Exploring the relationship between leadership styles and quality culture in selected South African manufacturing companies

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ABSTRACT

This study explored the critical relationship between leadership styles and establishing a quality culture within the South African manufacturing sector. Amid heightened global competition and internal challenges, the research aimed to determine how transactional, transformational, and servant leadership styles influenced the development and sustainability of a quality-centric organisational culture. Employing a quantitative methodology, data was gathered from 500 participants across various manufacturing companies in the Gauteng region. The empirical findings challenged prevalent leadership theories by revealing that transactional leadership, characterised by structure, rewards, and clear expectations, was the most effective in fostering and sustaining a strong quality culture. This contrasted with transformational and servant leadership, which, while valuable in promoting innovation and employee engagement, played a lesser role in achieving consistent quality outcomes. The study concluded that a strategic blend of transactional leadership's stability and accountability, supplemented by elements of transformational leadership, could most effectively support the long-term competitiveness and operational excellence of manufacturing organisations. These findings contributed to the growing body of literature on leadership and quality management, offering valuable insights for industry leaders within the South African context.

Key terms: Transactional leadership, quality culture, South African manufacturing, leadership styles, organisational performance

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LIST OF ABBREVIATIONS

NWU	North-West University (abbreviation)
TQM	Total quality management
Kaizen	Continuous improvement (Japanese term)
Six Sigma	A quality management methodology aimed at reducing defects
QMS	Quality management systems
CVF	Competing values framework
GDP	Gross domestic product
BRICS	Brazil, Russia, India, China, South Africa
IPAP	Industrial Policy Action Plan
EFQM	European Foundation for Quality Management
DMAIC	Define, measure, analyse, improve, control
MLQ	Multifactor leadership questionnaire
SLQ	Servant leadership questionnaire
CFA	Confirmatory factor analysis
KMO	Kaiser-Meyer-Olkin
EMS-REC	Economic and Management Sciences Research Ethics Committee
IT	Information technology
SPSS	Statistical Package for the Social Sciences
ANOVA	Analysis of variance
POPIA	Protection of Personal Information Act
NQF	National Qualifications Framework
HOD	Head of department
SD	Standard deviation

CHAPTER 1 INTRODUCTION AND CONTEXT

1.1 Introduction

The South African manufacturing sector is becoming more aware of the crucial importance of leadership in fostering a culture that prioritises quality (Barbosa *et al*., 2017:439). This study aimed to investigate the intricate relationship between different leadership styles and establishing a culture that places a high value on quality in manufacturing companies in South Africa. The research focused on a quality-centric culture, which pertains to an organisational setting where quality is deeply embedded in all processes, decisions, and actions (Chen *et al*., 2020:452). Recent research, exemplified by the work of Nguyen and Hang (2023:389), highlights the significant influence of leadership on organisational culture, specifically in improving quality. In addition, the research conducted by Zhang *et al*. (2022) in the Chinese setting demonstrated a notable association between leadership strategies and the effectiveness of quality management systems. These valuable observations, together with the absence of literature that explicitly addresses the South African manufacturing sector, supported the significance of this research.

The South African manufacturing industry is currently at a critical juncture as it grapples with both international competitiveness and domestic obstacles (Kahn *et al*., 2022:38). Effective leadership styles that promote a culture focused on quality could be crucial to improve competitiveness and sustainability (Chen *et al*., 2020:463). The objective of this study was to address the current lack of understanding by presenting empirical data and practical observations on the impact of various leadership styles on establishing and maintaining a culture that prioritises quality in manufacturing companies in South Africa. In today's competitive business environment, prioritising a culture that emphasises quality is essential and a fundamental element to achieving long-term success (Gambi *et al*., 2015:1464). This generally accepted proposition in academic circles argues that an organisation's success and customer happiness strongly correlate with its prioritisation of quality (Jorge Luis *et al*., 2019:1603).

The focal point of this discourse revolves around the significance of leadership. Empirical research indicates that leaders with proficient leadership abilities influence employee behaviour and improve productivity (Saleem *et al*., 2019:316). These leaders provide guidance and bring about a transformation inside their teams, encouraging them to take on proactive and dynamic responsibilities (Tortorella *et al*., 2021:1284). Their leadership style is crucial in shaping the organisational culture (Garengo & Betto, 2024:152). From this perspective, it may be argued that capable leadership can provide a setting characterised by cooperative teamwork and optimal achievement, whereas inadequate leadership poses the danger of negative consequences (Abalkhail, 2022:302). Particularly within South Africa's manufacturing industry framework, the case becomes even more persuasive (Gates & Adetunji, 2020:153). The sector, which plays a

crucial role in the country's economic advancement, encounters tremendous obstacles, such as exorbitant manufacturing expenses and a scarcity of a competent workforce. The value of leadership styles in fostering a culture of excellence becomes more important in this situation. The efficacy of the industry's leadership and the strength of its dedication to quality are closely connected to its competitiveness and sustainability (Gözükara *et al*., 2019:1304).

1.2 Problem statement

The significance of quality culture in improving organisational performance is widely recognised (Dimitrantzou *et al*., 2022:1718; Gambi *et al*., 2021:1059; Zgodavova *et al*., 2017:1057). However, there is a noticeable absence of research examining the specific impact of leadership styles on this culture in South African manufacturing. The current body of research (Ahmed *et al*., 2019:319; Akanmu *et al*., 2023:1218; Osayuwamen & Chengedzai, 2017:45) focuses on the overall impact of quality culture on performance but fails to analyse the specific leadership dynamics distinct from the South African context. The South African manufacturing industry, an essential component of the nation's economic machinery (Kreuser & Newman, 2018:40), is confronted by distinctive obstacles (Francis *et al*., 2019:71). These factors include increased expenses in manufacturing, innovation constraints (Oerlemans *et al*., 2022:103), constrained financial assets, a scarcity of proficient workforce (Maisiri & Van Dyk, 2021:2), and intense worldwide rivalry, particularly from developing economies. These problems highlight the need for leadership styles capable of navigating these complexities and fostering a strong culture of excellence (Maisiri *et al*., 2023:239). This study sought to address this deficiency by examining the impact of various leadership styles on establishing and perpetuating a culture that prioritises quality in the South African manufacturing sector. The objective was to investigate the influence of different leadership methods on the sector's capacity to maintain high-quality standards in the face of its complex problems. This research aimed to contribute to the existing knowledge and provide practical insights for industry leaders.

1.3 Objectives of the study

The primary objective of this study was to analyse the impact of different leadership styles on developing a culture focused on quality in South African manufacturing companies. This research examined how these leadership approaches specifically contribute to enhancing organisational performance, competitiveness, and resilience in the face of challenges presented by the global and local manufacturing environments. By addressing the research gap, this study offers detailed empirical insights into the dynamic correlation between leadership styles and quality culture in the

South African manufacturing sector. Consequently, it provides a nuanced understanding of leadership's crucial role in promoting quality excellence and sustainable growth.

Three secondary objectives further underlay this study, namely:

- identify and categorise leadership styles in South African manufacturing companies;
- thoroughly analyse the constituents of a quality culture in the manufacturing sector; and
- examine the dynamics between leadership styles and quality culture in South African manufacturing.

This research was driven by the central question: What is the relationship between different leadership styles and quality culture in South African manufacturing, and how do these styles impact the development and maintenance of a positive quality culture within manufacturing companies?

1.4 Scope of the study

This research explored how different leadership styles influence the development of a quality culture within companies in the academic field of people management. The study examined how various leadership approaches contribute to establishing a culture that emphasises quality and continuous improvement. This study specifically examined the manufacturing industry in Gauteng, South Africa, because of its crucial contribution to the province's economy and its significance in adopting efficient human resource management strategies. Johannesburg and its environs, renowned for their dense clustering of industrial companies, offered a substantial pool of participants for the study. This study aimed to gain insights into the impact of leadership styles and quality culture on organisational performance and sustainability by analysing their interaction in this environment.

1.5 Research methodology

1.5.1 Literature study

The literature review formed the theoretical foundation of this research, offering a critical analysis of the current academic discourse on leadership styles, organisational culture, and quality management, particularly within the South African manufacturing industry. This review aimed to contextualise and support the subsequent empirical investigation, establishing a solid theoretical foundation to understand the relationship between leadership and quality culture.

The study examined leadership theories, including transformational, transactional, and servant leadership. As defined by Burns and further developed by Bass, transformational leadership was recognised for its capacity to stimulate creativity and cultivate a long-term vision within companies (Kwan, 2020:324). This leadership style was deemed especially helpful in fostering a culture of quality via intellectual stimulation and personalised concern (Jensen *et al*., 2019:5). In contrast, transactional leadership emphasised the preservation of stability via a defined framework of rewards and penalties, thereby facilitating operational consistency (Berkovich & Eyal, 2021:131). Greenleaf's concept of servant leadership was assessed for its capacity to cultivate a collaborative and trust-centric organisational atmosphere, enhancing employee empowerment and promoting a solid quality culture (Nauman *et al*., 2022:18).

This review evaluated organisational culture models using these leadership theories, including Schein's three-layered model and the competing values framework (CVF) (Assoratgoon & Kantabutra, 2023:1; Espasandin-Bustelo *et al*., 2021:613). These models clarified how leadership styles affected organisational norms, beliefs, and behaviours, thereby defining the corporate culture. Chapter 2 outlined Schein's model, which classified culture into artefacts, proclaimed ideals, and underlying assumptions, offering a comprehensive perspective on how leadership could instil a quality-focused culture at all levels (Solomon & Brown, 2021:1204). The CVF emphasised the correlation between various leadership styles and distinct cultural types, such as clan cultures prioritising collaboration, and adhocracy cultures encouraging innovation, each significantly contributing to quality outcomes (Espasandin-Bustelo *et al*., 2021:613).

The literature review examined essential quality management frameworks, such as total quality management (TQM), continuous improvement (Kaizen), and Six Sigma, as discussed in Chapter 2. TQM, advocated by leaders such as Deming and Juran, underscores the necessity of integrating quality into all organisational processes (Liu *et al*., 2021:1696). Kaizen promoted gradual enhancements that collectively improved organisational performance, especially advantageous in competitive sectors such as manufacturing (Lizarelli *et al*., 2021:983). Six Sigma, characterised by its data-driven emphasis on defect reduction, was acknowledged for its significance in the South African manufacturing industry, where stringent quality standards were essential to sustain global competitiveness (De Mast *et al*., 2022:7).

