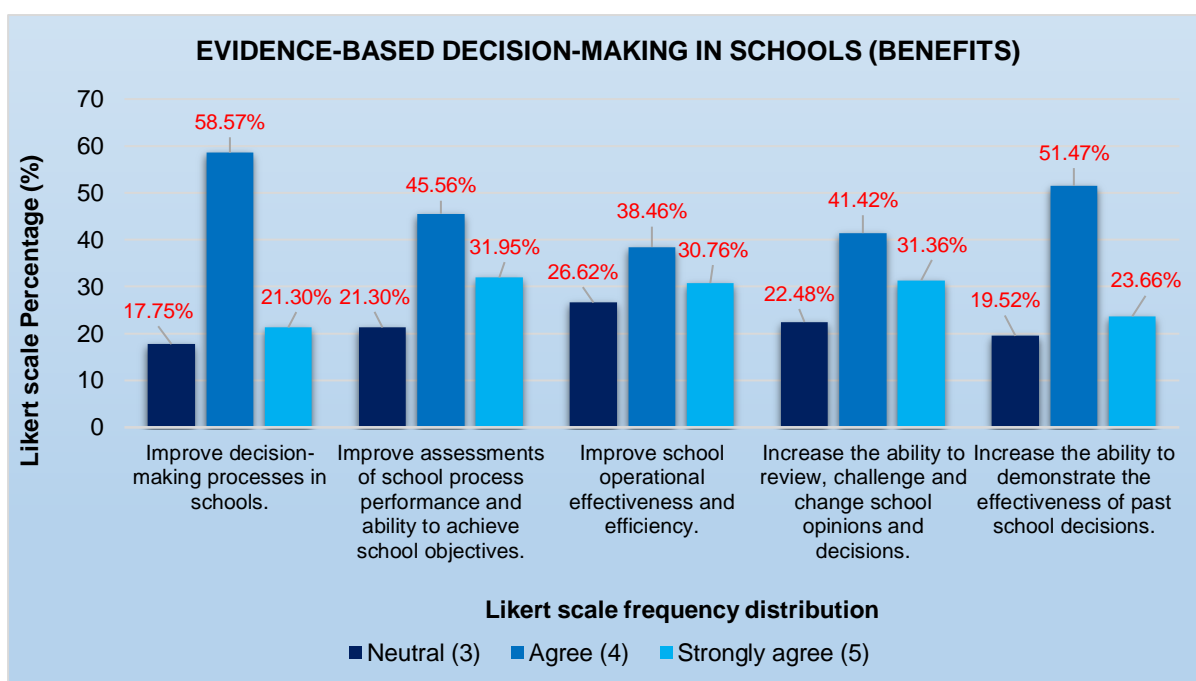


Figure 4.26: Likert scale frequency distribution of Evidence-based decision-making in schools (Benefits)

As demonstrated in Table 4.28, on the variable that refers to, *My understanding is that the benefits of evidence-based decision-making in schools as a factor to improve school performance are to*, a one-sample t-test indicates that the overall mean score of 4.026 (std. dev. = 0.761) is statistically significant from the mid-point of 3 ($t = 17.48$, prob. = 0.000). Consequently, the respondents' ($n = 169$) view is that the benefits of evidence-based

decision-making in schools as a factor are to improve decision-making processes in schools, improve assessments of school process performance and the ability to achieve school objectives, improve school operational effectiveness and efficiency, increase the ability to review, challenge and change school opinions and decisions, and increase the ability to demonstrate the effectiveness of past school decisions.

As a result, the overall mean score is greater than 3 (neutral). Therefore, the t-test results display that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Therefore, the results depicted in Figure 4.26 indicate that respondents (n = 169) agreed with the statements of evidence-based decision-making in schools' benefits. Accordingly, the statements of evidence-based decision-making in schools benefits contribute constructively towards achieving the primary research objective and contribute constructively towards answering the main research question of this study.

Table 4.29: Frequency distribution of evidence-based decision-making in schools (Challenges)

Evidence-based Decision-making in Schools		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Evidence-based Decision-making in Schools (Challenges)											
<i>My understanding is that the challenges that hinder evidence-based decision-making in schools as a factor to improve school performance is...</i>											
a.	Determining, measuring and monitoring key school indicators to demonstrate school performance	0	7	56	86	18	3.690	0.721	12.30	0.000	Reject
b.	Making all school data needed available to the relevant school staff	0	5	36	92	32	3.920	0.730	16.10	0.000	Reject
c.	Ensuring that school data and information are sufficiently accurate, reliable and secure	0	9	42	75	43	3.900	0.845	13.70	0.000	Reject
d.	Analysing and evaluating school data and	0	12	35	93	27	3.810	0.793	13.10	0.000	Reject

Evidence-based Decision-making in Schools		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Evidence-based Decision-making in Schools (Challenges)											
<i>My understanding is that the challenges that hinder evidence-based decision-making in schools as a factor to improve school performance is...</i>											
	information using suitable methods										
e.	Ensuring that school staff are competent to analyse and evaluate school data and information as needed	0	8	43	83	33	3.840	0.794	13.70	0.000	Reject
f.	Making school decisions and taking actions based on evidence	0	8	45	78	36	3.850	0.814	13.50	0.000	Reject

The Likert scale results are presented in chart form in Figure 4.27 and further discussed to provide a greater insight into the analysis.

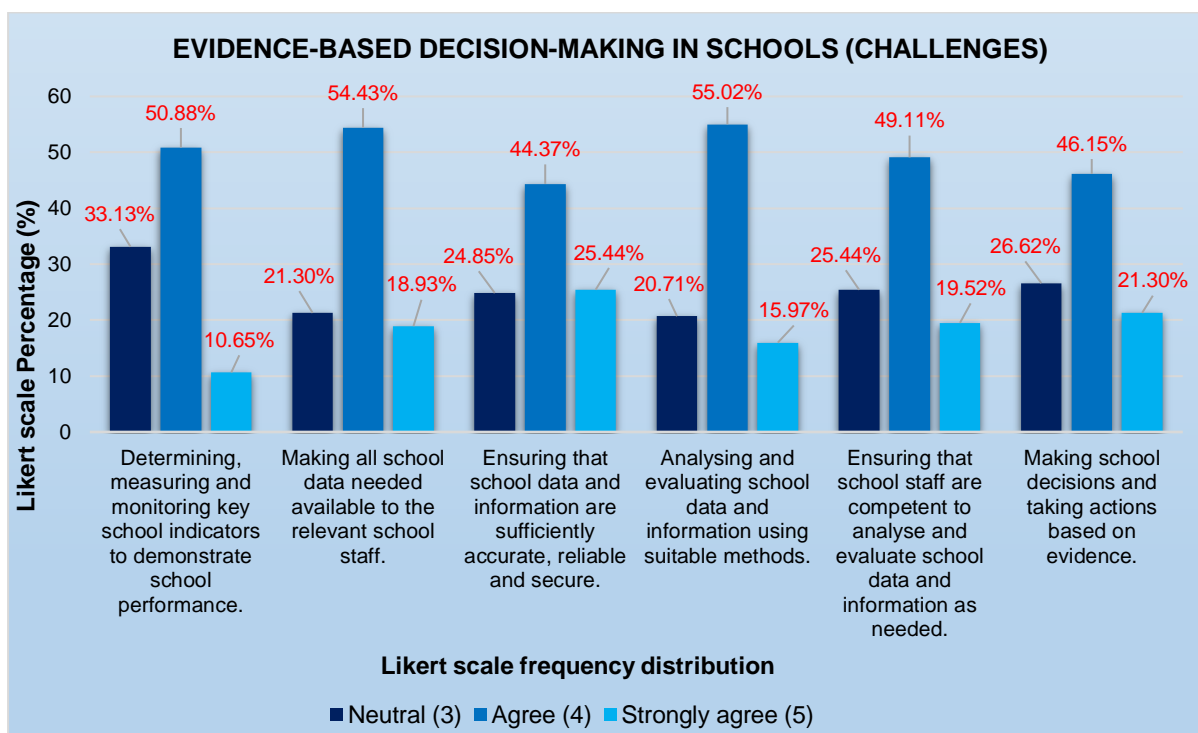


Figure 4.27: Likert scale frequency distribution of Evidence-based decision-making in schools (Challenges)

As displayed in Table 4.29, on the variable that states, *My understanding is that the challenges that hinder evidence-based decision-making in schools as a factor to improve school performance is*”, a one-sample t-test indicates that the overall mean score of 3.835 (std. dev. = 0.782) is statistically significant from the mid-point of 3 ($t = 13.73$, prob. = 0.000). Therefore, respondents ($n = 169$) understand that the challenges of evidence-based decision-making in schools as a factor are determining, measuring and monitoring key school indicators to demonstrate school performance, making all school data needed available to the relevant school staff, ensuring that school data and information are sufficiently accurate, reliable and secure, analysing and evaluating school data and information using suitable methods, ensuring that school staff are competent to analyse and evaluate school data and information as needed, and making school decisions and taking actions based on evidence.

Therefore, the overall mean score is greater than 3 (neutral). As a result, the t-test results display that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Therefore, the results displayed in Figure 4.27 indicate that respondents ($n = 169$) agreed with the statements of evidence-based decision-making in schools challenges. The statements of evidence-based decision-making in schools challenges contribute significantly towards achieving the primary research objective and answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of evidence-based decision-making in schools’ principle (Factor) is 3.931. The following section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (Reject/accept) in respect of the benefits and challenges of school relationship management principle (Factor).

4.5.1.4 Factor 4: School relationship management

Table 4.30: Frequency distribution of school relationship management (Benefits)

School Relationship Management	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
School Relationship Management (Benefits)										
<i>I believe that the benefits of school relationship management as a factor to improve school performance can be achieved when...</i>										
a. Enhancing performance of the school and its stakeholders										

School Relationship Management		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
School Relationship Management (Benefits)											
<i>I believe that the benefits of school relationship management as a factor to improve school performance can be achieved when...</i>											
a.	through responding to the school opportunities and constraints related to each stakeholder	1	1	43	106	18	3.820	0.641	16.60	0.000	Reject
b.	Promoting common understanding of school objectives and values among school stakeholders	0	5	32	105	25	3.900	0.675	17.10	0.000	Reject
c.	Increasing capability to create value for school stakeholders by sharing resources and competence and managing school quality-related risks	1	2	41	92	31	3.900	0.727	15.90	0.000	Reject

Figure 4.28 illustrates the Likert scale analysis in chart form.

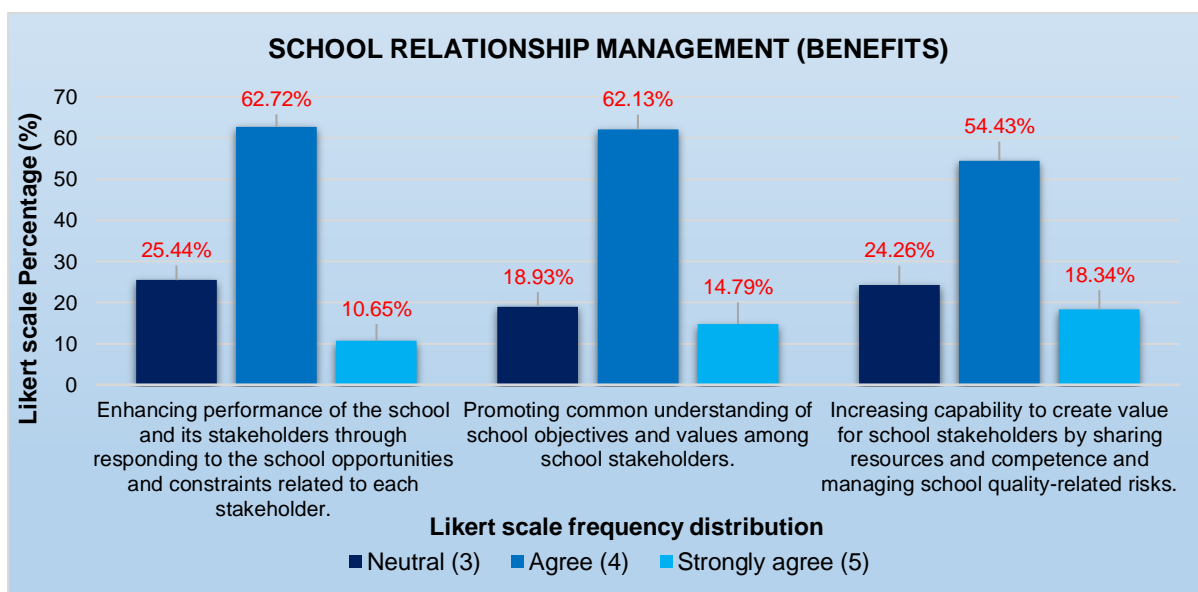


Figure 4.28: Likert scale frequency distribution of School relationship management (Benefits)

From Table 4.30, on the variable that states, *I believe that the benefits of school relationship management as a factor to improve school performance can be achieved when*, a one-sample t-test points out that the overall mean score of 3.873 (std. dev. = 0.291) is statistically significant from the mid-point of 3 ($t = 16.53$, prob. = 0.000). Table 4.30 shows that the respondents ($n = 169$) believe that the benefits of school relationship management as a factor are enhancing performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder, promoting common understanding of school objectives and values among school stakeholders, and increasing capability to create value for school stakeholders by sharing resources and competence, and managing school quality-related risks.

Therefore, the overall mean score is greater than 3 (neutral), pointing out that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results illustrated in Figure 4.28 indicate that respondents ($n = 169$) agreed with the statements of school relationship management benefits. Therefore, the statements of school relationship management benefits contribute significantly towards achieving the primary research objective and answering the main research question of this study.

Table 4.31: Frequency distribution of school relationship management (Challenges)

School Relationship Management	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
School Relationship Management (Challenges)										
<i>I believe that the challenges of school relationship management as a factor to improve school performance that are experienced in schools are...</i>										
a. Establishing school relationships that balance short-term gains with long-term considerations	1	3	46	92	27	3.830	0.731	14.80	0.000	Reject
b. Pooling and sharing information, expertise and resources with relevant school stakeholders	0	4	41	81	41	3.950	0.769	15.90	0.000	Reject
c. Measuring school performance and providing performance feedback to school	0	5	46	85	31	3.850	0.752	14.60	0.000	Reject

School Relationship Management	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept	
School Relationship Management (Challenges)											
<i>I believe that the challenges of school relationship management as a factor to improve school performance that are experienced in schools are...</i>											
	stakeholders, as appropriate, to enhance school improvement activities										
d.	Establishing collaborative development and improvement activities with partners and school stakeholders	0	8	44	5	30	3.820	0.781	13.50	0.000	Reject
e.	Determining and prioritising school stakeholder relationships that need to be managed	0	4	44	85	34	3.890	0.747	15.40	0.000	Reject

The Likert scale results are graphically presented in Figure 4.29 for better illustration.

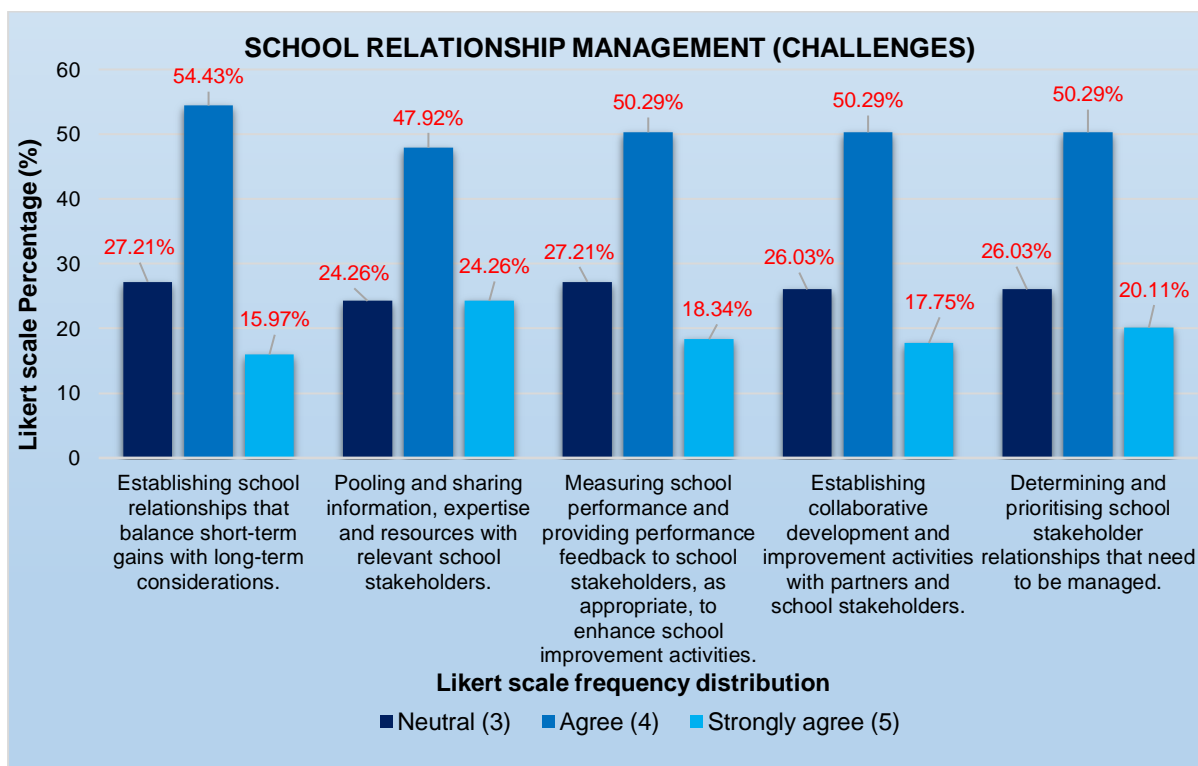


Figure 4.29: Likert scale frequency distribution of School relationship management (Challenges)

From Table 4.31, on the variable that states, *I believe that the challenges of school relationship management as a factor to improve school performance that are experienced in schools are*, a one-sample t-test points out that the overall mean score of 3.868 (std. dev. = 0.756) is statistically significant from the mid-point of 3 ($t = 14.84$, prob. = 0.000). Table 4.31 points out that the respondents ($n = 169$) believe that the challenges of school relationship management as a factor are determining and prioritising school stakeholder relationships that need to be managed, establishing school relationships that balance short-term gains with long-term considerations, pooling and sharing information, expertise and resources with relevant school stakeholders, measuring school performance and providing performance feedback to school stakeholders, as appropriate, to enhance school improvement activities, and establishing collaborative development and improvement activities with partners and school stakeholders.

As a result, the overall mean score is greater than 3 (neutral), pointing out that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Consequently, the results shown in Figure 4.29 indicate that respondents ($n = 169$) agreed with the statements of school relationship management challenges. Accordingly, the statements of school relationship management challenges contribute significantly towards achieving the primary research objective and answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of the school relationship management principle (Factor) is 3.871. The next section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (reject/accept), in respect of the benefits and challenges of the principle of the process approach in schools (factor).

4.5.1.5 Factor 5: Process approach in schools

Table 4.32: Frequency distribution of the process approach in schools (Benefits)

Process Approach in Schools		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Process Approach in Schools (Benefits)											
<i>I believe that the benefits of the process approach in schools as a factor to improve school performance is to...</i>											
a.	Enhance the school's ability to focus effort	0	2	35	113	19	3.880	0.597	19.10	0.000	Reject

Process Approach in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Process Approach in Schools (Benefits)										
<i>I believe that the benefits of the process approach in schools as a factor to improve school performance is to...</i>										
on key processes and opportunities for school improvement										
b. Provide consistence and predictable school outcomes through a system of aligned processes	0	7	32	104	24	3.870	0.701	15.90	0.000	Reject
c. Optimise school performance through effective process management efficient use of school resources, and reduced cross-functional barriers	0	7	31	99	30	3.910	0.729	16.10	0.000	Reject
d. Enable the school to provide confidence to school stakeholders as to its consistency, effectiveness and efficiency	0	7	37	93	30	3.870	0.748	15.00	0.000	Reject

The Likert scale results are demonstrated and presented in Figure 4.30 for better illustration.

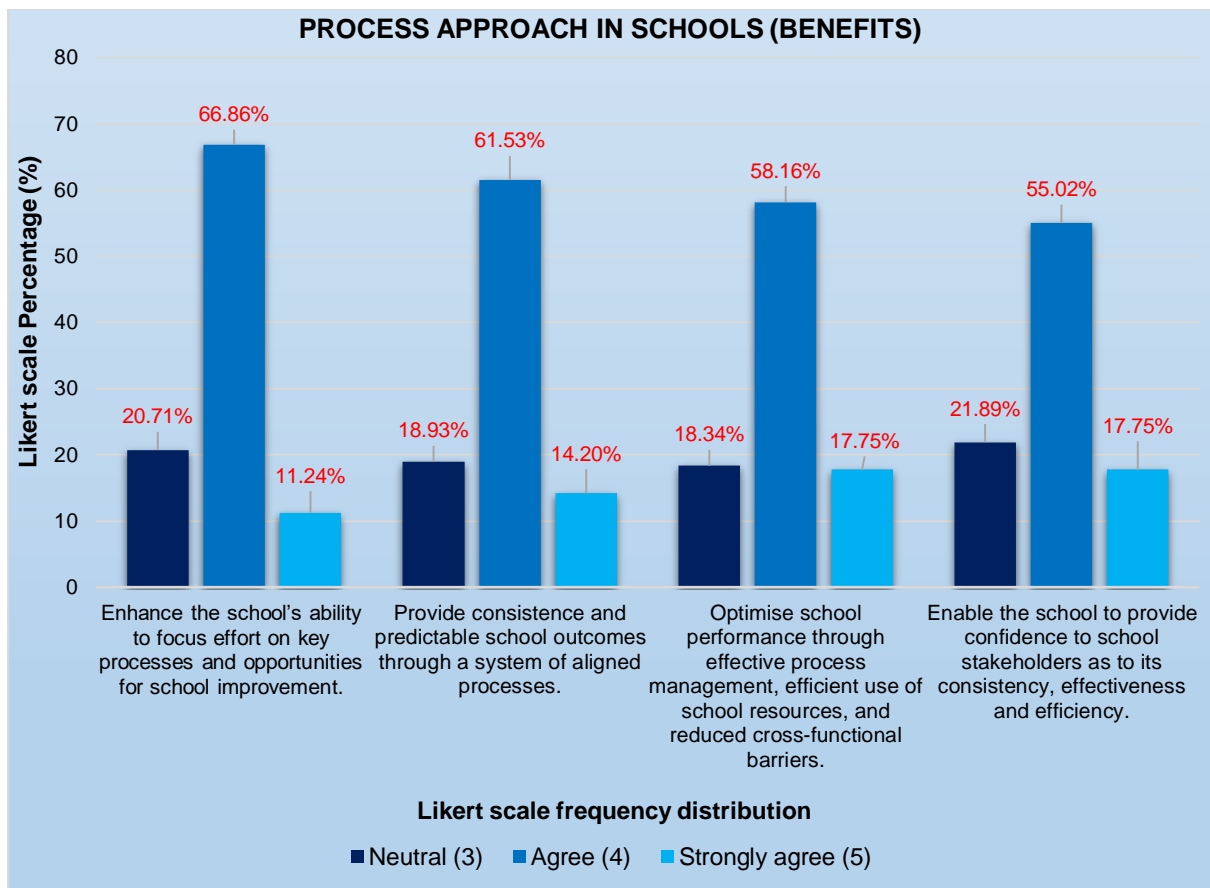


Figure 4.30: Likert scale frequency distribution of the Process approach in schools (Benefits)

As displayed in Table 4.32, on the variable that states, *I believe that the benefits of the process approach in schools as a factor to improve school performance is to*, a one-sample t-test indicates that the overall mean score of 3.883 (std. dev. = 0.694) is statistically significant from the mid-point of 3 ($t = 16.53$, prob. = 0.000). For this reason, respondents ($n = 169$) believe that the benefits of the process approach in schools as a factor are enhancing the school's ability to focus efforts on key processes and opportunities for school improvement, providing consistency and predictable school outcomes through a system of aligned processes, optimising school performance through effective process management, efficient use of school resources, and reduced cross-functional barriers, and enabling the school to provide confidence to school stakeholders regarding its consistency, effectiveness and efficiency.

The overall mean score is greater than 3 (neutral). Therefore, the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results displayed in Figure 4.30 indicate that respondents ($n = 169$) agreed with the statements of the process approach in schools'

benefits. As a result, the statements of the process approach in schools' benefits contribute significantly towards achieving the primary research objective and answering the main research question of this study.

Table 4.33: Frequency distribution of the process approach in schools (Challenges)

Process Approach in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Process Approach in Schools (Challenges)										
<i>I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to...</i>										
a. Define school objectives of the system and processes necessary to achieve them	0	11	50	85	21	3.690	0.776	11.50	0.000	Reject
b. Establish authority, responsibility and accountability for managing school processes	0	11	50	76	32	3.760	0.835	11.80	0.000	Reject
c. Understanding the school's capabilities and determining resource constraints prior to action	0	8	52	75	32	3.780	0.810	12.50	0.000	Reject
d. Determine school process interdependencies and analyse the effect of modifications to individual school processes on the system as a whole	0	8	52	80	27	3.750	0.782	12.40	0.000	Reject
e. Manage school processes and their interrelations as a system to achieve school quality objectives effectively and efficiently	0	6	39	97	25	3.840	0.713	15.20	0.000	Reject
f. Ensure the necessary school information is available to operate and improve school processes	0	10	33	93	31	3.870	0.783	14.30	0.000	Reject
g. Manage risks that can affect school										

Process Approach in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Process Approach in Schools (Challenges)										
<i>I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to...</i>										
outputs processes and overall school outcomes of quality management	0	7	38	100	22	3.820	0.707	14.90	0.000	Reject

The Likert scale results are presented in Figure 4.31 and narratively discussed.

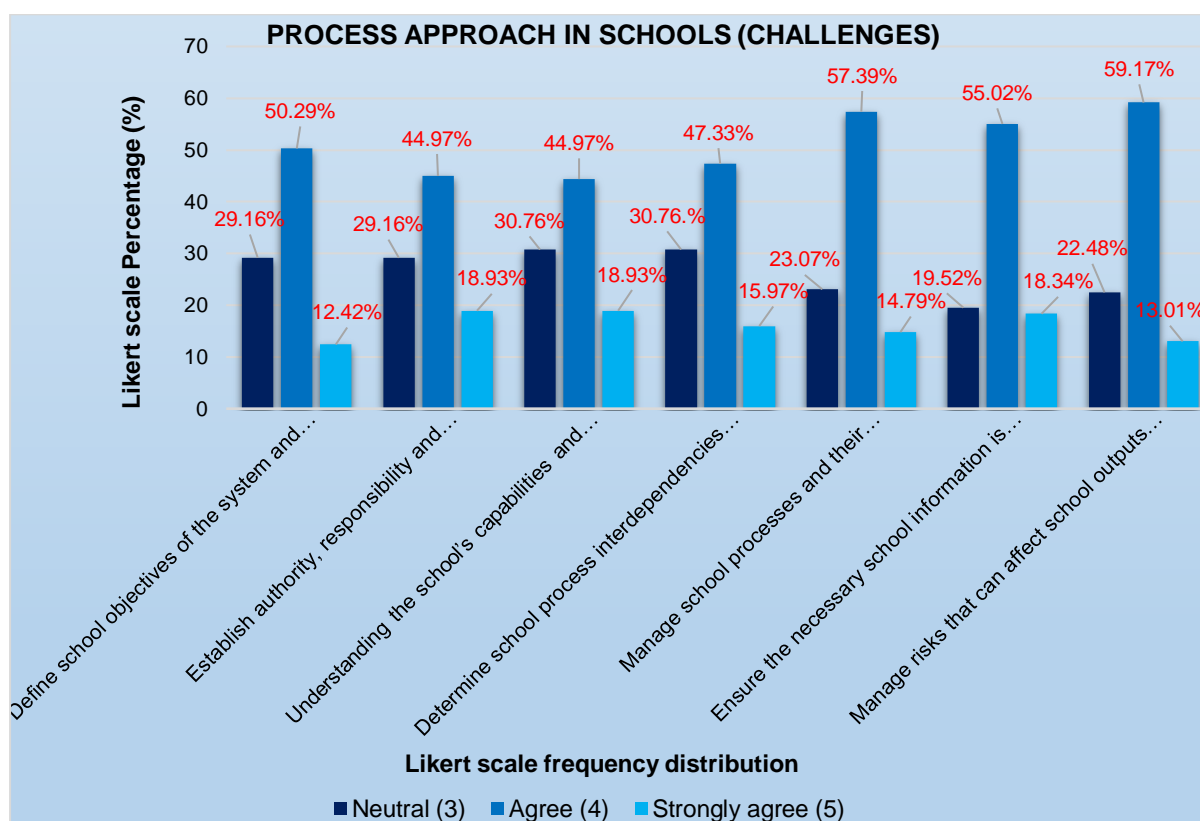


Figure 4.31: Likert scale frequency distribution of the Process approach in schools (Challenges)

As indicated in Table 4.33, on the variable that states, *I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to*”, a one-sample t-test shows that the overall mean score of 3.787 (std. dev. = 0.772) is statistically significant from the mid-point of 3 ($t = 13.23$, prob. = 0.000). Consequently, respondents ($n = 169$) believe that the challenges of the process approach in schools as a factor are defining the school objectives of the system and the processes necessary to achieve them, establishing authority, responsibility and accountability for managing school processes, understanding the school’s capabilities and determining

resource constraints prior to action, determining school process interdependencies and analysing the effect of modifications to individual school processes on the system as a whole, managing school processes and their interrelation as a system to achieve school quality objectives effectively and efficiently, ensuring the necessary school information is available to operate and improve school processes, and managing risks that can affect school output processes and overall school outcomes of quality management.

Therefore, the overall mean score is greater than 3 (neutral), meaning that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results depicted in Figure 4.31 indicate that respondents (n = 169) agreed with the statements of the process approach in schools' challenges. The statements of the process approach in schools' challenges contribute significantly towards achieving the primary research objective and answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of the process approach in schools' principle (Factor) is 3.835. The following section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test and the significance (reject/accept), in respect of the benefits and challenges of improvement of operational school activities principle (Factor).

4.5.1.6 Factor 6: Improvement of operational school activities

Table 4.34: Frequency distribution of improvement of operational school activities (Benefits)

Improvement of Operational School Activities	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Improvement of Operational School Activities (Benefits)										
<i>I believe that the benefits of improvement of operational school activities as a factor to improve school performance can be achieved through...</i>										
a. Improving process performance, school capabilities and customer satisfaction	0	6	45	93	23	3.800	0.718	4.30	0.000	Reject
b. Enhancing focus on identifying the root-cause investigation and determination	1	9	42	90	27	3.790	0.798	12.80	0.000	Reject

Improvement of Operational School Activities	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Improvement of Operational School Activities (Benefits)										
<i>I believe that the benefits of improvement of operational school activities as a factor to improve school performance can be achieved through...</i>										
c. Enhancing the ability to anticipate and react to internal and external school risks and opportunities	0	5	1	90	21	3.760	0.707	3.80	0.000	Reject
d. Improving the use of learning for improvement	1	14	33	93	26	3.770	0.836	1.90	0.000	Reject
e. Enhancing drive for innovation	0	10	42	90	25	3.780	0.774	12.90	0.000	Reject

The Likert scale results are presented in chart form in Figure 4.32.

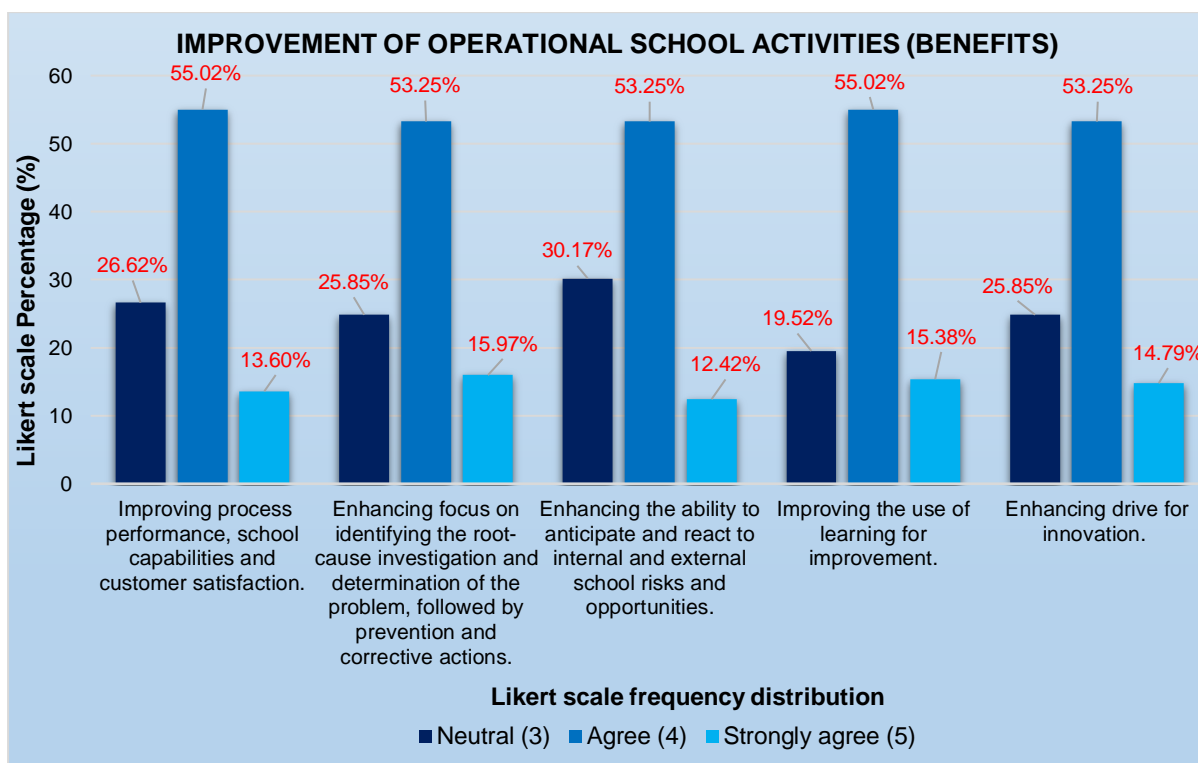


Figure 4.32: Likert scale frequency distribution of improvement of operational school activities (Benefits)

Based on Table 4.34, on the variable that states, *I believe that the benefits of improvement of operational school activities as a factor to improve school performance can be achieved through*, a one-sample t-test points out that the overall mean score of 3.780 (std. dev. = 0.767) is statistically significant from the mid-point of 3 ($t = 13.14$, prob. = 0.000). Table 4.34 indicates that respondents ($n = 169$) believe that the benefits of improvement of operational school activities as a factor are improving process performance, school capabilities and customer satisfaction, enhancing focus on identifying the root-cause investigation and determination of the problem, followed by prevention and corrective actions, enhancing the ability to anticipate and react to internal and external school risks and opportunities, improving the use of learning for improvement, and enhancing drive for innovation.

The overall mean score is greater than 3 (neutral), pointing out that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results illustrated in Figure 4.32 point out that respondents ($n = 169$) agreed with the statements of improvement of operational school activities' benefits. Therefore, the statements of improvement of operational school activities' benefits contribute significantly towards achieving the primary research objective and answering the main research question of this study.

Table 4.35: Frequency distribution of improvement of operational school activities (Challenges)

Improvement of Operational School Activities	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Improvement of Operational School Activities (Challenges)										
<i>I believe that the challenges of improvement of operational school activities as a factor to improve school performance that hinder performance improvement are...</i>										
a. Promoting establishment of improvement objectives at all school levels	0	13	49	74	31	3.740	.854	1.10	0.000	Reject
b. Educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives	0	11	45	75	38	3.830	.855	12.50	0.000	Reject
c. Ensuring that school staff is competent to successfully promote and	2	9	44	85	27	3.750	0.834	1.60	0.000	Reject

Improvement of Operational School Activities		1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Improvement of Operational School Activities (Challenges)											
<i>I believe that the challenges of improvement of operational school activities as a factor to improve school performance that hinder performance improvement are...</i>											
	complete improvement activities										
d.	Developing and deploying processes to implement improvement activities throughout the school	2	8	52	78	27	3.720	0.837	1.00	0.000	Reject
e.	Tracking, reviewing and auditing the planning, implementation, completion and results of improvement activities	0	9	48	77	33	3.800	0.818	12.60	0.000	Reject

Figure 4.33 illustrates the Likert scale analysis in chart form for better referencing of the analysis.

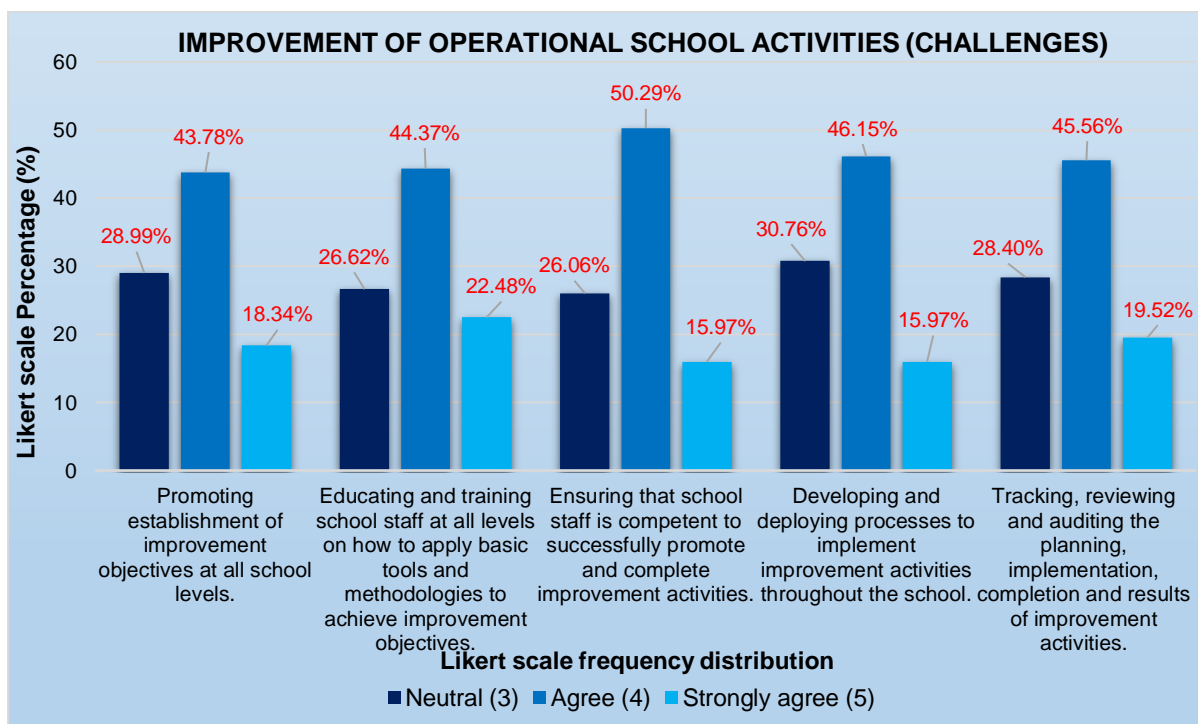


Figure 4.33: Likert scale frequency distribution of improvement of operational school activities (Challenges)

Based on Table 4.35, on the variable that states, *I believe that the challenges of improvement of operational school activities as a factor to improve school performance that hinder performance improvement are*, a one-sample t-test indicates that the overall mean score of 3.768 (std. dev. = 0.840) is statistically significant from the mid-point of 3 ($t = 11.76$, prob. = 0.000). From Table 4.35, respondents ($n = 169$) believe that the challenges that hinder improvement of operational school activities as a factor are promoting establishment of improvement objectives at all school levels, educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives, ensuring that school staff are competent to successfully promote and complete improvement activities, developing and deploying processes to implement improvement activities throughout the school, and tracking, reviewing and auditing the planning, implementation, completion and results of improvement activities.

Accordingly, the overall mean score is greater than 3 (neutral), stating that the t-test results show that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. Accordingly, the results illustrated in Figure 4.33 show that respondents ($n = 169$) agreed with the statements of improvement of operational school activities' challenges. As a result, the statements of improvement of operational school activities' challenges contribute significantly towards achieving the primary research objective and answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of improvement of operational school activities' principle (Factor) is 3.774. The next section summarises the frequency distribution on the 5-point Likert scale, mean score, standard deviation, t-test, and the significance (reject/accept), in respect of the benefits and challenges of customer focus in schools' principle (Factor).

4.5.1.7 Factor 7: Customer focus in schools

Table 4.36: Frequency distribution of customer focus in schools (Benefits)

Customer Focus In Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Customer Focus in Schools (Benefits)										
<i>My understanding is that the benefits of customer focus in schools as a factor to improve school performance can improve school performance by...</i>										
a. Increasing school customer value	0	0	28	102	38	4.060	0.628	21.80	0.000	Reject
b. Increasing school customer satisfaction	0	0	24	105	37	4.080	0.605	22.90	0.000	Reject
c. Improving school customer loyalty	0	0	31	95	41	4.060	0.658	20.80	0.000	Reject
d. Enhancing school reputation	0	0	22	101	43	4.130	0.616	23.50	0.000	Reject
e. Expanding school customer base	0	0	27	90	49	4.130	0.667	21.80	0.000	Reject

The Likert scale results are graphically presented in Figure 4.34 for a better illustration.

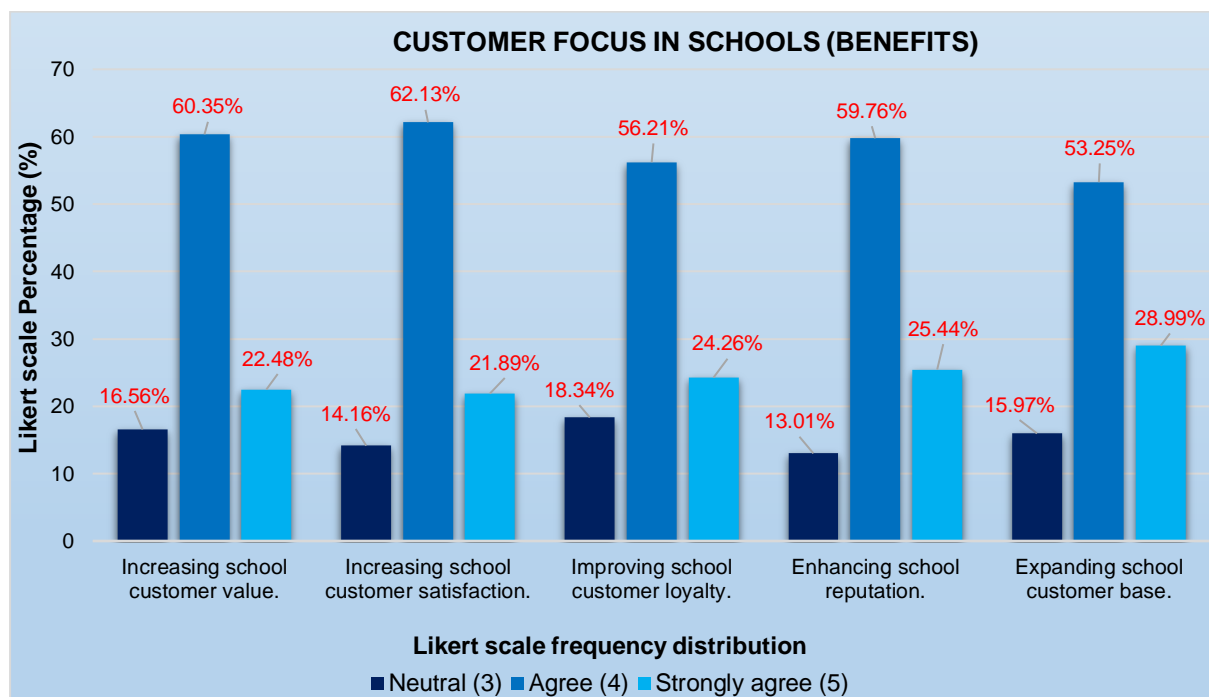


Figure 4.34: Likert scale frequency distribution of customer focus in schools (Benefits)

From Table 4.36, on the variable that states, *My understanding is that the benefits of customer focus in schools as a factor to improve school performance can improve school performance by*, a one-sample t-test points out that the overall mean score of 4.092 (std.

dev. = 0.635) is statistically significant from the mid-point of 3 ($t = 22.16$, prob. =0.000). Table 4.36 indicates that the respondents' ($n = 169$) understanding is that the benefits of customer focus in schools as a factor are increasing school customer value, increasing school customer satisfaction, improving school customer loyalty, enhancing school reputation, and expanding school customer base.