1.5.2 Empirical study

Figure 1.1, the Saunders research onion, is the foundational framework for the empirical study, guiding the methodological approach. Developed by Saunders, Lewis, and Thornhill, the research onion illustrates the various layers of the research methodology, from philosophical paradigms to

data-collection techniques. By systematically peeling through layers such as the research philosophy, approach, strategy, choices, time horizon, and techniques, this model ensures a structured and comprehensive approach to research design. The research onion was utilised in this study to clarify the sequential decisions that shaped the research process, ensuring coherence between theoretical underpinnings and practical execution.

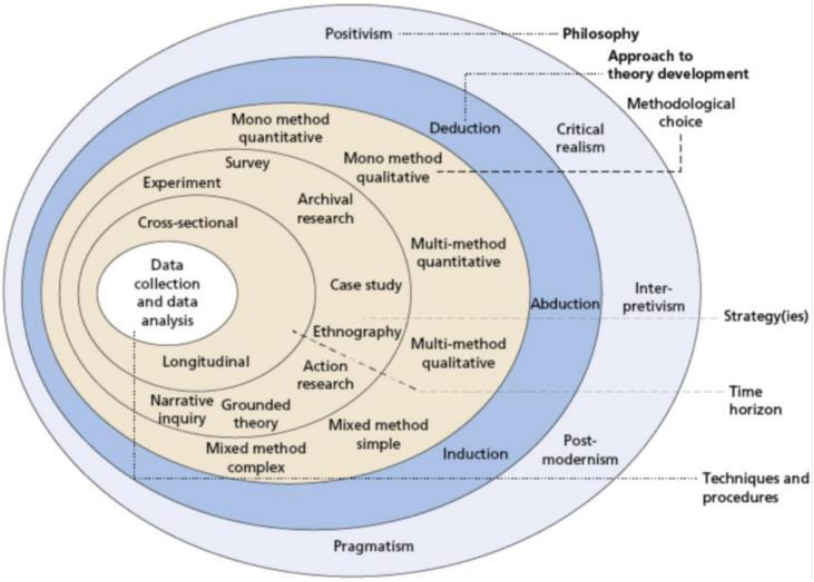

Figure 1.1: The Saunders research onion framework

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

This study used a deductive research technique consistent with the positivist paradigm to investigate the correlation between leadership styles and cultivating a quality-centric culture within the South African manufacturing sector. A deductive strategy was considered appropriate for this study as it enables the researcher to commence with established hypotheses and experimentally evaluate them through data collection and analysis (Saunders *et al*., 2023:154). The emphasis was on transformational, transactional, and servant leadership styles and their impact on organisational quality culture, aligning with prior research in organisational behaviour and quality management. The study utilised a quantitative design, aligning with the positivist ideology that aims for objective and measurable outcomes. Using standardised questionnaires, data was gathered from 500 managers and employees in diverse manufacturing companies in Gauteng, South Africa. This approach facilitated the collection of quantitative data, which could subsequently be evaluated through statistical techniques to discern patterns and relationships between leadership styles and the enhancement of quality culture (Gravetter & Forzano, 2011:31).

The principal research strategy used a survey methodology. Surveys are an efficient method to collect data from a substantial sample, allowing the researcher to evaluate hypotheses regarding the correlation between leadership styles and quality culture. The selection of the survey technique was driven by the necessity to guarantee that the results applied to the whole South African manufacturing sector (Saunders *et al*., 2023:191). Structured questionnaires served as the principal instrument for data collection, guaranteeing uniformity and comparability in responses among various companies. The target demographic consisted of managers and employees in the Gauteng manufacturing sector, and snowball sampling was used to recruit participants. Although not entirely representative, this method was suitable considering the exploratory nature of the research and the difficulties in recruiting certain participant groups (Saunders *et al*., 2023:316). The data-gathering procedure was overseen to guarantee adherence to ethical standards, encompassing informed consent and participant anonymity.

Table 1.1 summarises the research methodology employed in this study, outlining the structured approach taken to investigate the relationship between leadership styles and quality culture. The study adopts a positivistic research paradigm, emphasising objectivity and the testing of hypotheses. A deductive approach was used, allowing for the testing of pre-existing theories. The research follows a mono-method, focusing on a single data-collection technique. The survey strategy was chosen as the primary method to gather participant data. Finally, the study was conducted with a cross-sectional time horizon, capturing a data snapshot at a specific time to analyse current trends and relationships.

Table 1.1: Research methodology summary

Category	Used in this study
Research paradigm	Positivistic research
Research approach	Deductive approach
Methodological choice	Mono method
Research strategy	Survey
Time horizon	Cross-sectional

Source: Own

1.6 Limitations of the study

The study was geographically focused on the Gauteng Province in South Africa, specifically emphasising Johannesburg and its neighbouring areas. This specific focus allowed for a thorough examination of the manufacturing sector in the area but limited the generalisability of the study's

findings to other regions or countries. The research exclusively focused on the manufacturing industry, restricting its coverage to a specific sector. This study's narrow scope may not fully capture the complexities and nuances of leadership styles and quality culture across different industries, limiting the research findings' applicability to broader contexts.

Another constraint is the size and composition of the sample. This survey targeted individuals in managerial and personnel roles with at least one year of experience in their present employment. This criterion ensured expertise and knowledge on the issue but may inadvertently exclude the perspectives of newly hired or less experienced staff. This constraint could have created a bias in the results and analyses, as the sample might not fully represent the entire range of experience levels in the workforce's diversity. The study used a quantitative methodology to gather and analyse data. While this framework provided a thorough structure for hypothesis testing and statistical validation, it may not fully capture the nuanced and subjective aspects that a qualitative method might have provided. This constraint is particularly relevant when analysing complex and varied concepts such as leadership styles and quality culture, as subjective experiences and perspectives can offer valuable insights.

This study used a cross-sectional research methodology, which included gathering data at a particular point in time. The intrinsic restrictions of this design hindered the observation of temporal changes or trends, making it challenging to draw solid conclusions on causality or the evolution of the variables under study. Using non-probability sampling procedures, such as snowball sampling, can introduce bias into the research. The study's findings may have limitations in terms of their generalisability due to the sample's potential lack of full representativeness of the larger community. The research relied on self-administered questionnaires to collect data. While effective and providing broad coverage, this method is susceptible to self-reporting bias. Participants may have provided responses that they believe are socially desirable or acceptable, even if these do not reflect their true thoughts or experiences. This tendency could affect the validity of the research findings.

1.7 Definitions of key concepts

Leadership

Leadership is the establishment of a relationship between an individual (the leader) and a group (the followers), where the leader directs or determines the group's behaviour (Keskes *et al*., 2018:271).

Leadership styles

A leadership style refers to the specific strategies and behaviours leaders use to shape and guide their relationships with colleagues (Molek *et al*., 2023:222).

Transformational leadership

Transformational leadership involves guiding and encouraging employees by transforming their efforts. This leadership strategy aims to fulfil employees' higher-order demands to motivate them to achieve the organisational goals (Jensen *et al*., 2019:5).

Transactional leadership

Transactional leadership is founded on exchanges of a monetary and non-monetary nature. This leadership strategy encompasses providing prizes to employees for their exceptional effort and exemplary performance and imposing sanctions when their work effort or outcomes fall short of expectations. Therefore, incentive structures are implemented to enhance employees' achievement of organisational objectives (Jensen *et al*., 2019:5).

Servant leadership

Servant leadership prioritises altruistic principles to motivate followers to engage in behaviours that foster their personal development. These include prioritising the needs of others and highlighting the interconnected moral, emotional, and spiritual dimensions of leadership (Andrade, 2023:53).

Organisational culture

Organisational culture refers to a collective set of beliefs, values, and behaviours that employees recognise and adhere to inside an organisation (Tortorella *et al*., 2021:1283).

Quality culture

Quality culture, as defined by the European University Association, is an organisational culture that aims to enhance quality continuously. It consists of two key elements:

• the *cultural/psychological* element, which includes shared values, beliefs, expectations, and

• a dedication to quality; and the *structural/managerial* element, which involves processes that integrate individual efforts to improve quality (Iqbal *et al*., 2023:603).

Quality management

Quality management refers to implementing strategies, ideas, and processes that promote customer focus, continuous improvement, teamwork, and product quality (Martin *et al*., 2021:360).

1.8 Layout of the study

Chapter 1: Introduction and research context

This chapter provided an overview of the research background and outlined the study's primary objectives. It aimed to establish the context for the following chapters by thoroughly understanding the background and importance of the study issue. This chapter thoroughly explains the research question, focusing on the specific field of study and outlining the methodological and conceptual constraints that will shape the academic investigation.

Chapter 2: Review of current literature and theoretical framework

This chapter offers the theoretical basis for the inquiry by comprehensively examining existing literature related to the chosen research issue. This study aims to identify gaps in current knowledge and to establish theoretical constructs as the foundation for future research.

Table 1.2 offers a systematic overview and outline of the chapter on the interrelationships among critical variables in the manufacturing sector, i.e. manufacturing, leadership, organisational culture, quality culture, and leadership styles. This setup demonstrates how leadership impacts organisational and quality cultures in the manufacturing setting. It emphasises how manufacturing plays a fundamental role in influencing operational performance, innovation, and competitive advantage through the interaction of several constructs. The table illustrates how leadership styles and techniques significantly affect cultural and operational paradigms, creating an environment where quality and excellence are paramount.

Table 1.2: Interrelationships among critical variables

Construct	Interaction with other constructs	Role within a manufacturing context
Manufacturing	The context for the application of leadership styles, influencing and influenced by quality culture and organisational culture	The sector where the interplay of leadership and culture directly affects productivity, innovation, and quality outcomes.
Leadership	Directly impacts both quality culture and organisational culture through leadership styles.	Leaders' overall strategy and behaviour foster a culture prioritising quality and organisational values.
Organisational culture	Shaped by leadership; influences quality culture	Provides the foundational environment for operational practices and quality orientation.
Quality culture	Influenced by leadership styles and organisational culture	Essential for ensuring continuous improvement and competitiveness.
Leadership styles	Impacts quality culture and organisational culture; interacts with manufacturing	Determines the approach to leadership that influences organisational effectiveness and the cultivation of a quality-centric culture.