Therefore, the overall mean score is greater than 3 (neutral), showing that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results illustrated in Figure 4.34 show that respondents ($n = 169$) agreed with the statements of customer focus in schools' benefits. Therefore, the statements of customer focus in schools' benefits contribute constructively towards achieving the primary research objective and answering the main research question of this study.

Table 4.37: Frequency distribution of customer focus in schools (Challenges)

Customer Focus in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Customer focus in schools (Challenges)										
<i>My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are...</i>										
a. Recognising direct and indirect school customers as those who receive value from the school	1	0	40	104	22	3.870	0.644	7.50	0.000	Reject
b. Understanding school customers' current and future needs and expectations	0	6	47	77	37	3.870	0.798	14.00	0.000	Reject
c. Linking school objectives to school customer needs and expectations	1	0	2	83	31	3.800	0.835	2.30	0.000	Reject
d. Planning, designing, developing, delivering and supporting services to meet school customer needs and expectations	0	9	48	86	26	3.760	0.776	2.70	0.000	Reject

Customer Focus in Schools	1	2	3	4	5	Mean Score	Std. dev.	T-test	Prob.	Reject/Accept
Customer focus in schools (Challenges)										
<i>My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are...</i>										
e. Determining and taking actions on school customer needs and expectations that can affect customer satisfaction	0	7	38	92	30	3.870	0.751	14.90	0.000	Reject
f. Actively managing relationships with school customers to achieve sustained school performance	1	9	44	83	30	3.790	0.822	12.40	0.000	Reject

The Likert scale results are demonstrated and presented in Figure 4.35 for better illustration.

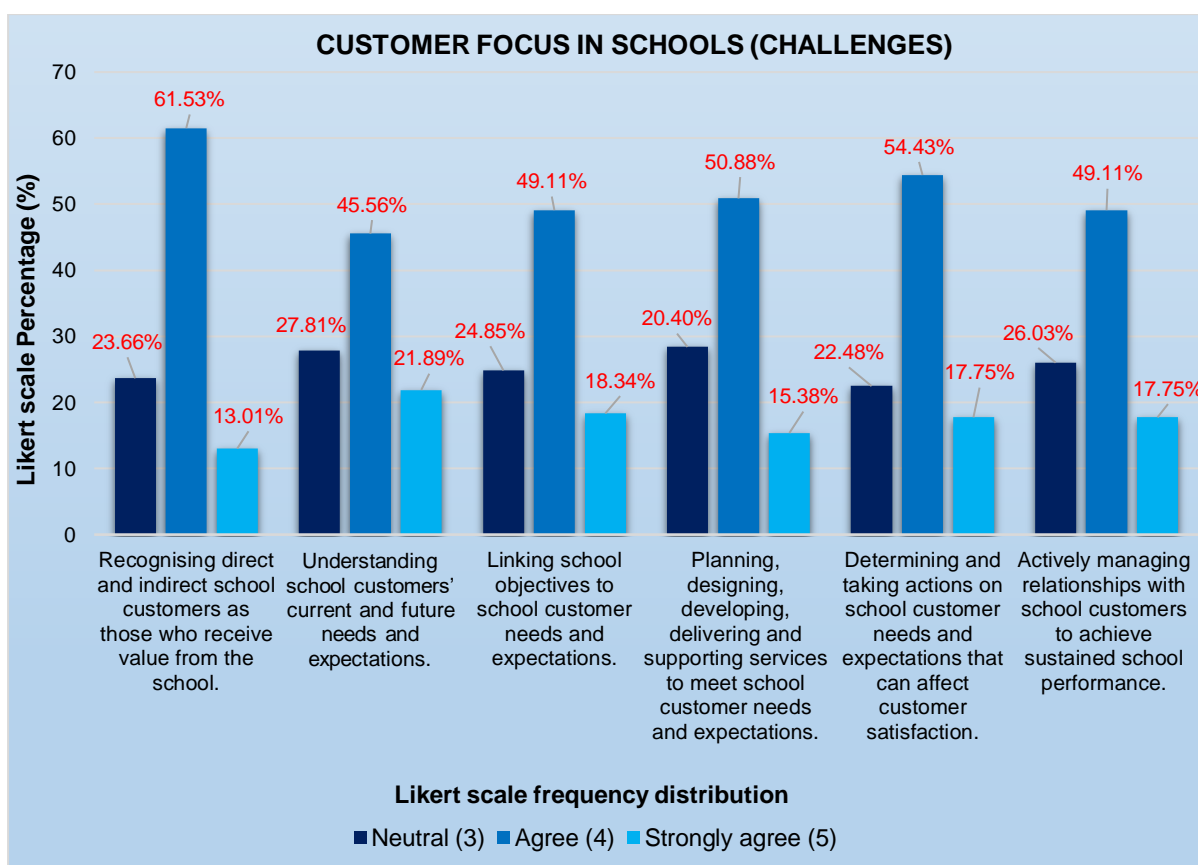


Figure 4.35: Likert scale frequency distribution of customer focus in schools (Challenges)

From Table 4.37, on the variable that states, *My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are*, a one-sample t-test points out that the overall mean score of 3.827 (std. dev. = 0.771) is statistically significant from the mid-point of 3 ($t = 13.97$, prob. = 0.000). Table 4.37 points out that respondents ($n = 169$) understand that the challenges that hinder customer focus in schools as a factor are recognising direct and indirect school customers as those who receive value from the school, understanding school customers' current and future needs and expectations, linking school objectives to school customer needs and expectations, planning, designing, developing, delivering and supporting services to meet school customer needs and expectations, determining and taking actions on school customer needs and expectations that can affect customer satisfaction, and actively managing relationships with school customers to achieve sustained school performance.

Therefore, the overall mean score is greater than 3 (neutral), pointing out that the t-test results indicate that the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. The results illustrated in Figure 4.35 point out that respondents ($n = 169$) agreed with the statements of customer focus in schools' challenges. For these reasons, the statements of customer focus in schools' challenges contribute significantly towards achieving the primary research objective and answering the main research question of this study.

It should be noted that the overall mean score of the benefits and challenges of customer focus in schools' principle (Factor) is 3.596. It should also be noted that the mean scores of all seven QMPs variables (benefits and challenges) were greater than a 3 (neutral) and, according to the t-test results, the respondents rejected the null hypothesis and accepted the alternative hypothesis that the mean score was greater than 3. More importantly, it should be noted that the respondents agreed with all the statements of the seven QMPs (factors).

The following section presents an overview of respondents on QMPs in public schools.

4.5.2 Overview of quality management principles in public schools

According to the online questionnaire that respondents were requested to respond on, this section provides the seven QMPs (factors) according to the benefits and challenges of the QMPs, as well as the factors that support the seven QMPs to improve school performance in the Tshwane District. The next section discusses the selection of the seven QMPs factors by respondents.

4.5.2.1 Selection of quality management principles (factors) by respondents

Respondents were requested to provide the QMP (Factor) that can be used to improve school performance in public schools, responding to Section C of the online questionnaire. Therefore, the aim of this section is to analyse the data received from respondents to identify and evaluate the significance of the seven QMPs (Factors) in assisting the researcher with achieving the primary research objective and secondary research objective of this study. Furthermore, the aim of this section is to assist the researcher with answering the main research question of this study. Therefore, Table 4.38 and Figure 4.36 show the frequency distribution of the answer to the survey question: *What QMPs as factors can be used to influence and improve school performance?* as indicated in percentage values.

Table 4.38: Overview of QMPs in public schools

What quality management principles as factors can be used to influence and improve school performance?		
Quality Management Principles	Frequency	Percentage
a. School leadership	145	85.80%
b. Evidence-based decision-making in schools	71	42.00%
c. Process approach in schools	48	28.40%
d. Engagement of school staff	85	50.30%
e. School relationship management	65	38.50%
f. Customer focus in schools	55	32.50%
g. Improvement of operational school activities	61	36.10%

These results are presented in Figure 4.36 and further explained narratively to provide a greater sense of the analysis.

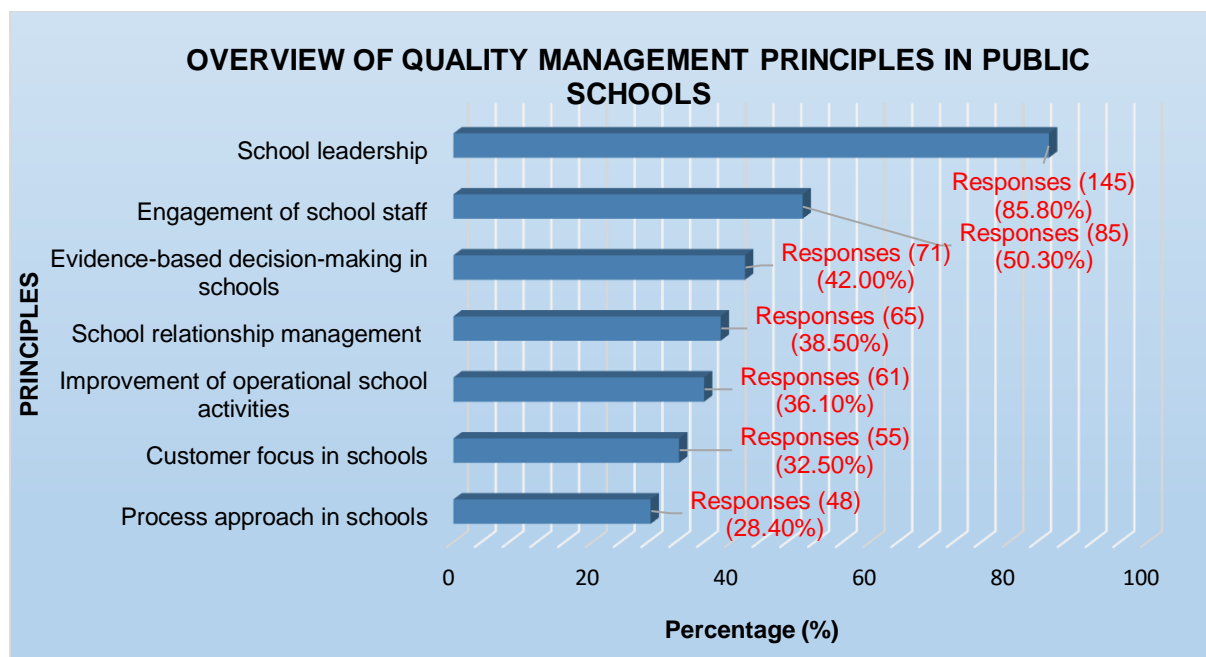


Figure 4.36: Overview of QMPs in public schools

From Table 4.38 and Figure 4.36, the following is evident:

- **School leadership:** It is evident that the majority of responses were 145 (85.80%), indicating that school leadership is a QMP factor that can be used to influence and improve school performance.
- **Engagement of school staff:** It is evident that 85 (50.30%) responses indicated that engagement of school staff is a QMP factor that can be used to influence and improve school performance.
- **Evidence-based decision-making in schools:** It is evident that 71 (42.00%) responses indicated that evidence-based decision-making in schools is a QMP factor that can be used to influence and improve school performance.
- **School relationship management:** It is evident that 65 (38.50%) responses indicated that school relationship management is a QMP factor that can be used to influence and improve school performance.
- **Improvement of operational school activities:** It is evident that 61 (36.10%) responses indicated that improvement of operational school activities is a QMP factor that can be used to influence and improve school performance.
- **Customer focus in schools:** It is evident that 55 (32.50%) responses indicated that customer focus in schools is a QMP factor that can be used to influence and improve school performance.
- **Process approach in schools:** It is evident that 48 (28.40%) responses indicated that the process approach in schools is a QMP factor that can be used to influence and improve school performance.

The results show that school leadership, followed by engagement of school staff and evidence-based decision-making in schools contribute constructively towards answering the main research question of the study. Furthermore, the results indicate that school leadership, followed by engagement of school staff and evidence-based decision-making in schools contribute constructively towards achieving the primary research objective of the study, and assist the researcher with arriving at the reliable recommendations of the study.

Furthermore, the results indicate that school relationship management, followed by improvement of operational school activities and customer focus in schools contribute significantly towards achieving the primary research objective of the study, and assist the researcher with arriving at the reliable recommendations of the study. In contrast, the results show that the process approach in schools insignificantly contributes towards achieving the primary research objective of this study; however, the QMP factor contributes towards evaluating the significance of the seven QMPs in public schools.

The next section discusses the selection of factors supporting QMPs by respondents.

4.5.2.2 Selection of factors supporting quality management principles by respondents

Respondents were requested to provide the factors that support QMPs in Section C of the online questionnaire. Consequently, the aim of this section is to analyse the data received from respondents to assist the researcher with achieving the secondary research objective that alludes to identifying the factors that support QMPs in the Tshwane District, as well as answering the sub-research question: *What factors support QMPs in the Tshwane District?* Therefore, Table 4.39 and Figure 4.37 show the frequency distribution of the answer to the question as indicated in percentage values.

Table 4.39: Factors supporting QMPs

<i>What factors support quality management principles?</i>		
Factors	Frequency	Percentage
a. School management	152	89.90%
b. School Governing Body	71	42.00%
c. School administration	71	42.00%
d. School district and policies	129	76.30%
e. McKinsey 7S model	20	11.80%

These results are graphically presented and synthesised in Figure 4.37 for a better illustration.

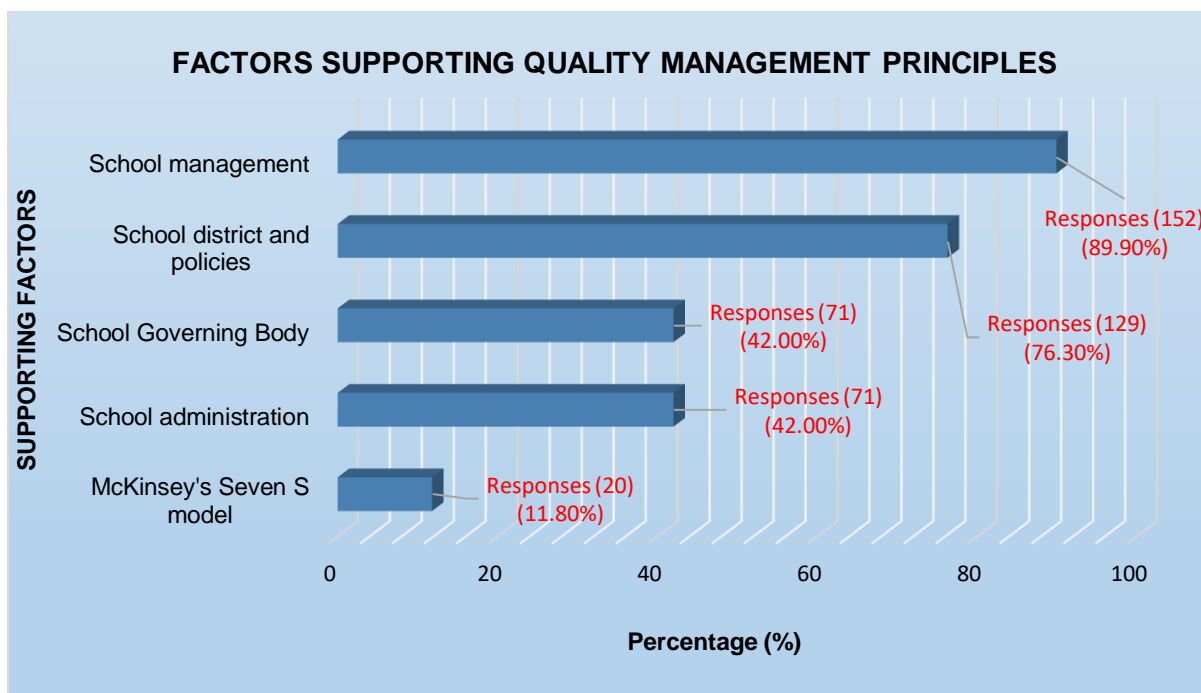


Figure 4.37: Factors supporting QMPs

According to Table 4.39 and Figure 4.37, the majority of respondents, namely 152 (89.90%), indicated that school management is a factor that supports QMPs, followed by school district and policies with 129 (76.30%) responses, school administration and SGB with 71 (42.00%) responses, and the McKinsey 7S model with 20 (11.80%) responses.

These results indicate that the school management factor, followed by the school district and policies factor contribute constructively towards answering the study's sub-research question, and contributes constructively towards achieving the study's secondary research objective. Moreover, the results indicate that school administration and SGB factors contribute significantly towards achieving the secondary research objective of this study. Conversely, the results indicate that the McKinsey 7S model insignificantly contributes towards achieving the secondary research objective of this study; however, the factor contributes towards arriving at the reliable recommendations of the study.

The next section presents the experience of respondents in QMPs (factors) in public schools.

4.5.3 Experience of respondents in quality management principles in public schools

Respondents were requested about their experience in quality management in public schools. Furthermore, respondents were also requested to select the period in which public

schools should measure quality. Therefore, the following section discusses the school management level that should manage quality in public schools.

4.5.3.1 School management level that should manage quality in public schools

Respondents were requested to provide their view on the school management level that should manage quality in public schools, responding to Section D of the online questionnaire. Accordingly, the aim of this section is to analyse the data to assist the researcher with arriving at the reliable recommendations, in line with the secondary research objective that alludes to providing recommendations on the factors that improve school performance in the Tshwane District, and answering the sub-research question: *What recommendations can be made on the factors that improve school performance?* Therefore, Table 4.40 and Figure 4.38 show the frequency distribution of the answer to the question, 'In your view, which management level should manage quality in your school?', as indicated in percentage values as n = 169.

Table 4.40: Respondents' experience in quality management

<i>In your view, which management level should manage quality in your school?</i>		
Management level	Frequency	Percentage
a. Top management level (Strategic activities)	135	79.90%
b. Middle management level (Execution of activities)	14	8.30%
c. Lower management level (Operational activities)	20	11.90%
Total	169	100%

These results are demonstrated and presented in Figure 4.38 to serve as evidence.

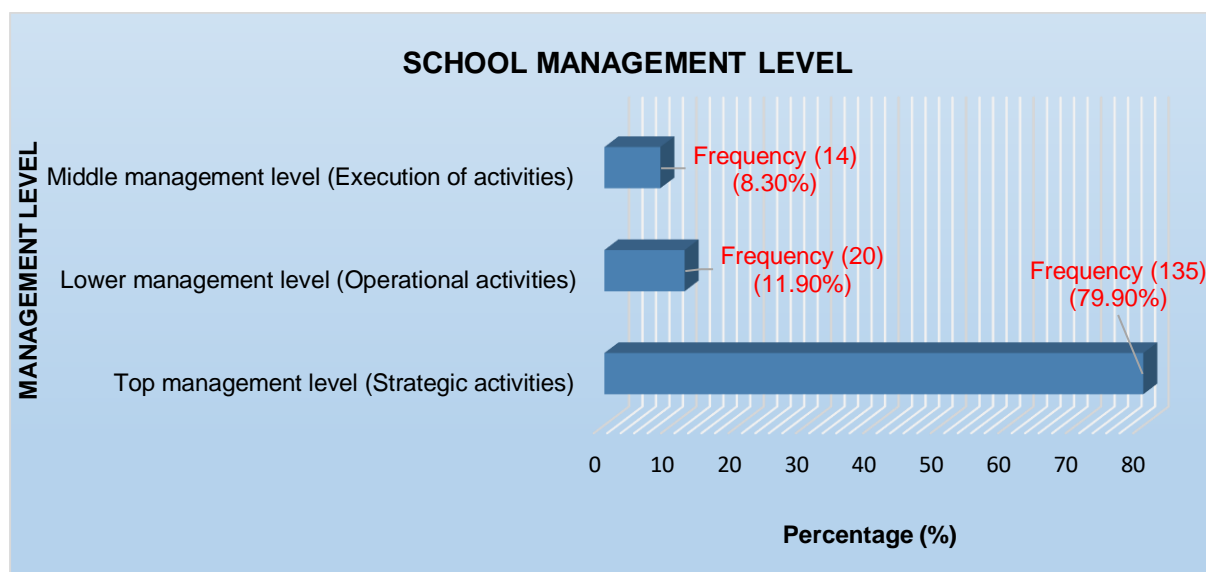


Figure 4.38: School management level

According to Table 4.40 and Figure 4.38, the majority of respondents, namely 135 (79.90%), indicated that 'Top management level' should implement strategic school activities and manage quality in public schools, followed by 'Lower management level' that should implement operational school activities, with 20 (11.90%) respondents, and then 'Middle management level' that should deal with the execution of school activities, with 14 (8.30%) respondents.

Therefore, these results indicate that top management level contributes constructively towards assisting the researcher with answering the sub-research question, *What recommendations can be made on the factors that improve school performance in the Tshwane District?* and arriving at the reliable recommendations of the study, in line with the secondary research objective that alludes to providing recommendations on the factors that improve school performance in the Tshwane District. In contrast, the results indicate that lower management level followed by middle management level contribute significantly towards assisting the researcher with arriving at the reliable recommendations, in line with the secondary research objective that alludes to providing recommendations on the factors that improve school performance in the Tshwane District.

The following section presents the experience of respondents relating to the period in which public schools should measure quality.

4.5.3.2 Period in which to measure quality in public schools

Respondents were requested to provide their experience, relating to the period in which public schools should measure quality, responding to Section D of the online questionnaire. Therefore, the aim of this section is to analyse the data to assist the researcher with arriving at reliable recommendations, in line with the secondary research objective that alludes to providing recommendations on the factors that improve school performance in the Tshwane District, and answering the sub-research question, *What recommendations can be made on the factors that improve school performance in the Tshwane District?* Therefore, Table 4.41 and Figure 4.39 show the frequency distribution of the answer to the question, 'In your view, how often should your school measure quality?', as indicated in percentage values as n = 169.

Table 4.41: Respondents' experience in quality management measuring period

<i>In your view, how often should your school measure quality?</i>		
Quality Management Measuring Period	Frequency	Percentage
a. Quarterly	138	81.70%
b. Semesterly	27	16.00%
c. Yearly	4	2.40%
Total	169	100%

These results are presented in chart form in Figure 4.39 and discussed to provide a greater insight into the analysis.

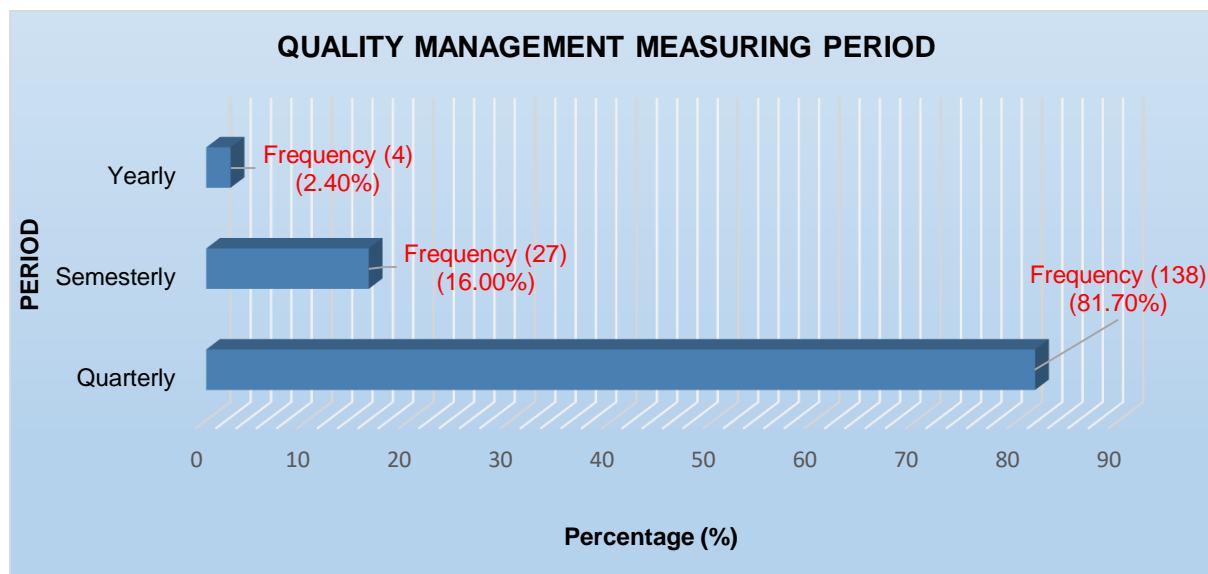


Figure 4.39: Quality management measuring period

According to Table 4.41 and Figure 4.39, the majority of respondents, namely 138 (81.70%), indicated that quality in public schools should be measured 'quarterly' (each and every three months), followed by 'semesterly' (each and every six months), with 27 (16.00%) respondents, and 'yearly' (each and every 12 months), with 4 (2.40%) respondents.

These results indicate that the quarterly measurement of quality in public schools contributes constructively towards assisting the researcher with answering the sub-research question and arriving at the reliable recommendations of the study, in line with the secondary research objective that alludes to providing recommendations on the factors that improve school performance. Furthermore, the results indicate that the semesterly measurement of quality in public schools followed by the yearly measurement of quality in public schools insignificantly contribute towards assisting the researcher with arriving at reliable recommendations, in line with the secondary research objective; however, the results assist the researcher with identifying the factors that support QMPs in the Tshwane District.

The following section focuses on the inferential analysis of this study.

4.6 Inferential Statistical Analysis

According to Hair *et al.* (2017:17), inferential statistical analysis is concerned with reaching decisions about the population based on the descriptive statistics of the sample. The aim of this section is to analyse the collected data to provide the inferential statistical analysis of the seven QMPs (factors) that can be used to improve school performance in the Tshwane District, and the factors that support QMPs in the Tshwane District.

For these reasons, the inferential statistical analysis assisted the researcher with answering the main research question, and arriving at the reliable recommendations. Therefore, the inferential statistical analysis assisted the researcher with answering the main research question, *What are the most significant factors of QMPs to improve school performance in the Tshwane District?*

The next section presents the correlation analysis of the seven QMPs (factors) and school performance as constructs correlating with the benefits and challenges of the seven QMPs as factors.

4.6.1 Correlation analysis

This section focuses on the statistical relationship between the benefits of the seven QMPs as factors correlating with the challenges of the seven QMPs as factors that will be referred to as correlation coefficient. The aim of this section is to analyse the data received from respondents ($n = 169$) to determine the strength of relationships between the benefits and challenges of the seven QMPs (factors) as shown in Section B of the online questionnaire.

According to Hair *et al.* (2017:17), a correlation coefficient helps to determine the strength of the linear relationship between two ranked or quantifiable factors, and a correlation could be positive, meaning that factors move in the same direction, or negative, meaning that when one factor value increases, the other factors' values decrease. Table 4.42 shows the Pearson's Correlation Coefficient between the benefits and challenges of the seven QMPs as factors.

Table 4.42: Pearson’s Correlation Coefficient between the benefits and challenges of the seven QMPs

Principle (Factor)	Correlation
Improvement of operational school activities benefits	r=0.383**
School relationship management benefits	r=0.356**
School relationship management challenges	r=0.265**
Process approach in schools benefits	r=0.264*
Engagement of school staff challenges	r=0.245**
Improvement of operational school activities challenges	r=0.209**
Evidence-based decision-making in schools benefits	r=0.196*
Customer focus in schools benefits	r=0.182*
Customer focus in schools challenges	r=0.179*
School leadership benefits	r=0.170*
Principle (Factor)	Correlation
Improvement of operational school activities benefits	r=0.310**
Engagement of school staff challenges	r=0.220*
Evidence-based decision-making in schools benefits	r=0.218*
School relationship management benefits	r=0.213**
School relationship management challenges	r=0.206**
Process approach in schools challenges	r=0.193*
School leadership challenges	r=0.163*
Improvement of operational school activities challenges	r=0.199*
QMPs	r=0.648**

It should be noted that a Pearson’s Correlation Coefficient (represented by the letter “*r*”) was used to measure the relationship between the principles (factors). Table 4.43 further illustrates the Pearson’s Correlation Coefficient between the benefits and challenges of the seven QMPs as factors measured.

Table 4.43: Pearson's Correlation Coefficient between the benefits and challenges of the seven QMPs (factors).

Pearson's Correlations Coefficient (n = 169)								
		Challenges of school relationship management	Benefits of customer focus in schools	Challenge of customer focus in schools	Benefits of improvement of operational school activities	Challenges of improvement of operational school activities	Quality management principles	School performance improvement
Challenges of school relationship management	R	1						
	N	166						
Benefits of customer focus in schools	R	0.559**	1					
	N	165	165					
Challenges of customer focus in schools	R	0.556**	0.528**	1				
	N	166	165	166				
Benefits of improvement of operational school activities	R	0.697**	0.405**	0.551**	1			
	N	166	165	166	166			
Challenges of improvement of operational school activities	R	0.680**	0.532**	0.596**	0.820**	1		
	N	166	165	166	166	166		
Quality management principles	R	0.265**	-0.182*	0.179*	0.383**	0.209**	1	
	N	166	165	166	166	166	168	
School performance improvement	R	0.206**	-0.027	0.143	0.310**	0.199*	0.648**	1
	N	166	165	166	166	166	168	168

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

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

Table 4.44 shows the Pearson's Correlation Coefficient between the benefits and challenges of the seven QMPs as factors measured in this section.

Table 4.44: Pearson's Correlation Coefficient between the benefits and challenges of the seven QMPs (factors)

Pearson's Correlations Coefficient (n = 169)										
		School leadership management benefits	School leadership management challenges	Evidence-based decision-making in schools benefits	Evidence-based decision-making in schools challenges	Process approach in schools benefits	Process approach in schools challenges	Benefits of engagement of school staff	Challenges of engagement of school staff	Benefits of school relationship management
School leadership benefits	R	1								
	N	164								
School leadership challenges	R	0.598**	1							
	N	163	163							
Evidence-based decision-making in schools benefits	R	0.162*	0.409**	1						
	N	164	163	164						
Evidence-based decision-making in schools challenges	R	0.114	0.412**	0.720**	1					
	N	164	163	164	164					
Process approach in schools benefits	R	0.100	0.370**	0.667**	0.680**	1				
	N	164	163	164	164	166				
Process approach in schools challenges	R	-0.029	0.293**	0.729**	0.767**	0.793**	1			
	N	164	163	164	164	166	166			
Benefits of engagement of school staff	R	-0.044	0.169*	0.620**	0.636**	0.715**	0.749**	1		
	N	164	163	164	164	166	166	166		

Pearson's Correlations Coefficient (n = 169)

		School leadership management benefits	School leadership management challenges	Evidence-based decision-making in schools benefits	Evidence-based decision-making in schools challenges	Process approach in schools benefits	Process approach in schools challenges	Benefits of engagement of school staff	Challenges of engagement of school staff	Benefits of school relationship management
Challenges of engagement of school staff	R	0.093	0.411**	0.655**	0.709**	0.726**	0.778**	0.792**	1	
	N	164	163	164	164	165	165	165	165	
Benefits of school relationship management	R	0.035	0.378**	0.581**	0.533**	0.664**	0.569**	0.558**	0.659**	1
	N	164	163	164	164	166	166	166	165	166
Challenges of school relationship management	R	0.043	0.369**	0.567**	0.663**	0.584**	0.720**	0.585**	0.706**	0.703**
	N	164	163	164	164	166	166	166	165	166
Benefits of customer focus in schools	R	0.118	0.245**	0.551**	0.565**	0.407**	0.586**	0.551**	0.498**	0.485**
	N	164	163	164	164	165	165	165	165	165
Challenges of customer focus in schools	R	0.139	0.446**	0.601**	0.593**	0.536**	0.647**	0.488**	0.582**	0.564**
	N	164	163	164	164	166	166	166	165	166
Benefits of improvement of operational school activities	R	0.000	0.381**	0.587**	0.554**	0.730**	0.683**	0.549**	0.692**	0.763**
	N	164	163	164	164	166	166	166	165	166
Challenges of improvement of operational school activities	R	-0.079	0.287**	0.574**	0.637**	0.562**	0.725**	0.590**	0.701**	0.631**
	N	164	163	164	164	166	166	166	165	166
Quality management principles	R	0.170*	0.105	0.196*	0.115	0.264**	0.116	0.134	0.245**	0.356**
	N	164	163	164	164	166	166	166	165	166
School performance improvement	R	-0.087	0.163*	0.218**	0.085	0.132	0.193*	0.083	0.220**	0.213**
	N	164	163	164	164	166	166	166	165	166

Based on the aforementioned Pearson's Correlation Coefficient between the benefits and challenges of the seven QMPs (factors) in Tables 4.42, 4.43 and 4.44, it is evident that there is a perfect positive correlation between the seven QMPs (factors). Furthermore, this inspection of the Pearson's Correlation Coefficient reveals that the factors are significant, and explains the variance between them, either with a small effect size (from 0.163 to 0.170), medium effect sizes (from 0.199 and 0.209) or large effect sizes (from 0.383 to 0.310).

In contrast, it is evident that the remaining Pearson's Correlation Coefficients measured between the seven QMPs (factors) in Tables 4.42, 4.43 and 4.44 insignificantly relate to each other; however, the measurements assist the researcher with determining the degree of the strength of the relationships between the factors.

The following section presents the regression analysis that was adopted to estimate the relationships between the dependent variables and the independent variables in this study.

4.6.2 Regression analysis

According to Hair *et al.* (2017:20), a regression analysis is a set of statistical processes for estimating the relationships between a dependent variable and one or more independent variables. Furthermore, a regression analysis helps in understanding how a value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held constant. It should be noted that in this study, the dependent variables are the QMPs benefits and challenges. Moreover, the independent variable is the seven QMPs.

Therefore, the regression analysis is widely used in this study for modelling the data-generating process, to forecast and understand which among the independent variables (the seven QMPs) are related to the dependent variables (QMPs benefits and challenges), and to explore the forms of these relationships. Consequently, to acquire a greater insight into the relationship between the seven QMPs, and the benefits and challenges of the QMPs, a regression analysis provides guidance to the researcher on the following underlying assumptions when discovering the relationship between the seven QMPs, and the benefits and challenges of the QMPs (Hair, Sarstedt, Hopkins, Kuppelwieser, 2014:113):

- The sample must be representative of the population for the inference prediction.
- The error is a random variable, which is normally distributed with a mean of zero and constant variable.
- The independent variables are measured with no error.
- The independent variables are linearly independent and not correlated, that is, it is not possible to express any independent variable as a linear combination of the others to avoid the problem of multicollinearity.
- The errors are not correlated.
- The variance of the error is constant across observations (i.e., homoscedasticity).

These assumptions were tested and applied in this study to ensure that by no amount any of the assumptions were violated; alternatively, the coefficient estimates would be biased. Therefore, these are sufficient conditions for the estimates to possess desirable properties: of being unbiased, consistent and efficient. Therefore, from the regression analysis discussions above, the following section discusses the tests on QMPs (factors).

4.6.3 Normality test for quality management principles

According to Bryman (2012), for valid results, one of the assumptions of data analysis that should not be violated is normality of the distribution of a variable. As a result, normality tests were used in this study to determine whether a dataset is well modelled by a normal distribution, and to compute how likely it is for a random variable underlying the dataset to be normally distributed. Therefore, one of the assumptions of regression analysis is that the dependent variable is normally distributed; alternatively, the results might be invalid. Furthermore, the dependent variables, i.e. the benefits and challenges of the QMPs, were subjected to the normality test. The following section shows the results of the normality tests assessed for the QMPs (factors).

4.6.3.1 Results of the normality tests assessed for quality management principles

In Figure 4.40, the normal Q-Q plot of QMPs shows that some of the data points do not fall on the straight line, and the straight line of the box-whisker diagram does not lie exactly in the middle of the box; therefore, it is uncertain if the variable roughly follows the normal distribution. The Q-Q plot was used in this variable to display the observed values against normally distributed data (represented by the line). It should be noted that it was important to

check the data for normality before the researcher undertook the data analysis. Consequently, the normal Q-Q plot results of QMPs (factors) are depicted in Figure 4.40.

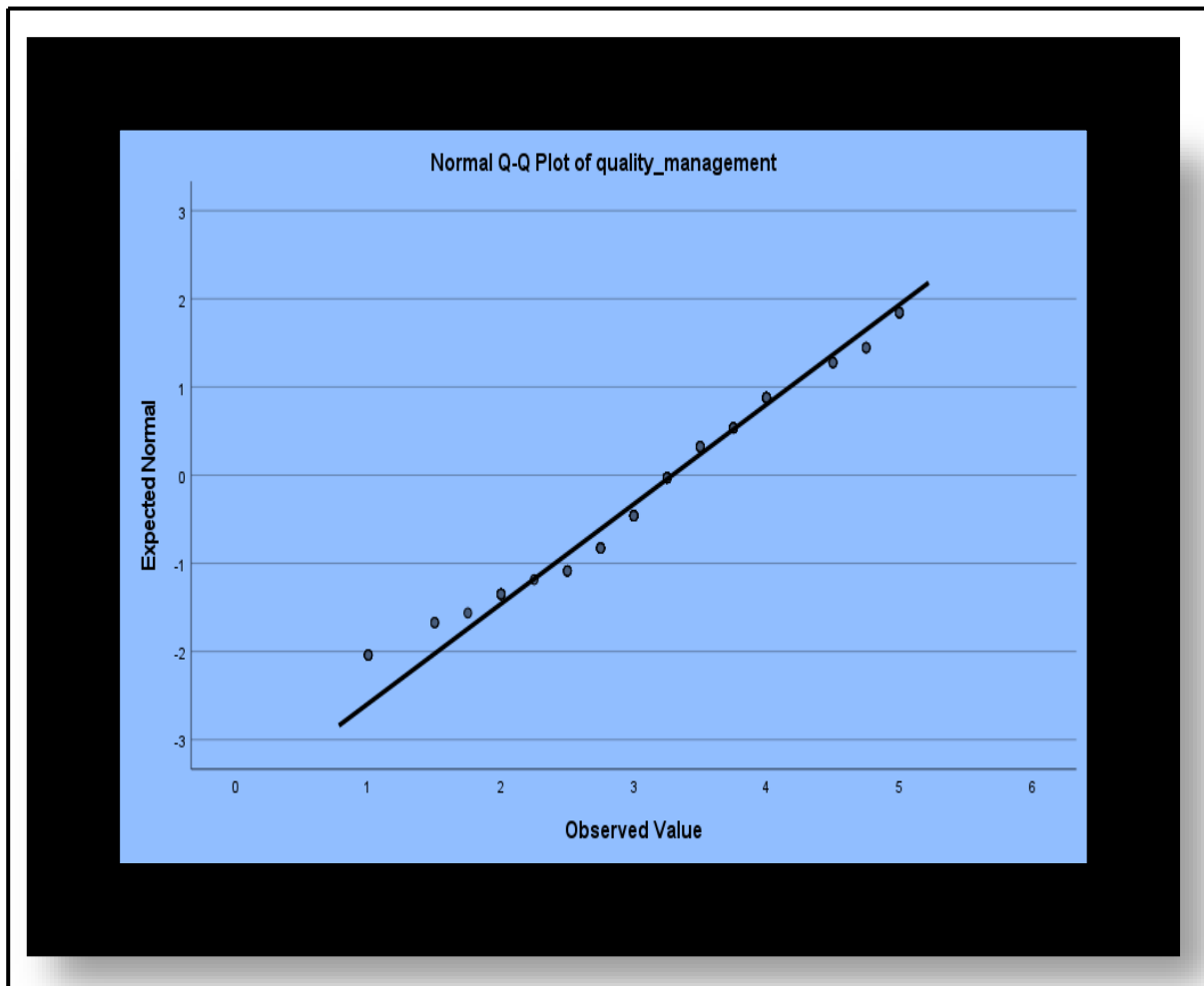


Figure 4.40: Q-Q normal plot for QMPs (factors)

In Figure 4.40, the values for symmetry of Skewness of close to zero and Kurtosis of between negative two (-2) and positive two (+2), (George & Mallery, 2016) are considered acceptable for a normal univariate distribution, which is in line with this study. Therefore, in this study, normality is assessed by examining the Skewness and Kurtosis of the distribution of the QMPs (factors). Figure 4.41 below illustrates the Box-whisker diagram for QMPs (factors), and Tables 4.45 and 4.46 demonstrate the descriptive statistics for QMPs (factors).

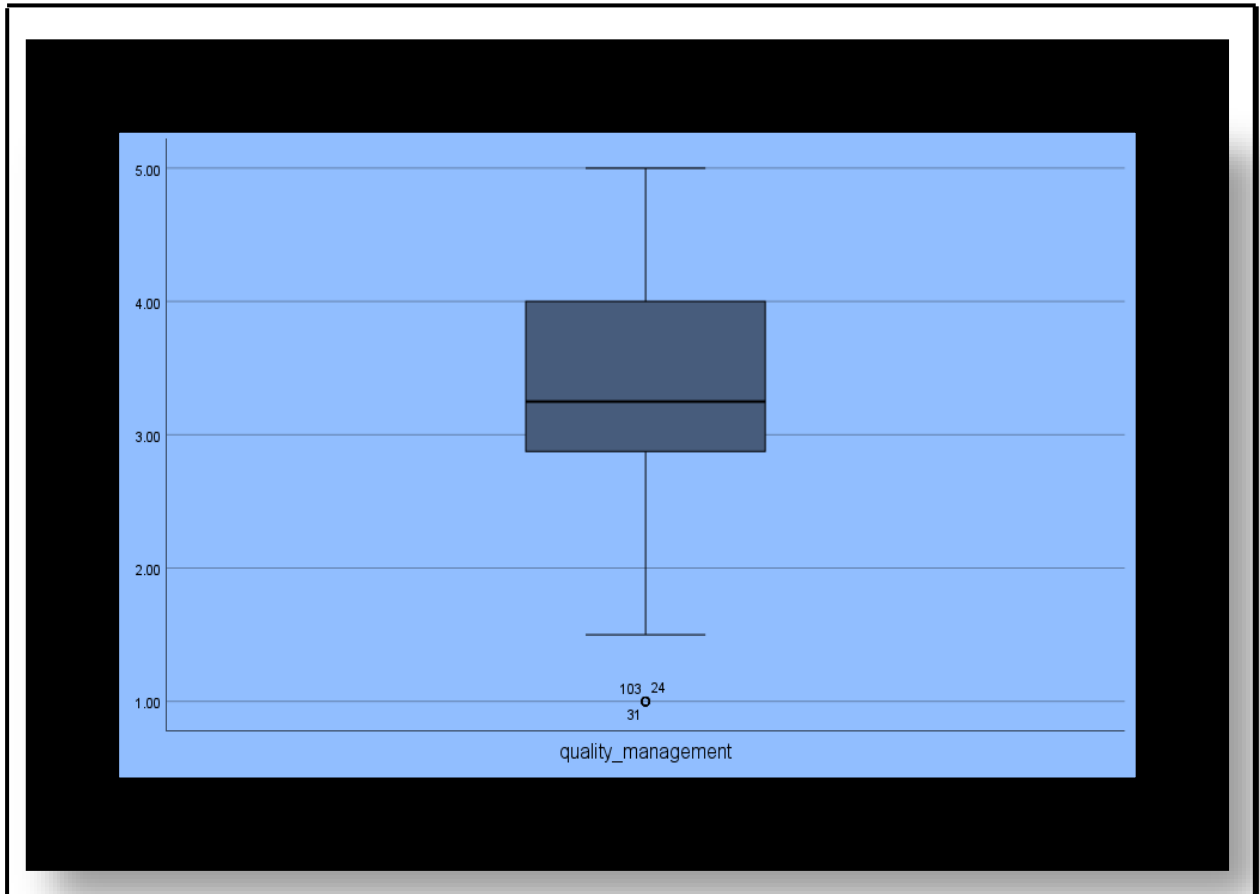


Figure 4.41: Box-whisker diagram for QMPs (factors)

Table 4.45 and Figure 4.41 show the descriptive statistics for QMPs (factors). The results indicate that the Skewness (-skewness -0.333) is close to zero and the Kurtosis (.kurtosis 0.521) falls within the acceptable range of between -3 and +3. The results further indicate that QMPs (factors) roughly follow the normal distribution. Consequently, the Box-whisker diagram for QMPs (factors) is illustrated in Figure 4.41.