Source (Own)

Chapter 3: Research methodology

This chapter provides a thorough overview of the data collection and analysis methodologies. It outlines the research design, sampling techniques, data-collection instruments, and analytical approaches to establish the study's rigour and validity.

Chapter 4: Data presentation and analysis

This chapter emphasises the transcription, presentation, and interpretive analysis of the collected empirical data. The main goal is to analyse raw data to uncover meaningful insights that align with the research questions outlined in Chapter 1.

Chapter 5: Conclusions and importance

The final part of this paper offers a thorough analysis by exploring its constraints and proposing recommendations for practical use and future academic research. The concluding section thoroughly summarises the research results and their implications, assessing their significance within academic and practical contexts.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

Leadership and organisational culture play a pivotal role in determining the success of manufacturing companies, particularly in regions such as South Africa, where economic pressures, skill shortages, and the demands of global competitiveness significantly challenge the manufacturing sector (Kahn *et al*., 2022:38). In modern manufacturing environments, leadership styles are critical, as they directly shape the culture of quality that drives operational efficiency and sustainability (Ali *et al*., 2015:162). Companies that demonstrate strong leadership are better positioned to cultivate cultures that emphasise continuous improvement and adherence to high standards, which are essential for maintaining global competitiveness (Gates & Adetunji, 2020:153).

The literature on leadership styles offers valuable insights into how different approaches influence the development of a quality culture in manufacturing. Key leadership styles, such as transformational, transactional, and servant leadership, present distinct paths toward organisational success (Garengo & Betto, 2024:152; Chen *et al*., 2020:452). Transformational leadership, for instance, is associated with fostering innovation and achieving long-term success by embedding a culture of quality at every level of the organisation (Pradhan & Jena, 2019:37). Nevertheless, how these leadership styles impact quality culture within the specific context of South African manufacturing remains insufficiently explored (Dimitrantzou *et al*., 2022:1718).

Quality culture, defined by shared values, beliefs, and practices aimed at continuous improvement and excellence, is crucial for maintaining high standards in manufacturing (Wu, 2015:799). The relationship between leadership styles and quality culture is an area of keen interest for academic researchers and industry professionals, as it determines the effectiveness of quality management systems (Jorge Luis *et al*., 2019:1603). Leaders are instrumental in establishing a quality-oriented culture, setting performance expectations, and ensuring employees actively pursue excellence. Their influence is central to organisational culture shaping (Mirkamali *et al*., 2011:140). Research highlights that transformational leadership is particularly effective in fostering a robust quality culture, especially in dynamic environments such as South Africa's manufacturing sector (Tortorella *et al*., 2021:1284). Likewise, servant leadership, which focuses on employee growth and well-being, encourages collaboration and supports the maintenance of high-quality standards (Qiu *et al*., 2020:9). While transactional leadership, with its emphasis on rewards and clear expectations, helps meet quality metrics, it may not foster innovation to the same extent as transformational approaches (Jensen *et al*., 2019:5).

Given the unique challenges the South African manufacturing sector faces, including high production costs and a shortage of skilled labour, leadership styles that nurture a strong quality culture are critical to sustaining competitiveness (Maisiri *et al*., 2023:239). Despite these challenges, limited research examines the impact of specific leadership styles on quality culture within South African manufacturing companies (Ahmed *et al*., 2019:319). This chapter addresses this gap by reviewing the theoretical frameworks of leadership and quality culture, focusing on the South African manufacturing industry. Through an analysis of existing literature, this chapter will discuss the relevance of critical leadership theories in building a sustainable quality culture in manufacturing companies. Understanding the nuanced relationship between leadership styles and quality culture is crucial for manufacturing companies that aim to enhance operational performance and strengthen global competitiveness (Saleem *et al*., 2019:316). This chapter will delve into these dynamics, providing a theoretical foundation for the empirical analysis that will follow, centred on the South African context.

2.2 Theoretical framework

2.2.1 Transformational leadership theory

Transformational leadership, first conceptualised by Burns and later expanded by Bass, remains a central theory in leadership studies, mainly due to its emphasis on driving organisational change and enhancing innovation (Kwan, 2020:324). A defining aspect of this leadership style is its focus on motivating individuals to surpass their typical performance by fostering intellectual stimulation, providing individualised support, and inspiring a shared sense of purpose (Berkovich & Eyal, 2021:131). This alignment between personal and organisational objectives promotes intrinsic motivation, encouraging employees to contribute toward broader organisational goals (Jensen *et al*., 2019:5).

Critical features of transformational leadership include acting as a role model, articulating a clear and compelling vision, encouraging creative thinking, and addressing individual developmental needs. These elements collectively create an environment where continuous improvement and excellence are central, promoting a culture prioritising innovation and high performance (Fenech *et al*., 2023:3). Transformational leadership is particularly relevant in regions such as South Africa, where the manufacturing sector faces significant external pressures such as labour shortages and global competition. By fostering a culture of quality and adaptability, transformational leaders help companies navigate these challenges, thereby enhancing competitiveness in an often unstable economic landscape (Maisiri *et al*., 2023:234). The emphasis on proactive engagement and innovation enables companies to build a skilled workforce and is deeply invested in quality-

driven initiatives, which are vital for maintaining operational excellence (Gözükara *et al*., 2019:1304).

The empirical evidence supporting transformational leadership underscores its significant positive impact on organisational outcomes and employee engagement. Leaders who adopt this style tend to cultivate a workplace where employees are more creative, feel valued, and are willing to go beyond their primary responsibilities. This results in greater organisational agility and a more substantial capacity to respond to evolving market conditions (Ali *et al*., 2015:162). Transformational leadership complements TQM principles, mainly its focus on fostering a collaborative environment and driving continuous improvement. By aligning the organisational vision with quality initiatives and empowering employees to take an active role in quality management, transformational leadership plays a crucial role in embedding a quality culture vital for a manufacturing company's long-term sustainability (Rehmani *et al*., 2020:4).

2.2.2 Transactional leadership theory

Transactional leadership is built on the foundation of a transparent exchange system, where rewards and penalties regulate performance. This model establishes structured goals, and rewards followers for achieving them, while consequences follow when they do not meet expectations (Nguyen *et al*., 2022:118). This leadership style is distinct from transformational leadership, as it relies heavily on reinforcing tasks and performance rather than inspiring individuals to go beyond their self-interest for the collective benefit of the organisation (Berkovich & Eyal, 2021:131).

A key aspect of transactional leadership is its focus on contingent rewards, where specific instructions and objectives are provided, and rewards are offered upon successful completion. This direct and measurable system ensures that employees clearly understand what is expected of them and are motivated by the potential rewards (Jensen *et al*., 2019:5). Additionally, management by exception is a central feature, allowing leaders to step in only when deviations from expected performance occur. This method reduces the need for constant supervision while maintaining order and correcting issues (Hartnell *et al*., 2016:850).

Studies suggest that transactional leadership is particularly effective in industries where consistency, stability, and process adherence are critical. In such environments, including manufacturing, this approach supports the efficient attainment of operational objectives, ensuring that workers adhere to defined tasks and performance standards (Mouazen & Hernández-Lara, 2023:149). In South Africa's manufacturing sector, where rising production costs and stiff global competition are prevalent, transactional leadership's emphasis on maintaining clear expectations

and accountability helps companies meet their production and quality goals (Lasrado & Kassem, 2021:170). This leadership model ensures operational efficiency and reliability by promoting discipline and a structured work environment (Gözükara *et al*., 2019:1304).

While transactional leadership excels in maintaining order and achieving consistency, it is less effective in fostering innovation or encouraging flexibility. The focus on compliance and routine may limit employees' ability to engage in creative problem-solving, which is increasingly necessary in dynamic industries that require ongoing improvement and adaptability (Pradhan & Jena, 2019:32). This limitation can be particularly pronounced within contexts where fostering a culture of innovation is critical to quality management and long-term success (Cláudia Sousa *et al*., 2021:5). Despite these challenges, transactional leadership remains vital in consistently meeting quality standards. Implementing reward systems and performance monitoring creates an environment where employees are driven to meet established metrics. This is especially important in sectors such as manufacturing, where maintaining operational stability and meeting high-quality standards are crucial for competitiveness (Iqbal *et al*., 2023:603).

2.2.3 Servant leadership theory

Servant leadership, conceptualised by Greenleaf in 1977, emphasises leaders supporting and serving their teams rather than focusing on personal or organisational ambitions (Elche *et al*., 2020:2036). The central tenet of this model is prioritising the development, well-being, and empowerment of employees. By adopting this approach, leaders aim to nurture a workplace environment where engagement, collaboration, and personal growth are encouraged (Nauman *et al*., 2022:18). Servant leadership is distinguished from other models' focus on the followers' needs above organisational objectives. Unlike transformational leadership, which is goal-oriented, or transactional leadership, which is based on rewards and consequences, servant leadership views the growth of the individual as the primary goal. This shift in focus fosters a highly inclusive and collaborative culture, frequently leading to improved employee satisfaction and loyalty (Andrade, 2023:54).

Servant leadership's core characteristics include stewardship, empathy, active listening, and a commitment to personal growth. These attributes contribute to a work environment where trust and support are prioritised, ultimately enhancing employees' intrinsic motivation and creativity (Elche *et al*., 2020:2038). Servant leaders create a positive atmosphere by demonstrating supportive and responsive behaviours to their employees' needs (Hartnell *et al*., 2023:536). Servant leadership is particularly effective in promoting a culture of solid quality within contexts such as manufacturing. Leaders who follow this approach encourage open communication and

cooperation, which helps teams work more efficiently towards achieving quality targets (Lasrado & Kassem, 2021:152). By building a culture of mutual respect, servant leaders ensure that quality improvement becomes a shared responsibility across the organisation, which is crucial for maintaining high standards in production (Mavis Agyemang *et al*., 2019:2).

The benefits of servant leadership also extend to other positive organisational outcomes, such as enhanced employee retention, greater job satisfaction, and improved organisational citizenship. These results create a work environment that values long-term sustainability and a solid commitment to quality (Martinez & Leija, 2023:185). Within the context of South African manufacturing companies, servant leadership plays a crucial role in addressing challenges such as skills shortages and economic pressures, fostering employee commitment and creating opportunities for personal and professional development (Molek *et al*., 2023:221).

2.2.4 Quality management theories

Over the past decades, quality management theories have developed substantially, offering frameworks for companies to enhance product and service quality across various industries. These theories, including TQM, continuous improvement (Kaizen), and Six Sigma, provide systematic approaches that focus on process optimisation and customer satisfaction. They are pivotal in promoting continuous improvement, minimising defects, and ensuring that businesses consistently meet market expectations (Akanmu *et al*., 2023:1219).

2.2.4.1 Total quality management (TQM)

TQM stands out as one of the most comprehensive approaches to quality management. Developed by influential figures such as W Edwards Deming, Joseph Juran, and Philip Crosby, TQM emphasises the need for quality to permeate all levels and departments of an organisation. The core aim of TQM is long-term success, achieved through a relentless focus on customer satisfaction (Liu *et al*., 2021:1696). A key aspect of TQM is its emphasis on continuous improvement, encouraging companies to constantly review and refine their processes to eliminate inefficiencies and enhance performance. TQM's all-encompassing approach makes it distinct, ensuring that everyone within the organisation, from top executives to entry-level employees, is engaged in quality initiatives (Kumar *et al*., 2020:1008). TQM has proven to be especially effective in industries where consistency and quality are crucial, such as manufacturing. In South Africa's manufacturing sector, where staying competitive is a significant challenge, TQM provides a robust framework to address these challenges by embedding a quality culture throughout the organisation (Haffar *et al*., 2019:1368).

2.2.4.2 Continuous improvement (Kaizen)

Kaizen, a Japanese philosophy that translates to *continuous improvement*, is another cornerstone of quality management theory. It encourages companies to pursue small, incremental changes that substantially improve over time. By optimising processes and eliminating inefficiencies, Kaizen fosters a culture of ongoing organisational improvement and innovation (Lizarelli *et al*., 2021:983). In highly competitive environments such as manufacturing, Kaizen is crucial in enhancing operational efficiency and reducing waste. The South African manufacturing sector, which contends with global competition and local challenges, can significantly benefit from Kaizen's adaptable approach. It empowers employees at all levels to contribute to process improvements, creating a more dynamic and responsive manufacturing environment (Lizarelli *et al*., 2021:984).

2.2.4.3 Six Sigma

Six Sigma, first developed by Motorola in the 1980s, focuses on improving quality by identifying and eliminating the causes of defects while reducing variability in processes. This methodology relies heavily on statistical analyses and is designed to achieve near-perfect quality, with a goal of fewer than 3.4 defects per million opportunities (De Mast *et al*., 2022:7). The data-driven nature of Six Sigma is particularly beneficial in manufacturing environments, where even slight deviations can significantly impact product quality. Adopting Six Sigma within the South African manufacturing industry can greatly enhance process control and bring production standards in line with international benchmarks. Through methodologies such as DMAIC (define, measure, analyse, improve, control), manufacturers can systematically tackle quality issues, thereby improving overall efficiency and product consistency (Markatos & Mousavi, 2023:1666).

2.2.4.4 Application in South African manufacturing

The South African manufacturing industry faces unique challenges, including high operational costs and stiff global competition. To overcome these hurdles, implementing quality management theories such as TQM, Kaizen, and Six Sigma offers a strategic advantage. These frameworks help companies maintain a competitive edge in a rapidly evolving global market by focusing on continuous improvement and reducing defects. Integrating these theories within South African manufacturing companies can drive a more robust quality culture, enhance customer satisfaction, and boost overall productivity, ensuring long-term sustainability and market relevance (Ikram *et al*., 2021:1668).

2.2.5 Organisational culture theories

Organisational culture encompasses the shared beliefs, values, and assumptions that shape how individuals within a company interact, make decisions, and contribute to overall performance. As companies operate in increasingly complex environments, a deeper understanding of organisational culture has become vital to maintain a competitive advantage and ensure strategic alignment (Amro *et al*., 2021:37). Theories of organisational culture offer frameworks to explore how these internal cultural dimensions affect a variety of outcomes, such as innovation, quality management, and the organisation's overall effectiveness (Espasandin-Bustelo *et al*., 2021:613).

2.2.5.1 Schein's three-layered model

One of the most well-known approaches to understanding organisational culture is Edgar Schein's three-layered model, often called the iceberg model. This framework categorises culture into three levels: artefacts, espoused values, and underlying assumptions. Artefacts are the visible, tangible elements of culture, such as office layout or formal dress codes, while espoused values represent the explicitly stated principles and norms guiding behaviour. Beneath these lie the deeply ingrained, often unconscious assumptions that shape organisational life (Assoratgoon & Kantabutra, 2023:1). The interaction of these layers creates a cohesive culture that influences daily operations and long-term strategic outcomes. Leaders play a critical role in reinforcing these values and assumptions, helping to shape an organisational environment that supports specific goals and behaviours (Nguyen *et al*., 2023:383).

2.2.5.2 The competing values framework (CVF)

Another significant model in the study of organisational culture is the CVF, developed by Cameron and Quinn in 1999. This framework classifies cultures into four types: clan, adhocracy, market, and hierarchy. Each type reflects different organisational priorities. Clan cultures emphasise collaboration and a sense of belonging; adhocracy cultures focus on innovation and risk-taking; market cultures are competitive and goal-oriented; and hierarchy cultures value stability and structured processes. The CVF is a practical tool to assess and align an organisation's culture with its strategic objectives and balance competing priorities (Espasandin-Bustelo *et al*., 2021:610). In industries such as manufacturing, where balancing innovation and strict adherence to standards is critical, the CVF helps companies achieve operational efficiency and adaptability (Ikram *et al*., 2021).

2.2.5.3 Denison's model of organisational culture

Denison's model of organisational culture highlights four cultural traits, i.e. involvement, consistency, adaptability, and mission, as critical predictors of organisational performance. In this model, high involvement fosters employee participation and empowerment, enhancing creativity and productivity. Conversely, consistency supports efficiency through shared systems and processes, while adaptability ensures that companies can respond effectively to external pressures or changes. Finally, a clear mission aligns organisational efforts with broader strategic goals (Kiziloglu, 2022:22). This model is particularly relevant in competitive sectors such as manufacturing, where balancing consistency with the flexibility to adapt to market shifts is critical for sustaining high-quality standards and remaining competitive (Oerlemans, 2022:103).

2.2.5.4 Organisational culture and performance

The relationship between organisational culture and performance has been widely examined, with evidence suggesting that a cohesive and well-aligned culture can positively affect financial results and operational efficiency (Hald *et al*., 2020:458). However, this relationship is complex, as different cultural dimensions can impact various aspects of performance. For instance, innovation-driven cultures such as adhocracy tend to excel in fostering creativity and new product development. In contrast, hierarchical cultures may prioritise process efficiency but need help to adapt to changing conditions (Hald *et al*., 2020:459).

Recent studies have also highlighted the importance of aligning leadership styles with organisational culture to enhance performance outcomes. Leaders adept at understanding and shaping their organisation's cultural dimensions are more likely to foster environments conducive to long-term success, including improvements in quality management and employee engagement (Hartnell *et al*., 2016).

2.3 Leadership

2.3.1 Leadership defined

Leadership can be defined as the ability of an individual to influence, guide, and motivate a group towards achieving shared objectives. It entails more than just directing; leadership involves fostering collaboration, inspiring action, and enabling others to contribute to the organisation's success. As noted by Plachy and Smunt (2022:403), leadership plays a crucial role in shaping the dynamics of a team, providing direction, and maintaining cohesion within the group. Modern

interpretations of leadership extend beyond traditional hierarchical structures, focusing instead on the capacity of leaders to inspire, mobilise, and empower their followers.

The role of leadership in driving organisational success is profound. Influential leaders significantly impact overall performance by boosting employee engagement, enhancing productivity, and cultivating a positive organisational climate. Leaders act as role models, influencing their teams' behaviour, attitudes, and commitment to organisational values. A strong leader is essential during periods of transition or challenge, as they ensure the organisation stays aligned with strategic goals while maintaining employee morale and stability (Martin *et al*., 2021:361). Additionally, leadership is critical in fostering a quality culture within companies, particularly in manufacturing. Leaders help set and reinforce values related to quality, driving continuous improvement and operational excellence (Ikram *et al*., 2021:1667).

2.3.2 Theoretical perspectives on leadership

Leadership has been extensively studied, resulting in various theories explaining how leaders influence organisational outcomes and employee behaviours. These theories have evolved, offering more nuanced insights into the factors contributing to effective leadership. Below are some vital theoretical perspectives that have shaped the contemporary understanding of leadership.

2.3.2.1 Trait theory

One of the earliest perspectives, the trait theory, suggests that specific individuals possess inherent qualities that make them natural leaders. These traits, i.e. intelligence, determination, integrity, and self-confidence, distinguish leaders from non-leaders. Despite its influence, the trait theory has faced criticism for overlooking the situational context within which leadership occurs. However, ongoing research explores how specific personality traits contribute to leadership effectiveness, acknowledging that these traits alone are insufficient determinants of leadership success (Andrade, 2023:2).

2.3.2.2 Behavioural theories

Behavioural theories shift the focus from innate traits to the actions and behaviours that leaders exhibit. These theories assert that effective leadership is rooted in what leaders do rather than who they are (Andrade, 2023:2). Behavioural theories typically distinguish between task-oriented behaviours, which involve organising tasks and ensuring that goals are achieved, and people-

oriented behaviours, which emphasise relationship-building and employee development. The balance between these two behavioural dimensions is critical to leadership effectiveness, highlighting the role of learned behaviours in successful leadership.

2.3.2.3 Contingency theories

Contingency theories propose that a leadership style's effectiveness depends on contextual factors. Fiedler's contingency model, for example, suggests that leadership success is determined by how well a leader's style aligns with situational elements, such as the quality of leader-member relationships, task structure, and the leader's positional power (Cater-Steel *et al*., 2022:3). Similarly, Hersey and Blanchard's situational leadership theory emphasises that leaders must adapt their approach based on the development level of their followers, asserting that no single leadership style is universally effective. Flexibility, therefore, becomes a key component of successful leadership under contingency models (van Diggele, 2022:2).