Table 4.45: Descriptive statistics for QMPs

Descriptive Statistics		Statistic	Std. Error
Mean		3.2902	0.06824
95% Confidence interval for mean	Lower bound	3.1554	0.000
	Upper bound	3.4249	0.000
5% Trimmed mean		3.3145	0.000
Median		3.2500	0.000
Variance		0.782	0.000
Std. deviation		0.88455	0.000
Minimum		1.000	0.000
Maximum		5.000	0.000
Range		4.000	0.000
Interquartile range		1.190	0.000

Descriptive Statistics	Statistic	Std. Error
Skewness	-0.333	0.187
Kurtosis	0.521	0.373

Table 4.45 indicates that Kolmogorov-Smirnov and Shapiro-Wilk tests were also used to test if the QMPs (factors) followed the normal distribution. Furthermore, the Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine whether the sample data was distributed normally as follows:

Hypothesis 1:

- H_0^1 The sample data of QMPs is not significantly different from a normal population.
- H_1^1 The sample data of QMPs is significantly different from a normal population.

Therefore, the null hypothesis being tested is that the distribution of a factor follows the normal distribution. As a result, it tests how much the data differs from normality. Hence, if the deviation percentage is quite small, the probability or p-value will be high; alternatively, it will be small.

Consequently, a large deviation has a low p-value. As a rule of thumb, the null hypothesis, if $p < 0.05050$, is rejected; this means that H_0 was rejected. Thus, if $p < 0.05050$, it is unlikely to be true that the factor follows a normal distribution in the population. Both the probabilities for the Kolmogorov-Smirnov statistic (0.121) and Shapiro-Wilk statistic (0.955) are equal to $0.000 < 0.050$; therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted that the distribution of QMPs (factors) does not follow the normal distribution; this means that H_1 was accepted. As a result, these results imply that the results of the regression analysis should be interpreted with caution. For these reasons, the descriptive statistics for QMPs (factors) are illustrated in Table 4.46.

Table 4.46: Tests of normality

Variable: Quality Management Principles					
Kolmogorov-Smirnov			Shapiro-Wilk		
Statistics	df	Sig.	Statistics	df	Sig.
0.121	169	0.000	0.955	169	0.000

Consequently, the results of the normality tests assessed for QMPs (factors) discussed in Figures 4.40 and 4.41, and Tables 4.45 and 4.46, significantly contribute towards answering the main research question, *What are the most significant factors of QMPs to improve school performance in the Tshwane District?*

The following section shows the results of the regression modelling employed in this study to assess a relation between the dependent variables and the independent variable of this study.

4.6.4 Regression modelling

According to Hair *et al.* (2017:20), a regression model determines a relationship between an independent variable and a dependent variable by providing a function; therefore, formulating a regression analysis to assist the researcher with predicting the effects of the independent variable on the dependent one. Therefore, the aim of this section is to analyse the data received from respondents ($n = 169$) to determine a relationship between the independent variable (seven QMPs) and the dependent variables (benefits and challenges of the seven QMPs), as demonstrated in Section B of the online questionnaire, to formulate a regression analysis.

In the multiple regression model, there are p independent variables:

$$y_i = \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_p x_{ip} + \varepsilon_i,$$

where x_j is the i^{th} observation on the j^{th} independent variable.

The residual, $e_i = y_i - \hat{y}_i$, is the difference between the value of the dependent variable predicted by the model, \hat{y}_i and the true value of the dependent variable y_i . The residual can be written as:

$$e_i = y_i - \hat{\beta}_1 x_{i1} - \dots - \hat{\beta}_p x_{ip}.$$

The method of estimation, ordinary least squares minimises the sum of squared residuals.

$$SSE = \sum_{i=1}^N e_i^2.$$

These are the normal equations which are solved to yield the parameter estimators.

The normal equations are:

$$\sum_{i=1}^n \sum_{k=1}^p X_{ij} X_{ik} \hat{\beta}_k = \sum_{i=1}^n X_{ij} y_i, \quad j = 1, \dots, p.$$

In matrix notation, the normal equations are written as:

$$(\mathbf{X}^T \mathbf{X}) \hat{\boldsymbol{\beta}} = \mathbf{X}^T \mathbf{Y},$$

where the ij element of X is x_{ij} , the i element of the column vector Y is y_i , and the j element of $\hat{\boldsymbol{\beta}}$ is

$\hat{\beta}_j$. Thus X is $n \times p$, Y is $n \times 1$, and $\hat{\boldsymbol{\beta}}$ is $p \times 1$. The solution is:

$$\hat{\boldsymbol{\beta}} = (\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \mathbf{Y}.$$

Once a regression model has been estimated, it is important to confirm the 'goodness of fit' of the model by calculating the R-square and the statistical significance of the estimated parameters. Statistical significance is normally checked by an F-test of the overall fit using the ANOVA table, followed by t-tests of individual parameters.

The following section discusses the regression model for QMPs (factors).

4.6.4.1 Regression model for quality management principles

In this study, a regression model was fitted to identify and evaluate the most significant factors of QMPs to improve school performance in the Tshwane District. Hence, the benefits and challenges of the QMPs were the dependent variables, and the variables derived from the seven QMPs, the independent variable. As a result, the results are shown in Table 4.47.

According to Table 4.47, the Adjusted R-square is 0.382, which means that the model explains 38.20% of the variation of the dependent variable. As displayed in Table 4.47, school leadership benefits (coeff. = -0.337, Prob. = 0.006 < 0.001), evidence-based decision-making in schools benefits (coeff. = 0.300, Prob. = 0.042 < 0.005), the process approach in schools challenges (coeff. = -0.678, Prob. = 0.003 < 0.001), school relationship management challenges (coeff. = 0.432, Prob. = 0.006 < 0.001), customer focus in schools benefits (coeff.

= -0.762, Prob. = 0.000 <0.001), and customer focus in schools challenges (coeff. = 0.253, Prob. = 0.040<0.005) are significant.

Table 4.47: Regression model for QMPs

Model	Sum of Squares	Degree of Freedom	Mean Square	F-test	Probability Value
Regression	56.221	14	4.016	8.163	0.000
Residual	72.806	148	0.492	0.000	0.000
Total	129.027	162	0.000	0.000	0.000
Variable	Coefficient	Standard Error	Beta	T-test	Probability value
(Construct)	3.359	0.580	0.000	5.786	0.000
School leadership benefits	-0.337	0.122	-0.237	-2.773	0.006
School leadership challenges	0.027	0.136	0.019	0.195	0.846
Evidence-based decision-making in schools benefits	0.300	0.146	0.219	2.052	0.042
Evidence-based decision-making in schools challenges	-0.131	0.158	-0.098	-0.830	0.408
Process approach in schools benefits	0.345	0.232	0.221	1.486	0.139
Process approach in schools challenges	-0.678	0.228	-0.485	-2.970	0.003
Engagement of school staff benefits	0.089	0.150	0.071	0.594	0.553
Engagement of school staff challenges	0.103	0.182	0.077	0.568	0.571
School relationship management benefits	0.148	0.174	0.100	0.849	0.397
School relationship management challenges	0.432	0.153	0.326	2.814	0.006
Customer focus in schools benefits	-0.762	0.143	-0.482	-5.335	0.000
Customer focus in schools challenges	0.253	0.122	0.190	2.068	0.040
Improvement of operational school activities benefits	0.320	0.222	0.235	1.438	0.152
Improvement of operational schools activities challenges	-0.080	0.173	-0.067	-0.465	0.643

According to Table 4.47, the school leadership benefits, evidence-based decision-making in schools benefits, process approach in schools challenges, school relationship management challenges, customer focus in schools benefits, and customer focus in schools challenges contribute constructively towards assisting the researcher with answering the main research question.

The next section presents the summary of main findings of the study that emanated from the data collected and analysed, as interpreted and discussed in section 4.4 (Reliability and validity of data), section 4.5 (Descriptive statistical analysis), and section 4.6 (Inferential statistical analysis).

4.7 Summary of Main Findings

This study was conducted to identify and then evaluate the most significant factors of QMPs that improve school performance in the Tshwane District, and to identify the factors that support QMPs (factors) in the Tshwane District. The relationship between the most significant factors of QMPs and the supporting factors towards the seven QMPs (factors) is that, for the seven QMPs to be successfully adopted and implemented, in line with their significance in public schools to improve school performance, the supporting factors must be utilised to ensure successful, efficient and effective adoption and implementation of the seven QMPs (factors). It should be noted that this section focuses on the summary of findings of the main research questions, and the primary research objective.

A self-administered online questionnaire was used to collect data from school principals, SGB members and educators in public schools in the Tshwane District to answer the main research question that is in line with the seven QMPs, and to address the primary research objective. This section summarises the significance of QMPs factors emanating from the results presented in section 4.4 (Reliability and validity of data), section 4.5 (Descriptive statistical analysis), and section 4.6 (Inferential statistical analysis), as the following findings were found in the presentations of the analysis.

4.7.1 Findings of the main research question

The main research question of the study was:

- What are the most significant factors of QMPs to improve school performance in the Tshwane District?

Based on the results presented in sections 4.5, 4.6 and 4.7, the findings of the main research question are as follows:

The findings indicate that the majority of respondents agreed that the seven QMPs (factors) are useful and significant factors to assist the school principals, SGB members and educators with improving public school performance in the Tshwane District, as respondents agreed with the benefits and challenges of the factors. The evidence of this is presented in the descriptive statistical analysis, section 4.5, on the frequency distribution figures of the seven QMPs (factors). This is further justified by the following additional findings on each QMP (factor) analysed:

- **Factor 1: School leadership:**

Benefits:

The findings indicate that the agreement scales, 'Agree' and 'Strongly Agree', were associated with the highest percentages (ranging from 85.78% to 94.66%). The fourth variable, namely *Developing and improving school capabilities and staff to deliver desired school results* emerged as the most prominent benefit variable with a combined 'Agree' and 'Strongly Agree' figure of 94.66%. This indicates that the majority of respondents agreed with the benefits of school leadership as a factor which improves school performance in the Tshwane District.

Challenges:

The findings indicate that the agreement scales, 'Agree' and 'Strongly Agree', were associated with the highest percentages (ranging from 78.68% to 84.01%). The second variable, namely *Creating and sustaining school shared values, fairness, and ethical models for behaviour at all levels* emerged as the most prominent challenge variable with a combined 'Agree' and 'Strongly Agree' figure of 87.68%. This shows that the respondents agreed with the challenges of school leadership that hinder school performance improvement in the Tshwane District.

- **Factor 2: Engagement of school staff**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree', were associated with the highest percentages (ranging from 72.77% to 82.24%). The second variable, namely *Enhancing involvement of staff in improving school activities* was the most apparent benefit variable with a combined 'Agree' and 'Strongly Agree' percentage of 82.24%. This indicates that a significant number of

respondents agreed with the benefits of engagement of school staff as a factor that improves school performance in the Tshwane District.

Challenges:

The findings showed that the agreement scales, 'Agree' and 'Strongly Agree', were related to the highest percentages (ranging from 69.22% to 76.32%). It is evident that the second variable, namely *Promoting collaboration throughout the school* is the greatest challenge variable with a combined 'Agree' and 'Strongly Agree' figure of 76.32%. This indicates that the respondents agreed with the challenges of engagement of school staff that make it difficult for school performance improvement in the Tshwane District.

- **Factor 3: Evidence-based decision-making in schools**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree' were brought together with the highest percentages (ranging from 69.22% to 79.87%). The first variable, namely *Improve decision-making processes in schools* was the important benefit variable with a combined 'Agree' and 'Strongly Agree' figure of 79.87%. This shows that a great number of respondents agreed with the benefits of evidence-based decision-making in schools as a factor that improves school performance in the Tshwane District.

Challenges:

The findings indicate that the agreement scales, 'Agree' and 'Strongly Agree', were associated with the highest percentages (ranging from 61.53% to 73.36%). The second variable, namely *Making all school data needed available to the relevant school staff* is the significant challenge variable with a combined 'Agree' and 'Strongly Agree' percentage of 73.36%. This implies that the respondents agreed with the challenges of evidence-based decision-making in schools that hinder school performance improvement in the Tshwane District.

- **Factor 4: School relationship management**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree', were consolidated with the highest percentages (ranging from 72.77% to 78.10%). The first variable, namely *Enhance the school's ability to focus efforts on key processes and opportunities for school improvement* was a sufficiently great

benefit variable with a combined 'Agree' and 'Strongly Agree' figure of 78.10%. This shows that a vast number of respondents agreed with the benefits of school relationship management as a factor that improves school performance in the Tshwane District.

Challenges:

The findings showed that the agreement scales, 'Agree' and 'Strongly Agree', were consolidated to the highest percentages (ranging from 68.04% to 72.18%). The second variable, namely *Pooling and sharing information, expertise and resources with relevant school stakeholders* was a noteworthy challenge variable with a combined 'Agree' and 'Strongly Agree' percentage of 72.18%. This shows that a greater percentage of respondents agreed with the challenges of school relationship management as a factor that challenges school performance improvement in the Tshwane District.

- **Factor 5: Process approach in schools**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree' were associated with the highest percentage (ranging from 72.77% to 76.92%). The second variable, namely *Promoting common understanding of school objectives and values among school stakeholders* was a sufficiently great benefit variable with a combined 'Agree' and 'Strongly Agree' figure of 76.92%. This indicates that a greater number of respondents agreed with the benefits of the process approach in schools as a factor that improves school performance in the Tshwane District.

Challenges:

The findings indicate that the agreement scales, 'Agree' and 'Strongly Agree' were associated with the highest percentages (ranging from 62.71% to 73.36%). The sixth variable, namely *Ensure the necessary school information is available to operate and improve school processes* emerged as the most prominent challenge variable with a combined 'Agree' and 'Strongly Agree' percentage of 73.36%. This indicates that the respondents agreed with the challenges of the process approach in schools as a factor that hinders school performance improvement in the Tshwane District.

- **Factor 6: Improvement of operational school activities**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree', were linked to the highest percentage (ranging from 65.67% to 70.40%). The fourth variable, namely *Improving the use of learning for improvement* was an adequate benefit variable with a combined 'Agree' and 'Strongly Agree' percentage of 70.40%. This shows that most respondents agreed with the benefits of improvement of operational school activities as a factor that improves school performance in the Tshwane District.

Challenges:

The findings indicate that the agreement scales, 'Agree' and 'Strongly Agree', were linked to the highest percentages (ranging from 62.12% to 66.85%). The second variable, namely *Educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives* emerged as the most prominent challenge variable with a combined 'Agree' and 'Strongly Agree' percentage of 66.85%. This implies that the respondents agreed with the challenges of improvement of operational school activities as a factor that makes it difficult for school performance improvement in the Tshwane District.

- **Factor 7: Customer focus in schools**

Benefits:

It was found that the agreement scales, 'Agree' and 'Strongly Agree', were consolidated to the highest percentage (ranging from 80.47% to 85.20%). The fourth variable, namely *Enhancing school reputation* emerged as the most prominent benefit variable with a combined 'Agree' and 'Strongly Agree' percentage of 85.20%. This shows that most respondents agreed with the benefits of customer focus in schools as a factor that improves school performance in the Tshwane District.

Challenges:

The findings showed that the agreement scales, 'Agree' and 'Strongly Agree', were associated with the highest percentages (ranging from 66.26% to 74.54%). The first variable, namely *Recognising direct and indirect school customers as those who receive value from the school* was a significant challenge variable with a combined 'Agree' and 'Strongly Agree' percentage of 74.54%. This indicates that

the respondents agreed with the challenges of customer focus in schools as a factor that hinders school performance improvement in the Tshwane District.

In support of implementing these factors efficiently and effectively, the research sub-question 1 was:

- *What factors support quality management principles in the Tshwane District?*

The following findings are based on the results presented in section 4.5.2.2:

It was found that school management (89.90%), followed by school district and policies (76.30%), SGB (42.00%), school administration (42.00%), and the McKinsey 7S model (11.80%) are the factors that support the adoption and implementation of the seven QMPs (factors) in public schools to improve school performance. It should be noted that these factors should be adhered to when executing the seven QMPs (factors) in public schools in the Tshwane District.

Furthermore, based on the results presented in section 4.5.3, it was found that respondents hold a strong belief that quality in public schools should be managed by top level management (79.90%), and that top management level should assess quality in public schools on a quarterly basis (81.70%). These views by respondents are believed to enhance and support the seven QMPs (factors) for improving schools' performance in the Tshwane District.

The above findings are validated by the results, which succinctly assist in answering this research sub-question of the study. The following section summarises the findings of the primary research objective.

4.7.2 Findings of the primary research objective

The primary research objective of this study was:

- *To identify and then evaluate the most significant factors of quality management principles that improve school performance in the Tshwane District.*

The study found that the seven QMPs (factors) are useful factors for improving school performance in the Tshwane District because, according to ISO 9001:2015, these factors are a set of fundamental beliefs, norms, rules and values that are accepted as true, and can

be used as a basis for quality management. The study noted that these QMPs (factors) are used mostly in European countries to manage quality in schools. However, in South Africa, the possibility of adopting these seven QMPs (factors) in public schools is supported and motivated by the South African Schools Act 84 (1996) on the governance and professional management of public schools. The South African Schools Act 84 (1996) supports this finding by stating that, if there is any school performance management plan that needs to be tested, the school district management must firstly approve the management plan; thereafter, the school principals must adopt the plan, and report to the school district manager and the governing body on the progress made in implementing the plan within schools. It was further found that each factor has its own significant capacity to improve public school performance as follows:

4.7.2.1 Factor 1: School leadership

According to the respondents, this factor was found as the first most significant factor that assists in improving school performance in the Tshwane District. This is evidenced by respondents agreeing that school leadership increases effectiveness and efficiency in meeting quality school objectives, providing better school coordination processes, improving communication between school levels and functions, and developing and improving school capabilities and staff to deliver desired school results. Correspondingly, this is supported by Elshaer and Augustyn (2016:1288), who state that school leadership acts as a driver of effective quality management implementation by creating goals, policies, values and systems to fulfil stakeholder requirements that lead to improved school performance (§ 2.3.1.).

4.7.2.2 Factor 2: Engagement of school staff

Factor 2 of the analysis presented was found as the second significant factor that contributes to improving public school performance in the Tshwane District, due to the fact that this is a factor where school leadership and management involve school staff to improve school activities, and increase the motivation to achieve them. This factor improves an understanding of school quality objectives by staff and increases motivation to achieve them, enhances school individual developments, initiatives and creativity, and increases the ability to focus efforts on key processes and opportunities for improvement. Similarly, this is supported by Diaz and Martínez-Mediano (2018:5), who state that competent, empowered

and engaged staff at all levels throughout schools are essential to enhancing schools' capability to create and deliver value (§ 2.3.7.).

4.7.2.3 Factor 3: Evidence-based decision-making in schools

The evidence-based decision-making in schools' factor was found to be the third significant factor that enhances public school performance in the Tshwane District. This is due to the results that indicate that this factor improves the decision-making processes in public schools; public school operational effectiveness and efficiency; assessments of public school process performance; and the ability to achieve public school objectives. It also increases the ability to review, challenge and change public school opinions and decisions, as well as the ability to demonstrate the effectiveness of past school decisions. This is echoed by the ISO 9001:2015 (12), which states that the decisions that are based on the analysis of information are more likely to produce the desired results (§ 2.3.2.).

4.7.2.4 Factor 4: School relationship management

According to the respondents, in conjunction with the analysis presented, this factor was found to be the fourth significant factor that intensifies public school performance in the Tshwane District. This is because the respondents believe that this factor enhances public school performance, and both the internal and external school stakeholders, through being flexible and agile to adapt and respond to the school opportunities that are related to stakeholders. It also prioritises strategic school relationships that should be managed on an ongoing basis. Equally, this is emphasised by the ISO 9001:2015 (14), which asserts that, for sustained success, the relationships with all interested parties internally and externally must be successfully managed to intensify performance (§ 2.3.5).