2.3.2.4 Transformational and transactional leadership

Bass conceptualised transformational leadership. It centres on leaders who motivate followers to go beyond their primary responsibilities, often by fostering a shared purpose and vision. Leaders who adopt this style are typically focused on driving change, promoting innovation, and building solid relationships with their teams. This leadership style encourages a future-oriented mindset for organisational growth and continuous improvement (Pena, 2024:303). In contrast, transactional leadership is based on a transparent system of rewards and consequences. It emphasises maintaining stability and ensuring that tasks are completed by adhering to established procedures. Transactional leaders focus on short-term goals, using incentives or penalties to drive compliance and performance (Santa *et al*., 2023:6). These leadership styles highlight two distinct approaches to leadership: one focused on vision and innovation and the other on routine and structure.

2.3.2.5 Social identity theory

The social identity theory posits that leaders are most effective when they embody the values and characteristics of the group they represent. This alignment with the group's identity strengthens their legitimacy and influence, as followers perceive these leaders as true representatives of their collective values and norms (Sewell *et al*., 2022:2). According to this theory, leadership success

is tied to how healthy leaders reflect the identity and aspirations of their followers, making it particularly relevant in companies with diverse or complex group dynamics.

2.3.3 Leadership styles

Leadership styles encompass various approaches leaders use to guide, motivate, and manage their teams. These styles influence how teams function and affect organisational outcomes, such as culture and performance. Below are key leadership styles relevant to contemporary companies, particularly in manufacturing.

2.3.3.1 Transformational leadership

Transformational leadership encourages employees to transcend their interests for the organisation's greater good. Leaders who adopt this style inspire their teams through visionary thinking, fostering an environment where creativity and change are encouraged and rewarded. Transformational leadership has been linked to heightened levels of employee engagement and satisfaction, particularly in industries that rely on innovation and adaptability, such as manufacturing (Bader *et al*., 2023:361). Leaders in this style promote shared goals and inspire employees to take ownership of their roles, enhancing individual and organisational performance (Bader *et al*., 2023:369).

2.3.3.2 Transactional leadership

Transactional leadership operates through a system of clear expectations, where performance is monitored, and rewards or penalties are applied based on outcomes. This style is effective in environments that require consistency and strict adherence to established procedures. By focusing on task completion and routine operations, transactional leaders ensure that set goals are met efficiently (Alrowwad *et al*., 2022:2). While this approach may not foster innovation to the same extent as transformational leadership, it remains a reliable method to ensure accountability and maintain operational stability, especially in highly structured sectors such as manufacturing (Mouazen & Hernández-Lara, 2023:149).

2.3.3.3 Servant leadership

Servant leadership is distinguished by a leader's focus on meeting their team members' needs first, emphasising personal and professional development. This leadership style cultivates a

supportive environment that fosters collaboration, trust, and transparency. As a result, employees tend to exhibit higher levels of engagement, satisfaction, and loyalty (Nauman *et al*., 2022:18). In the manufacturing industry, servant leadership promotes teamwork and open communication, which are vital for achieving and sustaining high standards of quality (Qiu *et al*., 2020:9).

2.3.3.4 Laissez-faire leadership

Laissez-faire leadership is a hands-off method where leaders offer minimal guidance, leaving employees to manage their tasks with considerable autonomy. This style works well when teams are composed of highly skilled and self-motivated individuals capable of functioning independently. However, in environments that require coordination and precision, such as manufacturing, direction can result in increased productivity and higher-quality outcomes (Desgourdes *et al*., 2023:1049). This leadership style may lead to ambiguity without adequate oversight, hindering overall performance and goal attainment (Norris *et al*., 2021:321).

2.4 Organisational culture

2.4.1 Definition and components of organisational culture

Organisational culture encompasses the collective values, beliefs, and practices that shape how individuals within a company interact and behave. It influences decision-making, work patterns, and the organisation's overall performance (Assoratgoon & Kantabutra, 2023:1). This culture can be seen as the organisation's identity, reflected in its formal policies and informal practices. An organisation's culture defines how its members think, feel, and act in their work environment, creating a set of shared understandings that guide behaviour (Assoratgoon & Kantabutra, 2023:3).

2.4.2 Theories and models of organisational culture

Over time, various models and theories have been developed to explain how organisational culture evolves and affects both internal processes and external outcomes. These frameworks offer valuable insights into how culture shapes performance, innovation, and employee engagement.

Schein's model of organisational culture

Edgar Schein's three-level model is one of the foundational theories of organisational culture. This model classifies culture into three levels: artefacts, values, and underlying assumptions (Solomon & Brown, 2021:1204). Artefacts are the visible, tangible aspects of culture, such as office layouts or formal rituals. Values represent the explicit norms that guide decision-making, while fundamental assumptions are the deeply ingrained, unconscious beliefs that remain stable over time. Schein's model is highly regarded because it connects visible behaviours with the more subtle, ingrained aspects of organisational culture, offering a holistic understanding of how culture operates.

The competing values framework (CVF)

The CVF, introduced by Cameron and Quinn, identifies four major types of organisational culture: clan, adhocracy, market, and hierarchy. Each type reflects different priorities and values: collaboration in clan cultures, innovation in adhocracy cultures, competition in market cultures, and stability in hierarchical cultures (Espasandin-Bustelo *et al*., 2021:613). The CVF is frequently used to assess organisational culture and align it with strategic goals, particularly when balancing operational efficiency with innovation is necessary.

Denison's model of organisational culture

Denison's model links organisational culture with performance through four key traits: involvement, consistency, adaptability, and mission. Companies that foster a culture of involvement empower their employees and promote collaboration. Consistency involves ensuring internal alignment and coherence across the organisation. Adaptability reflects the organisation's capacity to respond to environmental changes. At the same time, the mission provides a clear sense of purpose that directs the organisation's efforts (Kiziloglu, 2022:23). This model is beneficial for understanding how culture influences performance in dynamic industries.

Hofstede's cultural dimensions theory

Initially developed to explore national cultural differences, Geert Hofstede's cultural dimensions theory has been adapted for organisational contexts. The model identifies six dimensions, including power distance and uncertainty avoidance, which explain how cultural factors influence leadership, decision-making, and organisational behaviour (Solomon & Brown, 2021:1207).

Hofstede's framework benefits multinational companies that need to manage cross-cultural interactions effectively.

Application within organisational contexts

Theories such as Schein's model, the CVF, and Denison's model provide valuable insights into how organisational culture shapes behaviour and performance. Companies can cultivate a culture that aligns with their strategic goals by applying these frameworks. In sectors such as manufacturing, where innovation, efficiency, and collaboration are crucial to success, these models offer practical tools for building a culture that drives performance and sustains competitive advantage.

2.4.3 The role of leadership in shaping organisational culture

Leadership plays a crucial role in shaping organisational culture, significantly influencing performance, employee engagement, and the overall adaptability of an organisation. Through their actions and decisions, leaders help create and nurture the values, norms, and beliefs that guide employee behaviour within the workplace. This relationship between leadership and culture is deeply intertwined, as leaders are the key architects of organisational culture (Muzondiwa *et al*., 2022:3).

Leadership as the shaper of organisational culture

Leaders shape culture by establishing a vision that aligns with the organisation's values and strategic goals. By modelling the behaviours they wish to see, leaders ensure these values permeate the organisation. Transformational leaders, for instance, often cultivate a culture of innovation and adaptability by motivating employees to engage in a shared vision. On the other hand, transactional leaders are more focused on consistency and accountability, shaping a culture that values efficiency and adherence to established processes (Cho *et al*., 2019:190).

Leadership impacts how culture is experienced at all levels of an organisation. Leaders who promote open communication and prioritise employee development foster cultures characterised by trust and collaboration. Conversely, leaders who strongly emphasise results may contribute to a more competitive or hierarchical culture (Alrowwad *et al*., 2022:1).

Leadership styles and cultural impact

The impact of leadership on organisational culture can vary significantly depending on the leadership style. Transformational leadership is closely associated with cultures of innovation and continuous improvement, making it highly effective in environments requiring agility, such as manufacturing, where ongoing adaptation is critical for competitiveness (Fenech *et al*., 2023:3).

In contrast, transactional leadership tends to create a culture focused on order, structure, and meeting specific performance metrics. While this can be beneficial for ensuring stability and productivity, it may limit flexibility and innovation in fast-evolving industries (Mouazen & Hernández-Lara, 2023:149). Servant leadership fosters a culture built on trust, collaboration, and employee well-being, encouraging active participation and engagement in organisational initiatives (Nauman *et al*., 2022:18).

Leadership's role in cultural transformation

Leadership becomes critical during periods of cultural transformation, such as mergers or strategic pivots. Leaders guide these transformations by clearly communicating new expectations, reinforcing desired behaviours, and managing resistance to change. This ensures that the evolving culture remains aligned with new organisational goals (Kumar *et al*., 2023:188).

In industries such as manufacturing, where operational excellence and adaptability are vital to maintaining a competitive edge, leaders are tasked with cultivating a culture that supports stability and flexibility. By encouraging continuous learning and fostering a culture that can swiftly respond to external pressures, leaders ensure that the organisation remains resilient in the face of change (Gates & Adetunji, 2020:153).

2.4.4 Organisational culture in manufacturing

In manufacturing, organisational culture shapes operations' effectiveness and sustainability. It encompasses the shared values, beliefs, and practices that define how employees conduct their work and make decisions. A cohesive culture in manufacturing supports innovation, improves quality, and enhances overall operational efficiency (Rezaei *et al*., 2018:95).

The importance of culture in manufacturing

The manufacturing sector, where precision and adherence to standards are vital, relies heavily on a culture that supports continuous improvement and teamwork. A well-developed culture

focused on quality control and operational excellence is essential for maintaining competitiveness in global markets (Marchiori & Mendes, 2020:135). Within this context, quality culture refers to an organisation-wide commitment to maintaining high standards, where every employee ensures that quality is consistently achieved. This approach fosters proactive problem-solving and ensures that potential issues are addressed early, contributing to the long-term success of manufacturing operations (Shou *et al*., 2020:625).