4.7.2.5 Factor 5: Process approach in schools

Based on the results presented in the analysis, this factor was found to be the fifth significant factor that increases public school performance in the Tshwane District, according to respondents. This is due to respondents holding a strong belief that this factor enhances public school performance by providing consistent and predictable school outcomes, through a system of aligned processes which enhances the school's ability to focus efforts on key processes and opportunities for school improvement. Furthermore, it was found that this factor is an important factor because the results show that it optimises school performance through effective process management, and efficient use of school resources. This is

supported by Jaccard (2013:112), who states that the process approach is achieved more efficiently when activities and related resources are managed as a process (§ 2.3.3).

4.7.2.6 Factor 6: Improvement of operational school activities

According to the respondents, this factor was found to be the sixth significant factor that intensifies and enhances public school performance in the Tshwane District. This is because respondents indicated that this factor identifies the root causes of school problems, and provides corrective action towards both the internal and external school risks that require environmental scanning for school opportunities and threats, as well as action towards the drive for innovation. Correspondingly, this is supported by Andreoli and Klar (2021:1), who state that leading continuous improvement in operational school activities efforts by school leadership and management requires a planned approach, and subject matter knowledge to identify problems, assess outcomes and implement changes (§ 2.3.7).

4.7.2.7 Factor 7: Customer focus in schools

The analysis indicates that this factor was the seventh and final significant factor that improves public school performance in the Tshwane District. Additionally, it was found that this factor contributes to the enhancement of public school performance to intensify a school's reputation, increase school customer value, expand the school customer base, and increase school customer satisfaction. Equally, this is supported by the ISO 9001:2015 (2), which states that the primary focus of quality management is to meet customer requirements and strive to exceed customer expectations (§ 2.3.7).

4.7.3 Findings of secondary research objective 1

In support of the implementation of the seven QMPs, the secondary research objective 1 of the study was:

- *To identify the factors that support quality management principles in the Tshwane District.*

It was found that school management is the first supporting factor to the seven QMPs factors, followed by the school district and policies as the second supporting factor, SGB as the third supporting factor, school administration as the fourth supporting factor, and McKinsey 7S model as the fifth and final supporting factor towards the implementation of the seven QMPs factors in public schools to improve school performance. This is supported by Schlebusch (2020:75), who states that low-performing schools are in need of support from

school districts and other supporting elements to build their capacity to permanently change their teaching and learning culture (§ 2.3.7).

Further to the supporting factors, as presented in section 4.5.3, respondents responded to the online questionnaire with the view that the school top management level that implements strategic school activities must manage quality in public schools, and that they must measure quality on a quarterly basis, i.e., after three months of implementing the seven QMPs (factors) in public schools in the Tshwane District. It is envisaged that the lack of adherence to the measurement of quality on a quarterly basis will hinder the process of improving school performance in the Tshwane District.

4.8 Chapter Review

This chapter provides the empirical results and findings of the research. The chapter commences with the introduction, including an overview of the research questions and objectives, which are repeated to keep track of the study's main aim. The responses to the research instrument are analysed, and the response rate is calculated and presented. The demographics of the study are provided in tables and graphs. This is followed by the results of the reliability and validity of data, and the descriptive statistical analysis and inferential statistical analysis, which are used to address the research questions and objectives. A summary of the findings concludes the chapter.

The next and final chapter focuses on the conclusions and recommendations of the research study.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The previous chapter presented the empirical findings and the results of the research plan to address the research objectives and questions of this study. Chapter 5 deals with the conclusions and recommendations of the study. Moreover, in this chapter, the research problem, research objectives and research questions are revisited to determine to what extent they were achieved. This chapter unfolds according to the flow diagram as depicted in Figure 5.1.

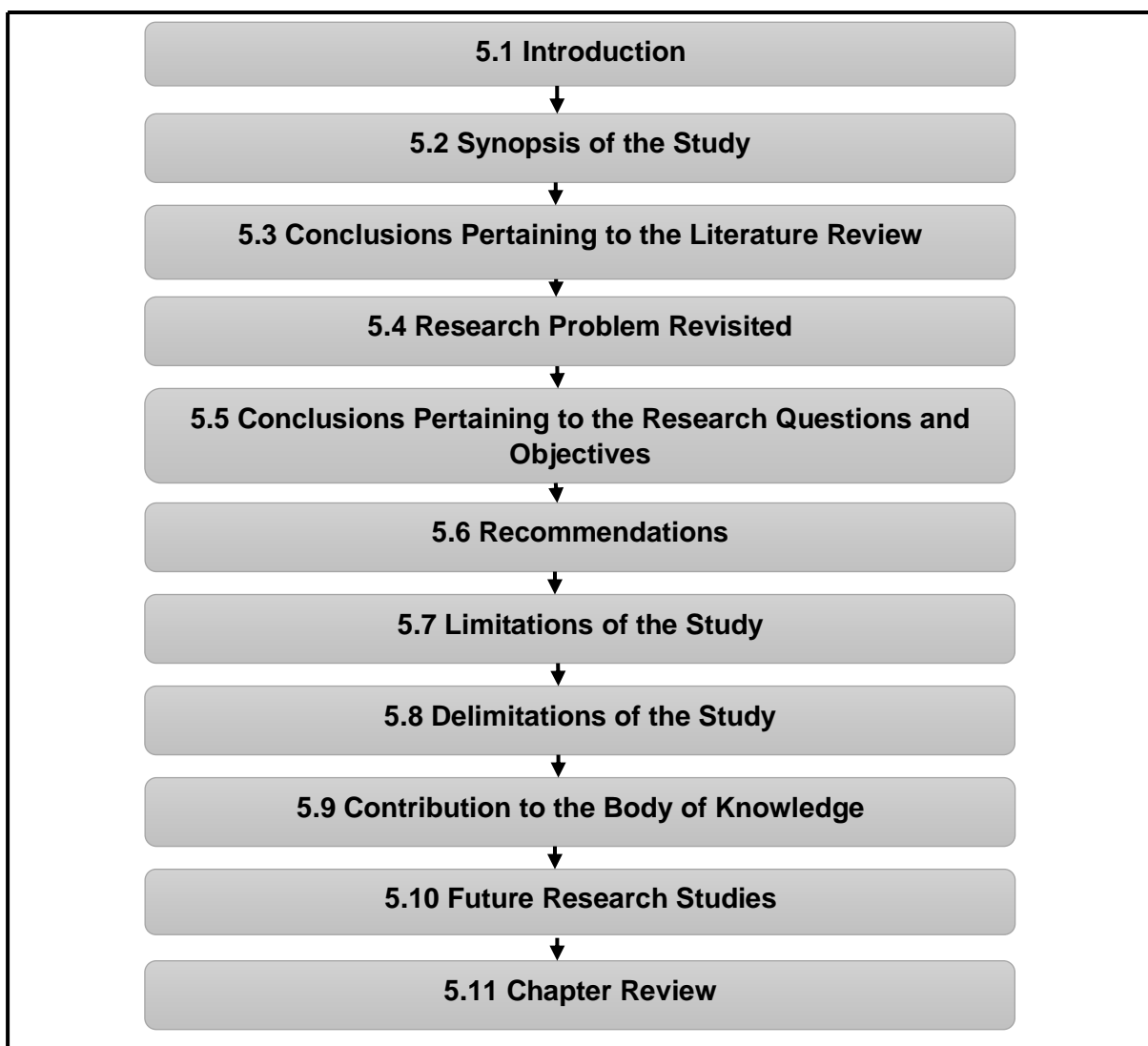


Figure 5.1: Flow diagram of Chapter 5

Source: Own compilation (2022)

The next section gives a synopsis of this study, incorporating a brief summary of the contents of each chapter.

5.2 Synopsis of the Study

The study aimed to evaluate the seven QMPs factors in public schools in the Tshwane District towards improving performance. An outline of each chapter is provided below.

Chapter 1 introduces this study based on the study's synopsis. It provides the aim, as well as the background of the study. The important concepts and components, as well as the contributions of the study, are explained. Furthermore, the problem statement, research questions, research objectives, research design and methodology are expounded on. The chapter concludes with the significance of this study.

Chapter 2 provides a comprehensive literature review associated with the research title and conceptual framework, which illustrates the relationship between the constructs. The relevant literature highlights findings from various local and international studies. Furthermore, the niche areas of quality management in South African schools are discussed, as well as the gaps identified in the niche areas. Moreover, different views (corresponding and contradicting) are critically discussed and analysed as presented by various authors. The chapter concludes with the path analysis of the review in public schools.

Chapter 3 outlines the research design and methodology used to achieve the study's objectives. It discusses the collection, analysis and interpretation of data, including the types of research. The study's population, sampling technique, sampling size, and data analysis method and software that were adopted in the study are discussed. The research design and quantitative methodology are presented. Chapter 3 concludes with the study's ethical considerations, and validity and reliability.

Chapter 4 presents the statistical analysis and findings of the collected data. The analysis starts with the reliability and validity of data, followed by the descriptive statistical analysis and the inferential statistical analysis. Data is analysed using the constructs of the study, comprised of the *quality management*, the *seven QMPs (factors)* and the *school performance*. The chapter concludes with a summary of the research findings.

Finally, Chapter 5 presents the conclusions and recommendations based on the results analysed and the interpretation of the findings. Conclusions on the literature review, the research questions and the research objectives are presented. The limitations of the study, as well as the recommendations for additional research, are discussed. Chapter 5 concludes with a contribution to the body of knowledge, and future research studies.

The next section discusses the conclusions pertaining to the literature review.

5.3 Conclusions Pertaining to the Literature Review

A literature review is an important part of a study, as it allows the researcher to provide arguments and determine gaps regarding the main, and sub-constructs of the study. This section provides the conclusions on the reviewed literature.

The reviewed literature indicated that the evaluated seven QMPs (factors) were linked to the research problem, the research questions and research objectives of the study (§ 2.6). The reviewed literature focused on the available and relevant literature on the title of the study, and determined the findings from local studies and international studies (§ 2.3). The reviewed literature focused on the niche areas of quality management in the South African school context and the gaps identified in the niche area (§ 2.5).

Furthermore, the reviewed literature critically discussed and analysed different views from different authors. It can be concluded from the reviewed literature that insight was gained into how the seven QMPs (factors) can be applied within the public school setting, as the literature reviewed discussed the seven QMPs (factors) in the Tshwane District towards improving public school performance.

The reviewed literature of the impact of the seven QMPs factors concluded that the factors that support the seven QMPs (factors) assisted with achieving the aim of the study, which indicated the importance of the study for a broader research focus area, as the reviewed literature comprised the main constructs of quality management, the seven QMPs (factors) and school performance.

The reviewed literature on the quality management construct indicated that the quality management gurus such as Deming (1950) and Ishikawa (1979) contributed to quality theory. The reviewed literature showed that Shewhart (1967) contributed to quality theory by providing the fundamental principles of quality. Deming (1950) contributed to quality theory by developing philosophies that focus on management involvement, continuous improvement, statistical analysis, goal setting and communication.

Ishikawa (1979) contributed to quality theory by developing methods that seek to improve consistency of performance and reduce variation through identification of key process characteristics (§ 2.2.2). Additionally, the contributions by Deming, Crosby and Juran provided a concrete foundation to address the challenges that prevent continuous improvement (§ 2.3).

The reviewed literature on the seven QMPs (factors) construct formed the basis of this study, provided insights regarding the ISO 9001:2015, and clarified how the QMPs (factors) are linked to the study. The next section highlights the emphasis of the problem identified in this study and considers again the problem statement as it is more articulated in Chapter 1 (§ 1.3).

5.4 Research Problem Revisited

The problem statement discussed in Chapter 1, section 1.3, states that the major shortcoming of South African schools is the quality of school performance, and the main contributing factors include educators, school management, school leadership, school support by districts, and the lack of co-operation between key school stakeholders, (NDP 2030, 2012:302).

Therefore, Chapter 1 highlights that the quality management literature revealed that there is a lack of studies that guide the implementation of quality management systems in public schools. Additionally, quality management literature also revealed that there are very few studies that are able to confirm whether the ISO 9001 brings true changes that are sustainable over time and lead to improvements in schools, (Fernández-Cruz *et al.*, 2020: 1185). Moreover, research on the measurement of stakeholder satisfaction on the quality of school services is scarce at high school level (Senol & Dagli, 2017:4860). Furthermore, research and literature on customer focus practices in schools are still limited, (Ibrahim *et al.*, (2016:205) (§ 1.3).

Therefore, the research problem was, *The significance of quality management principles (factors) to improve school performance are unknown.*

As a result, the research problem was described in Chapter 4 (findings of the main research question) where the main research question was answered. In this chapter, the description of the significance of the seven QMPs (factors) concludes on the degree to which the research problem of the study was attained from the summary of main findings on the main research question and the primary research objective. As a result of answering the main research question, and achieving the primary research objective in Chapter 4, the research problem was achieved and *The significance of quality management principles (factors) to improve school performance are now known.*

The next section provides the conclusions on the research questions and objectives based on the summary of main findings from Chapter 4.

5.5 Conclusions Pertaining to the Research Questions and Objectives

The study's research questions and objectives were utilised to realise the aim and purpose of the study. The reliability was found to be adequate, which confirmed the accuracy of the research instrument and the integrity of the responses obtained. Conclusions relating to the research questions and objectives are discussed below.

As a result of the findings discussed in Chapter 4, this section concludes the summary of the findings based on answering the main research question and the research sub-questions of the study that emanated from the achieved primary, and secondary research objectives. The purpose of this study was to evaluate the seven QMPs (factors) in public schools in the Tshwane District towards improving performance. Therefore, the study's research questions and objectives were utilised to realise the aim and purpose of the study. The reliability of all the seven QMPs (factors) was adequate, which confirmed the accuracy of the research instrument and the integrity of the responses obtained. The next section concludes with the research questions and research objectives based on the findings discussed in Chapter 4 (§ 4.7).

5.5.1 Conclusions pertaining to the research questions

The main research question was:

- *What are the most significant factors of quality management principles to improve school performance in the Tshwane District?*

The research sub-question 1 was:

- *What factors support quality management principles in the Tshwane District?*

Therefore, the following is concluded:

- The empirical results provide school leadership, school management and school governance, with an understanding regarding the significance of seven QMPs (factors) and the supporting factors that advocate improving school performance in the Tshwane District.
- There is a necessity for school leadership, school management, and school governance to address the benefits and challenges of the seven QMPs (factors) because the high percentages of the seven QMPs factors, and the supporting

factors confirm the reliability and validity of the online questionnaire that was used to collect the data.

- Furthermore, the seven QMPs factors, according to their significance, positively influence the implementation of the seven QMPs (factors) to improve school performance in their own capacity.
- It is essential that the school's top management level take the significance of the seven QMPs factors and the supporting factors into consideration when measuring quality in public schools on a quarterly basis.
- School districts failed to provide training on the efficiency and effectiveness of quality management for school principals, school management, school governance and school educators.
- Additionally, school districts neglected to decentralise the school education system and school policies to be executed by school leadership.
- School districts followed a school top-down decision-making approach as opposed to a bottom-up decision-making approach to ensure that educators become the starting point for decision-making in schools.
- School districts did not to make school decision-making policies based on educational research and practice, to ensure that the decision-making that is based on evidence can be translated into education policy.

Further to the above conclusions, the research questions were aligned with the research instrument, which contained the seven QMPs factors. The analyses of the seven QMPs factors related to the main research question provided the following conclusions:

- ***School leadership***

Based on the findings of this factor, it was concluded that there is a lack of capacity regarding school leadership in the Tshwane District.

- ***Engagement of school staff***

It was concluded that, in general, respondents agreed that there is an inadequate number of school districts to enhance the involvement of school staff in improving school activities.

- ***Evidence-based decision-making in schools***

It was concluded that there is no support from the school district to assist public schools with improving decision-making processes in schools. The respondents stated that the school district does not assist public schools with making the necessary school data available to the relevant school staff

- ***School relationship management***

It was concluded that respondents agreed that there is no sufficient support by school districts to enhance performance of public schools and their stakeholders through responding to the school opportunities and constraints related to each school's stakeholder.

- ***Process approach in schools***

It was concluded that the school district fails to assist public schools with enhancing schools' ability to focus effort on key processes and opportunities for school improvement.

- ***Improvement of operational school activities***

It was concluded that school districts neglected to support public schools to improve learning for improvement in schools and assist with enhancing drive for innovation.

- ***Customer focus in schools***

It was concluded that school districts failed to ensure that public schools increase school customer value and enhance school reputation.

The above conclusions validate the study's findings and succinctly assist in answering the research questions of this study. Next, the conclusions from the main findings pertaining to the research objectives are explained.

5.5.2 Conclusions pertaining to the primary research objective

The primary research objective was:

- *To identify and then evaluate the most significant factors of quality management principles that improves school performance in the Tshwane District.*

The conclusions, in relation to the primary research objective, include the seven QMPs (factors). Therefore, based on the findings in Chapter 4, section 4.7.1, it was found that the seven QMPs (factors) are ranked from the first position (school leadership) to the seventh position (customer focus in schools), according to their significance in improving school performance. The conclusions for each of the seven QMPs factors are provided below:

5.5.2.1 School leadership

According to the respondents, this factor was found to be the most significant factor to assist with improving school performance in the Tshwane District. Therefore, it can be concluded that school leadership is one of the key factors to improve the performance in public schools in the Tshwane District. Apart from this conclusion, a cause for concern is that a notable number of respondents disagreed whether school leadership was one of the key factors to improve performance in public schools in the Tshwane District. This concern could be investigated in future studies.

5.5.2.2 Engagement of school staff

It can be concluded that this factor is among the main factors that contribute to enhancing school performance in the Tshwane District. Besides this conclusion, a notable number of respondents disagreed whether engagement of school staff is among the main factors that contribute to enhancing school performance in the Tshwane District. Therefore, this concern advocates further investigation in future studies to better understand the reasons for the disagreement.

5.5.2.3 Evidence-based decision-making in schools

It can be concluded that there was a high level of agreement from the respondents regarding this factor significantly contributing to intensifying public school performance in the Tshwane District. However, the analysed findings also reveal that some respondents disagreed with the findings. Therefore, this requires further investigation in future studies.

5.5.2.4 School relationship management

It can be concluded that there was a high degree of consensus between the respondents on this factor, in line with its significance in improving school performance in the Tshwane District. Conversely, further to this conclusion, the empirical results show that this factor received a remarkable number of responses, as there was a notable percentage of respondents that disagreed that this factor improves school performance. Therefore, this contradiction calls for further investigation in future studies.

5.5.2.5 Process approach in schools

It can be concluded that there was a remarkable level of general agreement between the respondents, with regard to this factor, in terms of how it contributes to improving school performance in the Tshwane District. In contrast, the empirical results also indicate that this factor received a notable percentage of responses from respondents disagreeing with the findings of this factor. Therefore, this matter calls for further investigation in future studies.

5.5.2.6 Improvement of operational school activities

It can be concluded that there was a considerable number of respondents that were in agreement that this factor in its significance, improves school performance in the Tshwane District. However, it is further concluded that a notable number of respondents disagreed with the findings related to this factor that it can improve school performance. As a result, this issue advocates further investigation in future studies.

5.5.2.7 Customer focus in schools

It is concluded that there was a significant number of respondents that were in agreement that this factor has the potential to improve school performance in the Tshwane District. It is further concluded that a matter of concern regarding this factor is that some respondents disagreed that this factor has the potential to improve school performance. This matter needs further investigation.

5.5.3 Conclusions pertaining to the secondary research objective 1

The secondary research objective 1 was:

- *To identify the factors that support quality management principles in the Tshwane District.*

The conclusions, in relation to the secondary research objective 1, include the supporting factors to the seven QMPs in ensuring that the seven QMPs factors are practiced effectively and efficiently. Therefore, it was found that the supporting factors are ranked from the first position (school management) to the fifth position ((McKinsey 7S model), according to their significance in supporting the seven QMPs factors to improve school performance. The conclusions pertaining to the secondary research objective 1 on the supporting factor are explained below:

The research concludes that the empirical results provide school principals, school governance and educators with insights regarding the supporting factors towards practicing

the seven QMPs (factors) in public schools. Consequently, the researcher concludes that the school management supporting factor, and school district and policies supporting factor were considered highly, as these factors received the highest agreement percentages from respondents, and that these factors confirmed the reliability and validity of the online questionnaire, in relation to the current internal and external school environments' micro and macrostructure.

It is further concluded that the empirical results provided school leadership and school management with insights regarding the positive influence of the significance of the school governing body supporting factor, the school administration supporting factor, and the McKinsey 7S model supporting factor. Therefore, based on these findings, it can also be concluded that there is a positive correlation between the seven QMPs factors and these supporting factors implying that the combination of these factors is significant, and influences school performance in a small, medium or large effect size.

Additionally, it can be concluded that a relationship between the seven QMPs factors and the supporting factors indicates that a focus on one factor leads to a focus on another.

The above conclusions validate the analyses and findings of the study, and succinctly assist with answering the research questions and achieving the research objectives of this study. The following section presents the recommendations of the study.

5.6 Recommendations

The following recommendations were based on the main findings of this study, as well as the above conclusions drawn from the research study.

It is envisaged that these recommendations could assist the Tshwane school district where this study was conducted, the Gauteng Department of Basic Education (GDBE), school leadership and management, SGB members, and educators to optimally adopt and implement the seven QMPs factors to improve public school performance in the Tshwane District.

The next section discusses the recommendations of the study pertaining to the research questions and the research objectives.

5.6.1 Recommendations pertaining to the research questions

The following recommendations are aligned with the above conclusions, and are based on the research questions:

- *What are the most significant factors of quality management principles to improve school performance in the Tshwane District?*
- *What factors support quality management principles in the Tshwane District?*

It is recommended that the seven QMPs (factors) be fully adopted and implemented in public schools, as the research study has clearly indicated that the seven QMPs (factors) are useful in assisting school principals, SGB members, educators, and school districts with improving school performance in the Tshwane District. Therefore, the GDBE and the Tshwane school district should ensure that the QMPs factors are fully utilised by the public school leadership and management, as they were found to be innovative factors in the school context, which can be implemented in the current 21st century. Literature reveals that certain European countries operate through these factors, as well as that these factors are enshrined in the ISO 9001 International Standardised Framework.

Additional recommendations based on the above conclusions are as follows.

- School districts must implement capacity-building exercises to increase the capacity of school leadership.
- School leadership, school management and school governance should ensure that schools deliver education of progressively high quality by adopting the seven QMPs (factors) and the supporting factors, in accordance with their significance, and working collaboratively with school districts to improve school performance.
- School leadership, school management, and school governance must address the benefits and challenges of the seven QMPs (factors) to improve school performance effectively and efficiently.
- The school top management level must consider the relationship between the seven QMPs (factors) and the supporting factors to measure quality in schools.
- School districts should implement training interventions to improve the efficiency and effectiveness of school principals, school governance and school educators, as well as the quality of teaching and learning towards improving school performance.

- School districts should decentralise the school education system and school policies to be executed by school leadership.
- School districts must allow and support a bottom-up decision-making approach in schools to ensure that educators become the starting point for decision-making in schools.
- School districts must assist school leadership and school management in collecting and analysing school data to ensure that school decision-making policy is based on educational research and evidence.
- School districts must engage with stakeholders by informing and consulting with them regarding quality management of public schools, as well as to increase school customer value. Additionally, school stakeholders must hold the school leadership and school district accountable for quality management of public schools.

5.6.2 Recommendations pertaining to the primary research objective

- *To identify and then evaluate the most significant factors of quality management principles that improves school performance in the Tshwane District.*

The following recommendations are aligned with the above conclusions on the primary research objective, and are based on the seven QMPs (factors).

5.6.2.1 School leadership

As concluded above, school leadership is the most significant factor to assist with improving school performance in the Tshwane District. It is suggested that school leadership, school management, school governance and school district implement the following recommendations:

- To increase effectiveness and efficiency in meeting quality school objectives
- To provide better school coordination processes
- To improve communication between school levels and functions
- To develop and improve school capabilities and staff to deliver desired school results.

The action plans to be taken to achieve these recommendations are to communicate and acquire school staff buy-in when outlining the school mission, vision, strategy, policies and processes to create, and sustain school shared values, fairness and ethical models for behaviour at all levels to establish a school culture of trust and integrity. Additionally, to encourage a school-wide commitment to quality; to ensure that school leaders at all levels are positive examples to staff; to provide school staff with the required resources, training and authority to act with accountability; and to inspire, encourage and recognise school staff contribution.

5.6.2.2 Engagement of school staff

It is suggested that school leadership, school management, school governance and school district be advised of the following recommendations:

- To improve an understanding of school quality objectives by staff and increase motivation to achieve them
- To enhance involvement of staff in improving school activities
- To enhance school individual developments, initiatives, and creativity
- To enhance school staff satisfaction
- To enhance trust and collaboration
- To increase attention to sharing school values and culture
- To enhance the ability to focus effort on key processes and opportunities for improvement.

The action plans to be taken to achieve these recommendations are to communicate with school staff to promote understanding of the importance of their individual contribution; to promote collaboration throughout the school; to facilitate open discussion and sharing of school knowledge and experience; to empower school staff to determine constraints to performance and to take initiatives without fear. Furthermore, to recognise and acknowledge school staff contribution, learning and improvement; to enable self-evaluation of performance against personal objectives; and to conduct surveys to assess school staff satisfaction, communicate results and take appropriate actions.

5.6.2.3 Evidence-based decision-making in schools

It is suggested that the following recommendations apply to school leadership, school management, school governance and school district:

- To improve decision-making processes in schools
- To improve assessments of school process performance and the ability to achieve school objectives
- To improve school operational effectiveness and efficiency
- To increase the ability to review, challenge and change school opinions and decisions
- To increase the ability to demonstrate the effectiveness of past school decisions.

The action plans to be taken to achieve these recommendations are to determine, measure and monitor key school indicators to demonstrate school performance; make all school data needed available to the relevant school staff; ensure that school data and information are sufficiently accurate, reliable and secure; analyse and evaluate school data and information using suitable methods; ensure that school staff are competent to analyse and evaluate school data, and information as needed; and make school decisions and take actions based on evidence.

5.6.2.4 School relationship management

It is suggested that the following recommendations apply to school leadership, school management, school governance and school district:

- To enhance performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder
- To promote common understanding of school objectives and values among school stakeholders
- To increase capability to create value for school stakeholders by sharing resources and competence, and managing school quality-related risks.

The action plans to be taken to achieve these recommendations are to determine and prioritise school stakeholder relationships that need to be managed; to establish school relationships that balance short-term gains with long-term considerations; to pool and share information, expertise and resources with relevant school stakeholders; to measure school performance and provide performance feedback to school stakeholders, as appropriate; to enhance school improvement activities; and to establish collaborative development and improvement activities with partners and school stakeholders.

5.6.2.5 Process approach in schools

It is suggested that the following recommendations apply to school leadership, school management, school governance and school district:

- To enhance schools' ability to focus effort on key processes and opportunities for school improvement
- To provide consistency and predictable school outcomes through a system of aligned processes
- To optimise school performance through effective process management, efficient use of school resources, and reduced cross-functional barriers
- To enable the school to provide confidence to school stakeholders regarding its consistency, effectiveness and efficiency.

The action plans to be taken to achieve these recommendations are to define school objectives of the system and the processes necessary to achieve them; to establish authority, responsibility and accountability for managing school processes; to understand the school's capabilities and determine resource constraints prior to action; to determine school process interdependencies and analyse the effect of modifications to individual school processes on the system as a whole; to manage school processes and their interrelations as a system to achieve school quality objectives effectively and efficiently; to ensure the necessary school information is available to operate and improve school processes; and to manage risks that can affect school output processes and overall school outcomes of quality management.

5.6.2.6 Improvement of operational school activities

It is suggested that the following recommendations apply to school leadership, school management, school governance and school district:

- To improve process performance, school capabilities and customer satisfaction
- To enhance focus on identifying the root-cause investigation and determination of the problem, followed by prevention and corrective actions
- To enhance the ability to anticipate and react to internal and external school risks and opportunities
- To improve the use of learning for improvement and enhance drive for innovation.

The action plans to be taken to achieve these recommendations are to promote the establishment of improvement objectives at all school levels; to educate and train school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives; to ensure that school staff are competent to successfully promote and complete improvement activities; to develop and deploy processes to implement improvement activities throughout the school; and to track, review and audit the planning, implementation, completion and results of improvement activities.

5.6.2.7 Customer focus in schools

It is suggested that the following recommendations apply to school leadership, school management, school governance and school district:

- To increase school customer value and satisfaction, and improve school customer loyalty
- To enhance school reputation and expand school customer base.

The action plans to be taken to achieve these recommendations are to recognise direct and indirect school customers as those who receive value from the school; to understand school customers' current and future needs and expectations; to link school objectives to school customer needs and expectations; to plan, design, develop, deliver and support services to meet school customer needs and expectations; to determine and take actions on school customer needs and expectations that can affect customer satisfaction; and to actively manage relationships with school customers to achieve sustained school performance.

The next section discusses the recommendations of the study pertaining to the secondary research objective 1.

5.6.3 Recommendations pertaining to the secondary research objective 1

- *To identify the factors that support quality management principles in the Tshwane District.*

The following recommendations are aligned with the above conclusions for research objective 1:

- The school leadership and school district should ensure that resources are allocated to the school management, school governing body and school administration supporting factors.

- School leadership and school district must ensure that a strong relationship is maintained between the seven QMPs factors and the supporting factors to confirm that the seven QMPs factors are implemented efficiently and effectively within the school environment in improving school performance in the Tshwane District.

The above recommendations validate the conclusions of the study and succinctly assisted in answering research sub-question 2: *What recommendations can be made on the factors that improve school performance in the Tshwane District?* and achieving the secondary research objective 2: *To provide recommendations on the factors that improve school performance in the Tshwane District.*

The next section discusses the limitations of the study that hindered the study from achieving its research objectives.

5.7 Limitations of the Study

As a result, the study encountered several notable limitations that affected the findings. However, the applicable requirements for the research instrument were used and credibility was attained.

The school principals may have felt uncomfortable being scrutinised by their constituents, and the constituents selected to respond to the online questionnaire. SGB members also responded to the online questionnaire, and it is possible that, at the stage of their school governance, they may not have had a clear perception of quality management in schools. The limitations experienced specifically refer to the following aspects:

- The study conducted and data collected took place over a certain period and, therefore, results may be limited to a particular moment in time. Furthermore, the researcher provided a more detailed explanation of the seven QMPs (factors) to ensure clarity in the questionnaire, as it is a fairly new concept in the public school sector.
- The low response rate of the online questionnaire contributed towards time and budget constraints, as only a small number of respondents were responding to the online questionnaire on a weekly basis.
- Some respondents were unavailable during office hours to discuss the online questionnaire over the telephone.

- As a result of the Coronavirus (COVID-19) pandemic, the researcher was only permitted to engage with respondents telephonically, or through electronic mail and virtual meetings with school principals. This hindered the selected schools from participating in the study.

The action undertaken to address the limitation of the low response rate was that the researcher made telephone calls to participating schools to remind them about the survey, and the researcher sent electronic mails to school administrators to increase the response rate. Furthermore, to address the limitation of unavailability of respondents, the researcher made appointments with respondents beforehand. Moreover, to address the limitation of the COVID-19 pandemic, the researcher reached out to the school district, with the aim of obtaining assistance and co-operation from schools to participate in the study.

The following section discusses the delimitations of the study.

5.8 Delimitations of the Study

The study focused only on public secondary schools in the Tshwane District, as these are the schools that record lower performance, compared to the Independent Examinations Board (IEB) schools. The data was solely collected from public secondary schools in the Tshwane District. Therefore, the private secondary schools in the Tshwane District were excluded from the study. The findings cannot, therefore, be generalised to the private secondary schools in the Tshwane District. The next section discusses the study's contribution to the body of knowledge.

5.9 Contribution to the Body of Knowledge

Because of the significance of the conclusions in section 5.5.1 (conclusion pertaining to the research questions), conclusions in section 5.5.2 (conclusions pertaining to the primary research objective), and conclusions in section 5.5.3 (conclusions pertaining to the secondary research objective 1), this study contributed to the body of knowledge in the niche area of ISO 9001 seven QMPs. Therefore, as a consequence of Chapter 4, section 4.7 (summary of main findings), this study fills the void in quality management literature and serves as a source of reference for future research in the niche area of ISO 9001 QMPs. The empirical results of the study in Chapter 4, section 4.7, provide new insights into the

seven QMPs factors that advocate improving performance in public schools, and further provide new insights into the factors that support the seven QMPs (factors) that advocate improving performance in public schools in the Tshwane District.

Therefore, as discussed in Chapter 2, section 2.2.3 (international organisation for standardisation (ISO) 9001), given the capacity of ISO 9001 QMPs for improving service industries, it is deemed necessary to increase the studies of ISO 9001 QMPs and contribute to the body of knowledge especially in literature, where there are few studies assessing the true impact of the seven QMPs factors on school performance (Rodríguez-Mantilla *et al.*, 2018:1589). Furthermore, as discussed in Chapter 2, section 2.2.3, ISO 9001 was initially developed for manufacturing industries; therefore, it can be expanded in public schools to improve academic and non-academic performance, and to deliver higher quality services to school stakeholders, (Senol & Dagli, 2017:4858). As discussed in Chapter 2, section 2.2.2 (quality management pioneers and background), and section 2.2.3, the following gaps were identified in this study:

- There is a limited number of studies available to guide the execution of quality management in schools (Elahi & Ilyas, 2019:578-579)
- Quality management in schools has a positive effect on school performance; however, empirical evidence is scarce (Soria-García & Martínez-Lorent, 2019: 49),
- There are very few studies that are able to confirm whether ISO 9001 seven QMPs bring true change that is sustainable over time, and leads to improvement in schools (Fernández-Cruz *et al.*, 2020:1185)
- Research and literature on customer focus practices in schools is still limited (Ibrahim *et al.*, 2016:205).

As a result of section 4.7, this study closed the gaps identified by firstly achieving the primary research objective. The seven QMPs factors were empirically discussed, according to their significance emanating from the findings of the study. Secondly, the study closed the gaps by achieving the secondary research objective 1. The supporting factors were empirically discussed, according to their significance originating from the findings of the study.

Thirdly, the study closed the gaps by achieving the secondary research objective 2. The recommendations were made with reference to the literature review, and the findings of the empirical study were provided alongside the guidelines for action plans to be undertaken to achieve the recommendations. Therefore, these QMPs factors are considered to be the main contribution to the body of knowledge in the niche area of ISO 9001 seven QMPs factors.

Accordingly, since previous studies in quality management and ISO 9001 seven QMPs in schools have mainly been conducted outside the borders of South Africa and Africa in general, as evidenced from the literature in Chapter 2, this research made a significant contribution to the study of quality management and ISO 9001 seven QMPs factors in the South African context.

The following section discusses the future research studies that were derived from this study.

5.10 Future Research Studies

As a result of the problem statement articulated in Chapter 1, section 1.3, and attained in Chapter 5, section 5.4 (research problem revisited), the research questions outlined in Chapter 1, section 1.4, and answered in Chapter 4, section 4.7 (summary of main findings), and concluded in Chapter 5, section 5.5.1, the study presented insights into the evaluation of the seven QMPs (factors) in public schools towards improving performance in the Tshwane District. Moreover, as a result of the research objectives outlined in Chapter 1, section 1.6, and achieved in Chapter 4, section 4.7 (summary of main findings), and concluded in Chapter 5, sections 5.5.2 and 5.5.3, the study identified and evaluated the seven QMPs (factors) towards improving performance in the Tshwane District. Therefore, the possible future research areas that emanate from this study include the following:

- The study omitted private secondary schools. Therefore, future research could be conducted to evaluate the seven QMPs (factors) in private secondary schools.
- The study was limited to the selected public secondary schools located in the Tshwane District region. As a result, future research could focus on the remaining 51 districts in South Africa, or could be conducted in the other provinces in South Africa.

- As literature indicated that the practice of ISO 9001 QMPs (factors) in schools is mainly implemented in European countries, future research could be conducted to evaluate the seven QMP (factors) and the supporting factors to improve school performance in different sub-Saharan African countries.
- As the sample size of the study was observed at 169, future research could focus on a larger sample size to present more statistically significant findings.
- Further to the adoption of a quantitative research instrument such as the online questionnaire, future research could use qualitative research methods such as case study research, personal interviews and focus groups.
- As this study adopted a cross-sectional time horizon research approach, it provided a solid foundation for further research to be conducted in a similar study following a longitudinal research approach, where a single group of people are observed over a period of time.
- Further research could be conducted to determine the impact of collaboration between private schools and their underlying stakeholders on promoting the ISO 9001 seven QMPs (factors) operational practices in the Basic Education sector.

The following section focuses on the chapter review.

5.11 Chapter Review

Chapter 5 presents conclusions and recommendations of the study based on the summary of main findings in Chapter 4, section 4.7. Overall, the research problem was revisited, the conclusions regarding the main research question and the primary research objective were discussed, and the conclusions regarding sub-research questions 1 and 2, and the secondary research objectives 1 and 2 were outlined.

Firstly, the chapter discusses the synopsis of the study in section 5.2. Secondly, the conclusions pertaining to the literature review are presented in section 5.3. The research problem of the study that was thoroughly discussed in Chapter 1 is then outlined in section

5.4, followed by the conclusions pertaining to the research questions and objectives, in section 5.5. These conclusions emanate from the summary of main findings discussed in Chapter 4, section 4.7. The recommendations are offered in section 5.6, as well as suggested action plans to be taken to achieve the recommendations emanating from the conclusions of the study in section 5.5. Subsequently, section 5.7 details the limitations of the study, and section 5.8 specifies the delimitations undertaken to overcome the limitations. Then, the study's contribution to the body of knowledge is put forward, in section 5.9. Lastly, section 5.10 offers possible future research studies to consider.

It is imperative for public secondary schools to strive towards improving school performance by adopting the ISO 9001 seven QMPs (factors), and the factors that support the seven QMPs (factors). To the best of the researcher's knowledge, this study is among the few studies that were conducted to evaluate the ISO 9001:2015 seven QMPs (factors) in the public secondary school context, more specifically, the Tshwane District. The strong basis for this belief is firstly, that ISO 9001:2015 seven QMPs is the latest standard version to be revised by the ISO, in 2015, and, secondly, that the standard was only implemented four years prior to the commencement of this study. It should also be taken into consideration that this study followed the cross-sectional time horizon research approach.

The study sought to make a significant contribution to the body of knowledge on ISO 9001: 2015 seven QMPs (factors), and in the public secondary schools' environment. The study filled a void in literature, due to the limited research studies. Furthermore, the study created opportunities for future research studies in ISO 9001 seven QMPs factors. Table 5.1 is a diagrammatical depiction of the research proposed in Chapter 1 and concluded in Chapter 5. Furthermore, Table 5.1 gives a summary of the conclusion of the research statement of the study, in parallel with the research problem attained, the research questions answered, the research objectives achieved, and the title of the study.

Table 5.1: Depict summary on conclusion of the research statement of the study

Problem Statement Attained	Research Questions Answered	Research Objectives Achieved	Title of the study
<p>Because of the problem statement proposed in Chapter 1, section 1.3 and attained in Chapter 5, section 5.4 (research problem revisited), <i>The significance of quality management principles (factors) to improve school performance are now known.</i></p>	<p>As a result of the research questions proposed in Chapter 1, section 1.4, and answered in Chapter 5, section 5.5.1 (conclusions pertaining to the research questions), the following was attained:</p> <ul style="list-style-type: none"> • The most significant factors of quality management principles to improve school performance in the Tshwane District are now known. • The factors that support quality management principles in the Tshwane District are now known. • The recommendations on the factors that improve school performance in the Tshwane District are now known. 	<p>Because of the research objectives proposed in Chapter 1, section 1.6, and attained in Chapter 5, sections 5.5.2 (conclusions pertaining to the primary research objective) and 5.5.3 (conclusions pertaining to the secondary objective 1), the following was achieved:</p> <ul style="list-style-type: none"> • The most significant factors of quality management principles to improve school performance in Tshwane District are identified. • The factors that support quality management principles in the Tshwane District are identified. • The recommendations on the factors that improve school performance in the Tshwane District are provided. 	<p>Evaluating quality management principles in public schools in the Tshwane District towards improving performance.</p>

Source: Own compilation (2022)

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ANNEXURE A: LETTER TO REQUEST PERMISSION



PERMISSION LETTER

Request for permission to conduct research in the Tshwane West district schools.

“Evaluating quality management principles in public schools in the Tshwane District towards improving performance”

12 January 2020

The Gauteng Province Department of Basic Education

Dear Sir/Madam

I, Benson Phalane am doing research with Professor S. Naidoo and Professor B. Sookdeo, the senior lecturers in the Department of Operations Management towards a Master of Commerce degree at the University of South Africa. We are proposing to the department to participate in a study entitled “Evaluating quality management principles in public schools in the Tshwane District towards improving performance”.

The aim of the study is to identify the most significant factors of quality management principles to improve school performance in the Tshwane District, to identify the factors that support quality management principles in the Tshwane District, as well as to provide recommendations on the factors that improve school performance in the Tshwane District.

The department has been selected reason being that the field work of the study will be conducted at schools in the Tshwane District, and the schools selected to participate in the study are under the Gauteng Department of Basic Education.

The nature of this study will focus on descriptive studies research that determine and describe the schools’ situation as it is, and to cast a light on current schools’ issues on problems as well as to explain and validate the findings of the problems.

The benefit of this study is to provide recommendations on the factors that improve school performance in the Tshwane District.

Yours sincerely

A handwritten signature in black ink, appearing to read "Benson Phalane", written over a horizontal line.



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ANNEXURE B: PERMISSION LETTERS



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	06 October 2020
Validity of Research Approval:	08 February 2021– 30 September 2021 2019/394A
Name of Researcher:	Phalane MB
Address of Researcher:	Relly Court Flat No 08 Cnr Relly and De Kock Street Sunnyside Pretoria 0002
Telephone Number:	073 668 4310
Email address:	bensoaphalane@gmail.com
Research Topic:	Evaluating quality management principles in public schools in the Tshwane District towards improving performance.
Type of qualification	Mcom in Business Management
Number and type of schools:	10 Secondary Schools
District/s/HO	Tshwane West

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

Phalane MB 06/10/2020

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.

1

Making education a societal priority

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

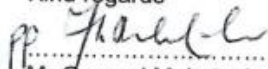
Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za

1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. **Because of COVID 19 pandemic researchers can ONLY collect data online, telephonically or may make arrangements for Zoom with the school Principal. Requests for such arrangements should be submitted to the GDE Education Research and Knowledge Management directorate. The approval letter will then indicate the type of arrangements that have been made with the school.**
4. **The Researchers are advised to make arrangements with the schools via Fax, email or telephonically with the Principal.**
5. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
6. A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
7. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
8. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
9. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
10. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
11. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
12. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
13. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
14. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
15. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
16. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards



Mr Gumani Mukatuni
Acting CES: Education Research and Knowledge Management

DATE: 06/10/2020

2

Making education a societal priority

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za



To: The Principals

**From: KG Mooke (Ms)
Acting District Director**

Date: 17th June 2021

Subject: Request to Conduct Research: Phalane MB

This letter serves to indicate that approval have been granted to Phalane MB to conduct research at your school in respect of the study indicated below.

Research Topic: **“Evaluating quality management principles in public schools in the Tshwane District towards improving performance”.**

As a result of COVID-19 pandemic, researcher can **ONLY** collect data online, telephonically or may make arrangements for virtual meeting with principal. Request for such arrangements should be submitted to the GDE Research and Knowledge Management Directorate. The Researcher is advised to make arrangements with the school via Fax, email or telephonically with the Principal.

A copy of this letter must be forwarded to the chairperson of the School Governing Body (SGB). Teaching and learning should not be compromised.