Elements of organisational culture in manufacturing

1. **Continuous improvement (Kaizen)**: A key element in many manufacturing companies is continuous improvement, which drives incremental changes that enhance quality and efficiency (Mirkamali *et al*., 2011:140). This mindset helps companies remain adaptable and responsive to market demands.
2. **Teamwork and collaboration**: Effective department collaboration is essential for smooth operations. Cultivating a culture of teamwork allows manufacturing teams to identify issues early and solve problems collectively, improving overall production processes (Maisiri *et al*., 2023:239).
3. **Employee empowerment**: Empowering employees to take ownership of their work encourages innovation and engagement at all levels. When employees are trusted to make decisions and contribute to process improvements, the organisation benefits from heightened productivity and quality (Mavis Agyemang *et al*., 2019:6274).
4. **Adaptability and innovation**: A culture that promotes adaptability and innovation is vital in today's fast-paced manufacturing environment. Companies that embrace change and integrate new technologies into their processes are better positioned to maintain their competitive edge (Markatos & Mousavi, 2023:1666).

The role of leadership in shaping manufacturing culture

Leadership plays a significant role in reinforcing and shaping the culture of manufacturing companies. Leaders who promote a culture of continuous improvement and innovation help drive competitiveness, while those who emphasise consistency and accountability foster stability and reliability in operations (Lasrado & Kassem, 2021:170). Whether transformational or transactional, leadership styles influence the values prioritised within a manufacturing organisation.

2.4.5 Comparison of organisational cultures across industries

Organisational culture differs significantly across industries due to unique operational demands, competitive pressures, and the environments in which companies function. These differences shape how companies approach leadership, decision-making, and employee engagement.

Manufacturing vs. service industry cultures

In the manufacturing sector, the culture often revolves around efficiency and precision, strongly focusing on structure and process control. Manufacturing environments are typically hierarchical, emphasising stability, consistency, and standardisation to ensure product quality (Naor *et al*., 2008:673). The rigid nature of these cultures helps maintain operational standards, reduce errors, and ensure consistent output. In contrast, service industries tend to adopt more flexible and people-oriented cultures. Service-based companies, particularly those that rely heavily on customer interactions, focus on employee empowerment, collaboration, and adaptability. A clan or adhocracy culture is more common, where employees are encouraged to be responsive to clients' needs and adapt quickly to changes (Espasandin-Bustelo *et al*., 2021:609).

High-tech vs. traditional manufacturing

High-tech manufacturing sectors often cultivate an adhocracy or developmental culture, where innovation and flexibility are crucial to remain competitive. This culture promotes risk-taking and experimentation, enabling companies to adapt rapidly to market and technological changes. Employees in high-tech environments are typically encouraged to contribute to developing new products and processes (Khanchanapong *et al*., 2014:191). Traditional manufacturing, on the other hand, generally aligns with a hierarchical or rational culture, focusing on efficiency, consistency, and process optimisation. Leadership in these industries often takes a more transactional approach, prioritising adherence to established processes and quality standards to maintain operational efficiency (Haffar *et al*., 2019:1367).

Healthcare vs. manufacturing

In healthcare, organisational cultures tend to be more mission-oriented or clan-like, reflecting the critical importance of collaboration and employee engagement in achieving patient outcomes. A culture of teamwork and a shared sense of purpose is vital in healthcare settings, where the quality of care is directly linked to how well employees work together (Lasrado & Kassem,

2021:171). These environments differ significantly from manufacturing cultures, where the focus is more on process efficiency and operational control to ensure product quality.

2.5 Quality culture

2.5.1 Definition and importance of quality culture

Quality culture refers to the shared values, beliefs, and practices within an organisation that prioritise maintaining and enhancing quality throughout its operations. This culture promotes a continuous commitment to quality improvement, engaging employees at all levels to uphold high standards in both processes and outcomes. The European University Association (EUA) distinguishes quality culture by two key components: the cultural or psychological aspect, which encompasses the shared expectations and values towards quality, and the structural or managerial aspect, which includes the processes and systems in place to ensure consistent quality enhancement (Hildesheim & Sonntag, 2020:895).

An authentic quality culture goes beyond meeting essential compliance or regulatory standards. It encourages an organisational mindset that embraces ongoing improvement through collaboration, innovation, and feedback. In this environment, quality is seen as a collective responsibility, and employees are empowered to maintain high standards, leading to a cohesive and integrated approach to achieving quality goals (Haffar *et al*., 2019:1367).

Importance of a quality culture

Establishing a solid quality culture is critical, particularly in industries where consistency, reliability, and customer satisfaction are central to success. In manufacturing, for instance, a robust quality culture embeds quality into every process, ensuring that products meet high standards and customer expectations are consistently fulfilled (Carvalho *et al*., 2023:1601). This culture enhances efficiency by fostering collaboration, encouraging knowledge sharing, and promoting proactive problem-solving. When employees are engaged in the pursuit of quality, they are more likely to contribute to identifying and resolving issues before they escalate, ultimately improving productivity and reducing waste (Lasrado & Kassem, 2021:171). In highly competitive sectors, a well-established quality culture can be a crucial differentiator, enhancing an organisation's ability to meet global standards and remain agile in a dynamic marketplace. It also supports the organisation's strategic objectives by lowering operational costs, improving compliance with international regulations, and enhancing overall competitiveness (Gözükara *et al*., 2019:1304). Building a quality-centric culture is not just about meeting requirements; it is about creating a foundation for sustained innovation, market leadership, and long-term success.

2.5.2 Theoretical frameworks and models of quality culture

Several theoretical frameworks and models guide cultivating and sustaining a quality culture within companies, especially in sectors where continuous improvement and high standards are essential. These frameworks combine structural and behavioural elements, ensuring that quality becomes integral to the organisation's operations.

Total quality management (TQM)

TQM is a comprehensive framework that embeds quality into every aspect of an organisation's processes. It emphasises several core principles, including a focus on customer satisfaction, continuous improvement, and employee involvement. TQM's approach integrates technical systems with human factors, highlighting the importance of leadership and culture in driving quality outcomes (Neda *et al*., 2023:4). Widely applied in manufacturing, TQM aims to reduce inefficiencies, eliminate waste, and ensure that quality standards are consistently met throughout production (Tajouri & Lakhal, 2024:1458). For TQM to succeed, a cultural shift within the organisation, where all employees take ownership of quality and are actively engaged in improving processes (Hwang *et al*., 2020:149).

The quality trilogy model

Joseph Juran's quality trilogy model divides quality management into three key areas, i.e. quality planning, quality control, and quality improvement. This model integrates quality into the organisational structure by ensuring that leadership and employees are aligned in their commitment to maintaining quality at all levels (Khalfan, 2022:1825). The trilogy is particularly valuable in manufacturing settings, where precise quality control and ongoing improvement are crucial to maintaining a competitive edge. By focusing on prevention and process efficiency, this model helps foster a culture where quality is consistently prioritised across the organisation.

EFQM excellence model

The European Foundation for Quality Management Excellence (EFQM) model is another widely used framework focusing on organisational excellence. It assesses quality culture based on criteria such as leadership, people, and processes, aiming to align an organisation's culture with its strategic objectives. The EFQM model is often paired with other frameworks, such as TQM, to drive continuous improvement and help companies achieve superior performance (Jorge Luis *et al*., 2019:1603).

2.5.3 Building and sustaining a quality culture

Creating and maintaining a quality culture involves aligning an organisation's values, behaviours, and practices toward a shared commitment to excellence. This culture ensures that quality becomes integral to daily operations, fostering an environment where continuous improvement, innovation, and collaboration thrive.

Building a quality culture

Leaders play a pivotal role in establishing the foundation for a quality culture. By setting a clear vision and modelling quality-focused behaviours, leaders guide their companies in embedding quality across all levels. Leadership must foster an environment where quality is seen as everyone's responsibility, integrating formal policies and informal practices that support high standards. Companies can employ several effective strategies to cultivate a strong quality culture. Employee engagement and training are fundamental to the quality process. Regular training equips employees with the skills to uphold quality standards, ensuring they are well-prepared to meet organisational expectations. Additionally, involving employees in decision-making fosters ownership and accountability, encouraging them to take responsibility for quality outcomes (Tajouri & Lakhal, 2024:1460).

Another vital strategy is the clear communication of quality goals. Effective communication ensures that everyone within the organisation understands the quality expectations and their role in meeting these standards. Importantly, open communication channels also play a key role in the timely identification of quality issues, reassuring that problems can be addressed swiftly, thereby preventing small problems from escalating (Martinez & Leija, 2023:185). Continuous improvement is crucial to sustaining a quality culture. Organisations must commit to ongoing innovation and process enhancement. By actively encouraging employees to seek improvement opportunities, companies can maintain high-quality standards and remain agile in response to market changes. This commitment to improvement ensures that the organisation continually adapts to meet evolving industry demands while preserving its focus on quality (Carvalho *et al*., 2023:1601).

Sustaining a quality culture

Once a quality culture is established, companies must take proactive measures to ensure it endures. Leadership commitment is essential for maintaining a quality-focused environment. Leaders need to consistently reinforce the importance of quality through their decisions and actions, fostering a workplace where employees feel confident in raising concerns related to

quality. This ongoing commitment from leadership is key to sustaining a culture where quality remains a top priority (Nauman *et al*., 2022:18).

Monitoring and measurement are also critical in sustaining a quality culture. By establishing clear metrics and regularly evaluating performance, companies can identify areas that require improvement and ensure that quality standards are maintained over time. Continuous monitoring enables the organisation to make data-driven decisions and maintain high-performance levels (Bello-Pintado *et al*., 2020:831). Cultural integration is necessary for a quality culture to last. Quality initiatives must be fully embedded into the organisation's core values and aligned with its strategic goals. Integrating quality into the company's mission becomes a central aspect of its operations, ensuring its long-term success (Markatos & Mousavi, 2023:1666).

2.5.4 The role of leadership in promoting quality culture

Leadership is crucial in embedding and sustaining a quality culture within an organisation. Leaders shape the values and behaviours that define an organisation's commitment to quality, directly influencing how employees approach their work and their involvement in quality management processes (Chen *et al*., 2020:452).

Visionary leadership and quality culture

Transformational leaders are known for their ability to inspire a shared commitment to quality. These leaders encourage continuous improvement and foster a culture of innovation by articulating a clear vision that places quality at the heart of organisational goals. Their approach motivates employees to move beyond compliance, focusing instead on proactive efforts to enhance quality (Hartnell *et al*., 2023:535). In manufacturing, where high standards are essential, transformational leadership can galvanise teams to pursue constant improvements, ensuring sustained competitiveness (Fenech *et al*., 2023:3).

Leadership styles and accountability in quality culture

Transactional leadership provides a structured approach to maintaining quality standards. Transactional leaders create an environment where quality goals are systematically achieved by clearly defining expectations and using rewards or penalties to ensure compliance. This approach is efficient in sectors where process consistency and regulatory compliance are vital (Abbas & Ali, 2023:137). While more rigid, this leadership style ensures that quality is ingrained in everyday

operations and that performance expectations are consistently met (Al-Dhaafri & Alosani, 2022:383).

Servant leadership and employee empowerment

Servant leadership offers another valuable approach to promoting a quality culture. By focusing on employee well-being and empowerment, servant leaders create a supportive atmosphere where employees feel encouraged to take ownership of quality initiatives. In manufacturing, this leadership style fosters a culture of collaboration, where employees are actively involved in quality improvement efforts, contributing to the overall success of the organisation (Song *et al*., 2022:3). Servant leadership encourages open communication and shared responsibility, ensuring that quality is maintained through collective effort (Qiu *et al*., 2020:9).

2.5.5 Quality culture in the manufacturing sector

In the manufacturing sector, fostering a robust quality culture is essential to maintaining consistent product standards, enhancing operational efficiency, and ensuring global competitiveness. Quality culture reflects the collective effort of both leadership and employees to continually refine processes, improve products, and provide superior services. This culture permeates the organisation, driving a shared commitment to achieving high-quality outcomes at every level (Alzate-Ibanez *et al*., 2023:123).

The importance of quality culture in manufacturing

Manufacturing companies must ensure that their processes are reliable and efficient in a competitive environment. A well-embedded quality culture integrates quality into every stage of production, from design to delivery, helping to reduce defects and improve product reliability. This focus on quality is crucial for meeting regulatory requirements and maintaining customer trust (Marchiori & Mendes, 2020:135). Furthermore, when employees are encouraged to engage with quality initiatives, they contribute valuable insights to enhance processes, leading to innovative solutions and increased operational efficiency (Wu, 2015:799). A continuous improvement mindset enables manufacturers to stay agile and competitive in a rapidly changing global landscape (Shou *et al*., 2020:625).

Key elements of quality culture in manufacturing

Building and sustaining a quality culture in manufacturing requires several key factors. Firstly, leadership commitment is pivotal in establishing and reinforcing organisational quality objectives. Leaders are responsible for setting the tone and ensuring that quality remains a priority throughout all levels of the organisation. Their commitment to quality must be demonstrated through consistent actions, shaping the culture and focusing on quality (Gambi *et al*., 2021:1060).

Another critical factor is employee engagement, which is necessary to maintain a thriving quality culture. Employees must be actively involved in the organisation's quality initiatives. Engaging staff through proper training and empowering them to contribute to quality improvement efforts foster a collaborative environment where collective problem-solving becomes the norm. This engagement ensures that the workforce is aligned with the organisation's quality goals and is motivated to achieve them (Sureshchandar, 2022:1339).

Lastly, quality management systems (QMS), such as ISO 9001, are not just instrumental; they are the backbone of structuring and standardising processes that consistently meet quality targets. A well-implemented QMS encourages continuous improvement by providing a clear and transparent system for maintaining and enhancing quality throughout the organisation. It does not just help, it ensures that organisational processes are aligned with quality objectives, thereby embedding quality into the organisational culture (Latan *et al*., 2020:2).

The strategic role of quality culture in manufacturing competitiveness

In an increasingly competitive global market, manufacturers that excel in quality management gain a significant advantage. A robust quality culture enables companies to deliver high-quality products more efficiently, often at a lower cost, resulting in improved customer satisfaction and long-term loyalty (Rehmani *et al*., 2020:4). Companies that prioritise quality not only meet current market demands but are also better positioned to adapt to future challenges.

2.6 Interplay between leadership styles and organisational culture

2.6.1 Conceptual framework

The relationship between leadership styles and organisational culture is complex and dynamic, influencing the other in shaping an organisation's environment, behaviour, and performance. Leadership styles, such as transformational, transactional, and servant leadership, play a critical role in guiding and reinforcing the values and norms that form the foundation of organisational

culture. Understanding this interplay is essential for fostering cultures that support organisational success, particularly in manufacturing sectors where excellence and adaptability are vital.

Leadership styles and cultural influence

Each leadership style contributes uniquely to shaping organisational culture:

- Transformational leadership encourages a culture focused on innovation and continuous improvement. Leaders inspire employees by articulating a vision that aligns individual goals with broader organisational objectives, fostering a collaborative and adaptive culture that thrives on creativity and progress (Nguyen *et al*., 2023:383).
- Transactional leadership cultivates a culture of control, consistency, and efficiency. By emphasising rewards and penalties, transactional leaders ensure compliance with established processes and clear expectations, creating a structured environment that prioritises operational stability (Cho *et al*., 2019:190).
- Servant leadership promotes a culture of trust, collaboration, and collective responsibility. This leadership style focuses on meeting the needs of employees, fostering engagement, and creating an inclusive environment where individuals feel valued and motivated to contribute (Nauman *et al*., 2022:18).

The interplay between leadership and culture

The interaction between leadership styles and organisational culture is ongoing and reciprocal. Leaders shape culture and respond to and are shaped by the prevailing cultural context. For example, leaders who introduce new strategies or adapt to external changes influence the cultural norms within the organisation. Schein's work highlights how leaders play a crucial role in creating and evolving culture and reinforcing or challenging shared assumptions and values (Sahoo, 2022:441). While transformational leaders may shift organisational values by fostering innovation and change, transactional leaders reinforce existing norms by maintaining order and predictability. Servant leaders, meanwhile, nurture a supportive, inclusive culture that encourages open communication and mutual respect. Each leadership style affects the organisational environment differently, depending on the goals and the nature of the organisation's work.

Conceptual framework

The proposed conceptual framework for understanding the interaction between leadership styles and organisational culture recognises that different leadership approaches have varying impacts on cultural dimensions within an organisation. Leadership is the primary force behind cultural development, shaping the values, norms, and behaviours that define the organisation's working environment. Leadership styles that support quality and excellence are essential in industries such as manufacturing. Transformational leadership drives innovation and improvement; transactional leadership ensures consistency, and servant leadership creates a supportive and engaged workforce (Keskes *et al*., 2018:271). The success of these leadership styles depends on how well they align with the organisation's existing culture and objectives.

Leadership's influence on organisational culture

The influence of leadership on culture is seen clearly in how leaders foster environments that encourage or limit certain behaviours. For example, transformational leadership promotes creativity and flexibility, fostering cultures that thrive on change and adaptability (Fenech *et al*., 2023:3). Transactional leadership, in contrast, builds structured cultures focused on clear expectations, predictability, and maintaining efficiency (Mouazen & Hernández-Lara, 2023:149).

The role of organisational culture in shaping leadership

Organisational culture also plays a role in shaping how leadership styles are enacted. For instance, a rigid, hierarchical culture may limit the effectiveness of transformational leadership, while a collaborative, flexible culture may empower servant leadership to thrive. The CVF offers insight into how different cultural types align with various leadership styles. For example, clan cultures, which focus on teamwork and people-oriented values, align well with servant leadership. In contrast, transactional leadership is more suited to market or hierarchical cultures that emphasise efficiency and control (Quinn & Rohrbaugh, 1983:46).

2.6.2 Impact of different leadership styles on organisational culture

Leadership styles significantly shape organisational culture, influencing a company's values, behaviours, and overall atmosphere. Each leadership approach creates a distinctive environment that affects how employees engage with their tasks, interact with each other, and align with the organisation's goals. This section explores the impact of transformational, transactional, and

servant leadership styles on organisational culture, highlighting their unique effects across different organisational settings.

Transformational leadership

Transformational leadership is closely associated with creating a culture that fosters innovation, collaboration, and continuous improvement. Leaders who adopt this style inspire and motivate their teams by articulating a compelling vision for the future and encouraging creativity and personal growth. Transformational leaders create an adaptive culture where employees are empowered to challenge assumptions, take calculated risks, and push beyond perceived limits (Fenech *et al*., 2023:3). By promoting intellectual stimulation and individualised consideration, transformational leaders build a supportive culture that prioritises learning and loyalty, resulting in greater employee engagement and job satisfaction. This leadership style is particularly effective in industries where agility and innovation are essential in maintaining a competitive edge (Ntseke *et al*., 2022:4).

Transactional leadership

In contrast, transactional leadership typically fosters a structured and hierarchical culture. This style is characterised by a clear focus on achieving specific outcomes through rewards and penalties. Transactional leaders promote a culture that values efficiency, standardisation, and adherence to established processes, making it well-suited to environments where precision and consistency are key (Mouazen & Hernández-Lara, 2023:149). While it may limit flexibility and innovation, transactional leadership ensures stability and accountability, which are critical in sectors such as manufacturing, where compliance with strict standards is essential for operational success (Ali & Islam, 2020:34).

Servant leadership

Servant leadership prioritises the well-being and development of employees, cultivating a culture of collaboration, trust, and respect. Leaders who employ this style focus on the needs of their teams, fostering an inclusive environment where open communication is encouraged and employees feel valued. This leadership style builds a culture that promotes care and support, leading to higher levels of job satisfaction and employee engagement (Nauman *et al*., 2022:18). Servant leadership is particularly effective in companies that depend on solid teamwork and

service-oriented roles, as it encourages employees to work together toward shared objectives and enhances organisational unity (Qiu *et al*., 2020:9).

2.6.3 Mechanism of influence

Leadership styles influence organisational culture in a multifaceted way, involving processes that shape values, behaviours, and norms. Leaders play a crucial role in setting expectations, modelling behaviours, and reinforcing desired outcomes. Transformational, transactional, or servant leadership styles impact culture differently through specific mechanisms.