KG Mooke (Ms)
Acting District Director
Tshwane West

“Soaring to New Heights”
Office of the Director – Tshwane West District
(Mabopane, Winterveldt, Ga-Rankuwa, Soshanguve, Kameeldrift, Rosslyn, Akasia, Pretoria North,
Mountain View, Roseville, Capital Park, Hercules, Pretoria West, Lotus Garden)
Private Bag X38, ROSSLYN 0200. Tel (012)725 1300 Fax. (012) 725 1346
Yvonne.Mooke@gauteng.gov.za; Web. www.education.gpg.gov.za

ANNEXURE C: PARTICIPANT INFORMATION SHEET



Evaluating quality management principles in public schools in the Tshwane District towards improving performance.

Dear prospective respondent

You are invited to participate in a survey conducted by Benson Phalane under the supervision of Professor Sugandren Naidoo, and co-supervision of Professor Barnes Sookdeo, from the Department of Operations Management, towards a Master of Commerce in Business Management at the University of South Africa.


The survey has been designed to study the evaluation of quality management principles in public schools in the Tshwane District towards improving performance. You were selected to participate in this survey because the study considers school principals as school leadership, School Governing Body (SGB) as school governance, and educators as implementers of school activities. By completing this survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to evaluate quality management principles in public schools, to identify the most significant factors of quality management principles to improve school performance in the Tshwane District, to identify the factors that support quality management principles in the Tshwane District, and to provide recommendations on factors that improve school performance in the Tshwane District.

You are, however, under no obligation to complete the survey and you can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of connecting the information that you provide to you personally. Consequently, you will not be able to withdraw from the study once you have clicked the send button based on the anonymous nature of the survey. If you choose to participate in this survey, it will take up no more than 10-15 minutes of your time.

You will not benefit from your participation as an individual. We do not foresee that you will experience any negative consequences by completing the survey. No harm, either physical or emotional will come to you as a result of the study. The researcher undertakes to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual. The records will be kept for five years for audit purposes, and all documents used in the study will be stored in a locked environment, and soft copies will be password protected. Where after keeping the records for five years, the documents will be permanently destroyed. Hard copies will be shredded, and electronic versions will be permanently deleted from the hard drive of the computer. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the College of the Economic and Management Science (CEMS) College Research Ethics Review Committee (CRERC). The primary researcher, Mr. Benson Phalane, can be contacted during office hours at 073 668 4310 and 55846955@mylife.unisa.ac.za. The study leaders, Professor Sugandren Naidoo, can be contacted during office hours at 012 429 3304 and naidoosu@unisa.ac.za, and Professor Barnes Sookdeo, can be contacted during office hours at 012 429 2474 and bsookdeo@unisa.ac.za. You are making a decision to participate by continuing to the next page. Thank you for your participation.


Mr. Benson Phalane



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ANNEXURE D: PARTICIPANT CONSENT FORM AND THE QUESTIONNAIRE

PARTICIPANT CONSENT FORM

I herewith consent to participating in this research study.	<input type="checkbox"/>
I understand that the study is conducted on a voluntary basis.	<input type="checkbox"/>
I understand that the data collected for the study will be strictly confidential.	<input type="checkbox"/>
I understand that the data gathered will only be used for academic research.	<input type="checkbox"/>
I am aware that the final results of the research study will be available on request.	<input type="checkbox"/>

I acknowledge and accept the above terms for participating in the study.

Signature

Date

QUESTIONNAIRE

Evaluating quality management principles in public schools in the Tshwane District towards improving performance.

SECTION A: BIOGRAPHICAL INFORMATION
--

Please place a cross in the appropriate box.

1. Please indicate your gender:	
a. Male	<input type="checkbox"/>
b. Female	<input type="checkbox"/>
c. Transgender	<input type="checkbox"/>
d. Gender-neutral	<input type="checkbox"/>
e. Genderqueer	<input type="checkbox"/>
2. Please indicate your age group:	
a. 18-29 years	<input type="checkbox"/>
b. 30-39 years	<input type="checkbox"/>
c. 40-49 years	<input type="checkbox"/>
d. 50-59 years	<input type="checkbox"/>
e. 60-65 years	<input type="checkbox"/>
3. Please indicate your highest academic qualification obtained:	
a. Matric or less (Grade 12)	<input type="checkbox"/>
b. Certificate (1-year or below)	<input type="checkbox"/>
c. Diploma (3-year diploma/N6)	<input type="checkbox"/>
d. Bachelor's degree/B-Tech	<input type="checkbox"/>
e. Honours degree/Postgraduate diploma	<input type="checkbox"/>
f. Master's degree/M-Tech	<input type="checkbox"/>
g. Doctoral degree/D-Tech	<input type="checkbox"/>
4. Number of operational years in public school:	
a. 5-10 years	<input type="checkbox"/>
b. 11-15 years	<input type="checkbox"/>
c. 16-20 years	<input type="checkbox"/>
d. 21-25 years	<input type="checkbox"/>
e. More than 25 years	<input type="checkbox"/>
5. Please indicate your current occupation at your school:	
a. Principal	<input type="checkbox"/>
b. School Governing Body	<input type="checkbox"/>
c. Educator (Teacher)	<input type="checkbox"/>



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Quality management principles are a set of fundamental beliefs, norms, rules and values that are accepted as true and can be used as a basis for quality management. The seven quality management principles are school leadership, evidence-based decision-making in schools, process approach in schools, engagement of school staff, school relationship management, customer focus in schools, and improvement of operational school activities.

SECTION B: SEVEN QUALITY MANAGEMENT PRINCIPLES

The following questions are based on your experience on quality management principles in public schools. Please respond to the following statements by rating the degree of your agreement with the statements. Please place a cross in the appropriate box.

		1	2	3	4	5
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
School leadership						
6.	<i>I believe that the benefits of school leadership as a factor to improve school performance are...</i>					
	a. increasing effectiveness and efficiency in meeting quality school objectives.					
	b. providing better school coordination processes.					
	c. improving communication between school levels and functions.					
	d. developing and improving school capabilities and staff to deliver desired school results.					
7.	<i>I believe that the challenges that hinders school leadership as a factor to improve school performance are...</i>					
	a. communicating and acquiring staff buy-in when outlining the mission, vision, strategy, policies and processes.					
	b. creating and sustaining school shared values, fairness and ethical models for behaviour at all levels.					
	c. establishing school culture of trust and integrity.					
	d. encouraging a school-wide commitment to quality.					
	e. ensuring that school leaders at all levels are positive examples to staff.					
	f. providing school staff with the required resources, training and authority to act with accountability.					
	g. inspiring, encouraging and recognising school staff contribution.					
Evidence-based decision-making in schools						
8.	<i>My understanding is that the benefits of evidence-based decision-making in schools as a factor to improve school performance are to...</i>					
	a. improve decision-making processes in schools.					
	b. improve assessments of school process performance and ability to achieve school objectives.					
	c. improve school operational effectiveness and efficiency.					
	d. increase the ability to review, challenge and change school opinions and decisions.					
	e. increase the ability to demonstrate the effectiveness of past school decisions.					
9.	<i>My understanding is that the challenges that hinder evidence-based decision-making in schools as a factor to improve school performance is...</i>					



	a. determining, measuring and monitoring key school indicators to demonstrate school performance.					
	b. making all school data needed available to the relevant school staff.					
	c. ensuring that school data and information are sufficiently accurate, reliable and secure.					
	d. analysing and evaluating school data and information using suitable methods.					
	e. ensuring that school staff are competent to analyse and evaluate school data and information as needed.					
	f. making school decisions and taking actions based on evidence.					
Process approach in schools						
10.	<i>I believe that the benefits of the process approach in schools as a factor to improve school performance is to...</i>					
	a. enhance the school's ability to focus effort on key processes and opportunities for school improvement.					
	b. provide consistence and predictable school outcomes through a system of aligned processes.					
	c. optimise school performance through effective process management, efficient use of school resources, and reduced cross-functional barriers.					
	d. enable the school to provide confidence to school stakeholders as to its consistency, effectiveness and efficiency.					
11.	<i>I believe that the challenges of process approach in schools as a factor to improve school performance that schools experience are to...</i>					
	a. define school objectives of the system and processes necessary to achieve them.					
	b. establish authority, responsibility and accountability for managing school processes.					
	c. understanding the school's capabilities and determining resource constraints prior to action.					
	d. determine school process interdependencies and analyse the effect of modifications to individual school processes on the system as a whole.					
	e. manage school processes and their interrelations as a system to achieve school quality objectives effectively and efficiently.					
	f. ensure the necessary school information is available to operate and improve school processes.					
	g. manage risks that can affect school outputs processes and overall school outcomes of quality management.					
Engagement of school staff						
12.	<i>My understanding of the benefits of engagement of school staff as a factor to improve school performance can benefit the school by...</i>					
	a. improving an understanding of school quality objectives by staff and increasing motivation to achieve them.					
	b. enhancing involvement of staff in improving school activities.					
	c. enhancing school individual developments, initiatives and creativity.					
	d. enhancing school staff satisfaction.					



	e. enhancing trust and collaboration.					
	f. increasing attention to share school values and culture.					
	g. enhances the ability to focus effort on key processes and opportunities for improvement.					
13.	<i>My understanding of the challenges that affect engagement of school staff as a factor to improve school performance are...</i>					
	a. communicating with school staff to promote understanding of the importance of their individual contribution.					
	b. promoting collaboration throughout the school.					
	c. facilitating open discussion and sharing of school knowledge and experience.					
	d. empowering school staff to determine constraints to performance and to take initiatives without fear.					
	e. recognising and acknowledging school staff' contribution, learning and improvement.					
	f. enabling self-evaluation of performance against personal objectives.					
	g. conducting surveys to assess school staff' satisfaction, communicating results, and taking appropriate actions.					
School relationship management						
14.	<i>I believe that the benefits of school relationship management as a factor to improve school performance can be achieved when...</i>					
	a. enhancing performance of the school and its stakeholders through responding to the school opportunities and constraints related to each stakeholder.					
	b. promoting common understanding of school objectives and values among school stakeholders.					
	c. increasing capability to create value for school stakeholders by sharing resources and competence and managing school quality-related risks.					
15.	<i>I believe that the challenges of school relationship management as a factor to improve school performance that are experienced in schools are...</i>					
	a. determining and prioritising school stakeholder relationships that need to be managed.					
	b. establishing school relationships that balance short-term gains with long-term considerations.					
	c. pooling and sharing information, expertise and resources with relevant school stakeholders.					
	d. measuring school performance and providing performance feedback to school stakeholders, as appropriate, to enhance school improvement activities.					
	e. establishing collaborative development and improvement activities with partners and school stakeholders.					
Customer focus in schools (communities, learners, and parents)						
16.	<i>My understanding is that the benefits of customer focus in schools as a factor to improve school performance can improve school performance by...</i>					
	a. increasing school customer value.					
	b. increasing school customer satisfaction.					



	c. improving school customer loyalty.					
	d. enhancing school reputation.					
	e. expanding school customer base.					
17.	<i>My understanding of the challenges that hinder customer focus in schools as a factor to improve school performance are...</i>					
	a. recognising direct and indirect school customers as those who receive value from the school.					
	b. understanding school customers' current and future needs and expectations.					
	c. linking school objectives to school customer needs and expectations.					
	d. planning, designing, developing, delivering and supporting services to meet school customer needs and expectations.					
	e. determining and taking actions on school customer needs and expectations that can affect customer satisfaction.					
	f. actively managing relationships with school customers to achieve sustained school performance.					
	Improvement of operational school activities					
18.	<i>I believe that the benefits of improvement of operational school activities as a factor to improve school performance can be achieved through...</i>					
	a. improving process performance, school capabilities and customer satisfaction.					
	b. enhancing focus on identifying the root-cause investigation and determination of the problem, followed by prevention and corrective actions.					
	c. enhancing the ability to anticipate and react to internal and external school risks and opportunities.					
	d. improving the use of learning for improvement.					
	e. enhancing drive for innovation.					
19.	<i>I believe that the challenges of improvement of operational school activities as a factor to improve school performance that hinder performance improvement are...</i>					
	a. promoting establishment of improvement objectives at all school levels.					
	b. educating and training school staff at all levels on how to apply basic tools and methodologies to achieve improvement objectives.					
	c. ensuring that school staff is competent to successfully promote and complete improvement activities.					
	d. developing and deploying processes to implement improvement activities throughout the school.					
	e. tracking, reviewing and auditing the planning, implementation, completion and results of improvement activities.					

SECTION C: OVERVIEW OF QUALITY MANAGEMENT PRINCIPLES IN PUBLIC SCHOOLS

The following questions provides a bigger picture of supporting factors of quality management principles that influence the improvement of school performance. Please respond to the following questions by placing a cross in the appropriate box.

20. What quality management principles as factors can be used to influence and improve school performance?	
a. School leadership.	<input type="checkbox"/>
b. Evidence-based decision-making in schools.	<input type="checkbox"/>
c. Process approach in schools.	<input type="checkbox"/>
d. Engagement of school staff.	<input type="checkbox"/>
e. School relationship management.	<input type="checkbox"/>
f. Customer focus in schools.	<input type="checkbox"/>
g. Improvement of operational school activities.	<input type="checkbox"/>
21. What factors support quality management principles? You may select more than one option.	
a. School management.	<input type="checkbox"/>
b. School Governing Body.	<input type="checkbox"/>
c. School administration.	<input type="checkbox"/>
d. School district and policies.	<input type="checkbox"/>
e. McKinsey's Seven S model – (Is a model used to assist school leaders in identifying the school key components when implementing school strategies).	<input type="checkbox"/>

SECTION D: EXPERIENCE ON QUALITY MANAGEMENT

The following questions request your experience on quality management in public schools. Please respond to the following questions by placing a cross in the appropriate box.

22. In your view, which management level should manage quality in your school?	
a. Top management level (Strategic activities).	<input type="checkbox"/>
b. Middle management level (Execution of activities).	<input type="checkbox"/>
c. Lower management level (Operational activities).	<input type="checkbox"/>
23. In your view, how often should your school measure quality?	
a. Quarterly.	<input type="checkbox"/>
b. Semester.	<input type="checkbox"/>
c. Yearly.	<input type="checkbox"/>

End of survey.

Thank you very much for completing the questionnaire.

ANNEXURE E: ETHICAL CLEARANCE CERTIFICATE



COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES
DEPARTMENTAL ETHICS REVIEW COMMITTEE
OPERATIONS MANAGEMENT

Date: 07 July 2021

Dear Mr MB Phalane

**Decision: Ethics approval from
07/07/2021 until 07/07/2024**

NHREC Registration # : (if applicable)

ERC Reference # : OPS/2021/001

Name : M B PHALANE

Student number #: 55846955

Researcher(s): Mr Mankhubu Benson Phalane
Mobile: 073 668 4310, Work: 012 431 0500
Department of Operations Management
College of Economic and Management Sciences
University of South Africa

Title: Evaluating quality management principles in public schools in the Tshwane District towards improving performance

Qualification: Masters Degree

Thank you for the application for research ethics clearance by the Departmental Research Ethics Review Committee for the above-mentioned research.

*The **low risk application** was **reviewed** by the College of Economic and management Sciences Research Ethics Review Committee on **07 June 2021** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Economic and management Sciences Research Ethics Review Committee.



3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. Permission is to be obtained from the university from which the participants are to be drawn (the Unisa Senate Research, Innovation and Higher Degrees Committee) to ensure that the relevant authorities are aware of the scope of the research, and all conditions and procedures regarding access to staff/students for research purposes that may be required by the institution must be met.
8. If further counselling is required in some cases, the participants will be referred to appropriate support services.

Note:

*The reference number **OPS/2021/001** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,



Prof S van Antwerpen
Chairperson, ERC (Department of Ops Man)
E-mail: vanans@unisa.ac.za
Tel: 012 429 4988



Prof MT Mogale
Executive Dean: CEMS
E-mail: mogalmt@unisa.ac.za
Tel: 012 429 4805



ANNEXURE F: STATISTICIAN CONFIDENTIALITY AGREEMENT

1



UNISA RESEARCH ETHICS 3rd Party Confidentiality Agreement (Transcriber, Co-coder, Statistician and/or Fieldworkers)

A. INSTRUCTIONS

Please read through the entirety of this form carefully before signing.

After completing the required fields, please sign the form. After this form has been signed by the transcriber, co-coder, statistician or fieldworker, it should be given to the principal researcher for submission to the relevant UNISA Research Ethics Committee.

The transcriber, co-coder, statistician and/or fieldworker should keep a copy of the *Confidentiality Agreement* for their records.

B. CONFIDENTIALITY OF A RESEARCH STUDY

Confidentiality is the treatment and maintenance of information that an individual has disclosed in a relationship of trust and with the expectation that it will not be divulged to others in ways that are inconsistent with the understanding of the original disclosure (the informed consent documentation) without permission. Confidential information relating to human participants in a research study may include, but is not limited to the personal information listed below:

- a) information relating to the race, gender, sex, pregnancy, marital status, national, ethnic or social origin, color, sexual orientation, age, physical or mental health, well-being, disability, religion, conscience, belief, culture, language and birth of the person;
- b) information relating to the education or the medical, financial, criminal or employment history of the person;
- c) any identifying number, symbol, e-mail address, physical address, telephone number, location information, online identifier or other assignment to the person;
- d) the biometric information of the person;
- e) the personal opinions, views or preferences of the person;
- f) correspondence sent by the person that is implicitly or explicitly of a private or confidential nature or further correspondence that would reveal the contents of the original correspondence;
- g) the views or opinions of another individual about the person; and
- h) the name of the person if it appears with other personal information relating to the person or if the disclosure of the name itself would reveal information about the person.

Form adapted from the confidentiality agreement developed by the University of St Thomas IRB, retrieved from <https://www.stthomas.edu>

As a third party you will have access to research information (e.g. audio or video recordings, DVDs/CDs, transcripts, data, etc.) that include confidential information. Participants have revealed information to the researcher(s) since they have been assured by the researcher(s) that every effort will be made to maintain their privacy throughout the study. That is why it is of the utmost importance to maintain confidentiality when conducting your duties as a transcriber, statistician, co-coder and/or fieldworker during the research study. *Below is a list of expectations you will be required to adhere to in your role as a third party in this study. Review these expectations carefully before signing this form.*

C. THIRD PARTY EXPECTATIONS

To maintain confidentiality, I agree to:

1. Keep all research information that I collect or that is shared with me confidential by not discussing or sharing this information verbally or in any format with anyone other than the principal researcher of this study;
 2. Ensure the security of research information (e.g. audio or video recordings, DVDs/CDs, transcripts, data, etc.) while it is in my possession. This includes:
 - Keeping all data and/or transcript documents and digitized interviews on a password protected computer with password-protected files;
 - Closing any programs and documents when temporarily away from the computer;
 - Keeping any printed transcripts or data in a secure location such as a locked file cabinet;
 - Permanently deleting any digital communication containing the data.
 3. Not make copies of research information (e.g. audio or video recordings, DVDs/CDs, transcripts, data, etc.) unless specifically instructed to do so by the principal researcher;
 4. Give all research information (e.g. audio or video recordings, DVDs/CDs, transcripts, data, etc.) and research participant information, back to the principal researcher upon completion of my duties as a transcriber;
 5. After discussing it with the principal researcher, erase or destroy all research information (e.g. audio or video recordings, DVDs/CDs, transcripts, data, etc.) that cannot be returned to the principal researcher upon completion of my duties in this study.
-

Name of 3rd party involved in research activities: **Professor Philip AE Serumaga-Zake**

Research activity responsible for (transcribing interviews, co-coding of data, statistical analysis, collecting data, etc.): statistical analysis.

Title of Research Study: **Evaluating quality management principles in public schools in the Tshwane District towards improving performance**

Name of Principal Researcher: **Mankhubu Benson Phalane**

By signing this form, I acknowledge that I have reviewed, understand, and agree to adhere to the expectations described above. I agree to maintain confidentiality while performing my duties as acquired

Form adapted from the confidentiality agreement developed by the University of St Thomas IRB, retrieved from <https://www.stthomas.edu>

by the principal researcher. I recognise that failure to comply with these expectations may result in legal action.



21/05/2021

Signature of 3rd party

Date

PHILIP AE SERUMAGA-ZAKE

Print Name

ANNEXURE G: EMAIL COMMUNICATION BETWEEN THE RESEARCHER AND THE GDBE

Dineo.Kgetsane@gauteng.gov.za



Onkarabetse Mooki (GPEDU) <Onkarabetse.Mooki@gauteng.gov.za>
to me, Busi, Gumani, Dineo

Feb 13, 2020, 3:47 PM

Dear Researcher

Kindly receive and acknowledge attached research approval letter to conduct research in institutions and/or offices of the Gauteng Department of Education.

Kind Regards
Onkarabetse Mooki



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GA-RANKUWA

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ANNEXURE H: TURNITIN ORIGINALITY REPORT

Full Dissertation

by M B Phalane

Submission date: 24-Jan-2023 09:17PM (UTC+0200)

Submission ID: 1998633113

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Word count: 63053

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ANNEXURE I: EDITOR'S CERTIFICATE

Hadassah Dannhauser
Freelance Editor 

Member – Professional Editors' Group
Editing – Rewriting – Translation [Afr.-Eng; Eng-Afr.] – Copywriting – Proofreading

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EDITING CERTIFICATE

I, HADASSAH DANNHAUSER, hereby declare that I edited the following dissertation, submitted to the University of South Africa (Unisa), in accordance with the requirements for the degree of Master of Commerce in the subject, Business Management:

**Evaluating quality management principles in
public schools in the Tshwane District
towards improving performance**

By MANKHUBU BENSON PHALANE

Student number: 55846955

I declare that my amendments related only to grammatical and other linguistic aspects, in order to improve the clarity and readability of the presentation. I made no comments or amendments relating to the actual content of the thesis.

Date: 2 March 2023

Signed: 