Transformational leadership and cultural influence

Transformational leadership shapes organisational culture through the leader's ability to inspire and motivate employees by setting a clear and compelling vision. By fostering trust and collaboration, transformational leaders guide the organisation towards embracing innovation, adaptability, and continuous improvement. This style empowers employees to take the initiative, make decisions, and align their efforts with the organisation's strategic objectives, creating a culture of proactive engagement (Fenech *et al*., 2023:3). This leadership approach reinforces shared values. It encourages a long-term commitment to organisational goals. Leaders who challenge employees to exceed their current capabilities contribute to a culture where continuous improvement becomes the norm, fostering a dynamic environment focused on innovation and excellence (Lasrado & Kassem, 2021:170).

Transactional leadership and cultural stability

Transactional leadership impacts culture by maintaining order through clear goals, structured processes, and a system of rewards and penalties. Leaders using this style emphasise efficiency and compliance, creating an environment where rules and procedures are followed to ensure stability and consistency. This leadership style is effective in companies where accountability and adherence to standards are crucial for success (Mouazen & Hernández-Lara, 2023:149). The mechanism of influence involves reinforcing expected behaviours through rewards for compliance and penalties for non-compliance. Focusing on performance metrics and outcomes leads to a predictable and orderly culture, essential in industries where precision and reliability are key (Cláudia Sousa *et al*., 2021:5).

Servant leadership and nurturing culture

Servant leadership influences culture by prioritising employee well-being and empowerment, fostering an atmosphere of trust and shared responsibility. By focusing on the growth and development of their teams, servant leaders create a collaborative environment where decision-making is participatory, and employees feel valued (Nauman *et al*., 2022:18). This leadership style promotes a culture of mutual respect and accountability, where employees are encouraged to take ownership of their roles. Servant leaders model the values of collaboration and service, which are reflected in the organisational culture, resulting in a supportive and high-performing workplace (Qiu *et al*., 2020:9).

2.7 Impact of leadership styles and quality culture in manufacturing

2.7.1 Transformational leadership and quality culture

Transformational leadership is a highly effective approach for cultivating a strong quality culture within manufacturing companies. Leaders who adopt this style motivate employees to embrace quality as a core value, driving engagement and initiative-taking in problem-solving. By creating an inspiring vision and fostering a sense of purpose, transformational leaders encourage employees to strive for continuous improvement and innovation. This focus on adaptability and proactive quality management ensures that the organisation remains competitive and responsive to changing customer needs and market conditions (Lasrado & Kassem, 2021:170).

A critical factor in the success of transformational leadership is the ability to align the organisation's strategic goals with a culture of quality. Leaders inspire commitment to high standards, encouraging employees to take ownership of quality-related initiatives and actively contribute to refining processes (Lasrado & Kassem, 2021:171). Additionally, transformational leadership has been linked to the successful adoption of a QMS, as leaders promote an environment that supports the constant evolution of quality practices, fostering long-term organisational excellence (Fenech *et al*., 2023:3).

2.7.2 Transactional leadership and quality culture

Transactional leadership emphasises structure, clear expectations, compliance, consistency and standardisation within quality-focused companies. This leadership style relies on defined rewards and penalties to ensure employees meet established performance standards. It is particularly effective in environments where operational efficiency and protocol adherence are critical, such as manufacturing (Jensen *et al*., 2019:5).

The role of transactional leadership in a quality culture

Transactional leaders contribute to quality culture by ensuring employees follow set procedures and meet specific quality objectives. This leadership approach focuses on accountability, regularly monitoring performance and providing immediate feedback to reinforce adherence to standards. In manufacturing, where precision and reliability are paramount, this leadership style helps maintain product quality and operational stability by enforcing consistency and minimising deviations from established protocols (Mouazen & Hernández-Lara, 2023:149).

Strengthening quality management systems

One primary way in which transactional leadership enhances quality culture is by reinforcing QMS. Leaders ensure that employees know and adhere to quality standards by conducting regular audits, performance reviews, and corrective actions when needed. This structured approach helps sustain a stable production environment, reducing errors and waste while promoting a culture of accountability (Chan *et al*., 2018:2168).

Limitations of transactional leadership in fostering innovation

While transactional leadership effectively maintains high-quality standards, it may not foster the same level of innovation as transformational leadership. The focus on compliance and meeting established targets can limit the creativity and flexibility required for continuous improvement in manufacturing processes. Although essential for sustaining quality, this leadership style may not encourage employees to explore new ideas or challenge existing systems, potentially stifling the innovation necessary for long-term growth (Berson & Linton, 2005:51).

2.7.3 Servant leadership and quality culture

Servant leadership prioritises employee development and well-being, which is pivotal in nurturing and sustaining a strong company culture. By fostering collaboration, trust, and shared responsibility, servant leadership creates an environment conducive to continuous improvement and high-quality performance, which is especially important in sectors such as manufacturing.

The role of servant leadership in building quality culture

Servant leaders encourage employees to take initiative in improving organisational processes, fostering a sense of ownership over their roles. This approach empowers employees to actively

participate in quality-related decision-making , strengthening their commitment to achieving the organisation's quality goals. Servant leadership's focus on supporting employees enhances engagement, making team members more motivated to uphold and advance quality standards (Nauman *et al*., 2022:18). The collaborative and participatory nature of this leadership style aligns seamlessly with a quality-focused culture, where collective efforts lead to higher operational standards. Moreover, servant leadership fosters open communication, ensures transparency, and facilitates early identification of quality challenges. This leadership style encourages an environment where employees feel safe sharing ideas and raising concerns, supporting continuous improvement by allowing issues to be addressed swiftly (Qiu *et al*., 2020:9). This proactive approach ensures that quality maintenance and enhancement are ongoing processes.

Servant leadership in the manufacturing sector

In manufacturing, where collaboration between various departments is essential for maintaining high standards, servant leadership enhances teamwork and improves communication across functions. By promoting a culture of mutual respect, servant leaders help break down barriers between teams, ensuring smoother coordination and a unified focus on quality throughout the production process (Hartnell *et al*., 2023:535). Additionally, servant leadership boosts employee motivation, which is crucial in manufacturing environments where tasks may be repetitive. By recognising and supporting individual contributions, servant leaders help maintain high levels of job satisfaction, which translates into more diligent and attentive work. This improves employee performance and contributes to higher quality outputs, as motivated employees are more likely to be meticulous in their tasks (Mavis Agyemang *et al*., 2019:6273).

2.7.4 Comparative analysis of leadership styles and quality culture

Analysing transformational, transactional, and servant leadership styles reveals how each approach influences the development and sustainability of quality culture within companies. These leadership styles differ in their focus, interaction with employees, and methods to achieve quality goals, each bringing unique strengths to fostering quality within various contexts.

Transformational vs. transactional leadership

Transformational leadership is highly effective in cultivating a culture of innovation and continuous improvement. This leadership style motivates employees through a compelling vision and encourages them to go beyond their primary duties to enhance quality and drive progress.

Transformational leaders foster an environment where creativity, problem-solving, and a commitment to excellence are essential, making it well-suited for companies focused on long-term quality growth (Fenech *et al*., 2023:3). The personal development focus of transformational leadership supports the establishment of a robust quality culture by engaging employees in meaningful quality improvement initiatives (Lasrado & Kassem, 2021:170).

On the other hand, transactional leadership emphasises structure, rewards, and penalties to ensure that employees meet defined performance and quality standards. This approach is beneficial in settings that require strict adherence to established procedures and operational consistency, making it highly effective in industries where compliance and stability are critical (Mouazen & Hernández-Lara, 2023:149). However, transactional leadership may not encourage the same level of innovation or employee engagement, as it prioritises maintaining order and meeting short-term objectives over fostering creativity.

Servant leadership vs. other styles

Servant leadership is more employee-focused, prioritising the development and well-being of team members to build a culture of trust, collaboration, and shared responsibility. This leadership style fosters an inclusive environment where employees feel empowered to take part in quality initiatives, helping to embed quality deeply within the organisation's culture (Nauman *et al*., 2022:18). By promoting open communication and mutual respect, servant leadership ensures that quality improvement becomes a collective effort, driven by employees' commitment to organisational goals.

Unlike transformational leadership, which primarily drives change through vision and motivation from the top, servant leadership works more through grassroots empowerment, focusing on nurturing employees and encouraging them to take responsibility for quality improvements. Both approaches effectively promote a quality culture. Still, servant leadership is more relational and centred on employee well-being, while transformational leadership focuses on driving large-scale change through inspiration and vision (Lasrado & Kassem, 2021:171).

2.8 Research gaps and the South African context

2.8.1 Identified research gaps in the literature

Although leadership and organisational culture are well-studied topics, there are still notable gaps in how these elements impact the manufacturing sector in South Africa. One significant gap is the limited focus on the direct influence of leadership styles on developing a quality culture in this

industry. Existing global research often addresses leadership and quality culture broadly, but studies specific to the South African manufacturing environment remain scarce (Chen *et al*., 2020:468).

Moreover, while there has been some exploration of leadership styles such as transformational and servant leadership in developed countries, there is a lack of detailed research on how these styles adapt to the unique challenges faced by South African manufacturers, including economic instability, skill shortages, and global competition (Maisiri & Van Dyk, 2021:2). Another overlooked area is the role of middle management in implementing quality initiatives, a crucial factor in bridging the gap between leadership and frontline workers. The absence of comprehensive studies on middle managers' influence on quality culture presents a vital research opportunity (Gambi *et al*., 2021:1062).

2.8.2 Challenges in the South African manufacturing sector

The South African manufacturing sector faces various challenges that hinder its global competitiveness. These challenges include structural inefficiencies, high operational costs, and domestic socio-economic issues, impacting the sector's ability to drive innovation and growth:

Declining competitiveness and productivity: South Africa's manufacturing sector has seen a steady decline in its contribution to its gross domestic product (GDP), compounded by low productivity and limited innovation. Compared to other BRICS nations, South Africa struggles to keep pace with global manufacturing trends, weakening its competitive position.

High input costs and labour market issues: High input costs, including energy, raw materials, and transport, hamper manufacturing in South Africa. An inconsistent power supply, marked by load shedding, led to costly production delays. Additionally, labour market inefficiencies, such as high unemployment rates, low skill levels, and strained industrial relations, exacerbated the sector's challenges, limiting productivity and growth.

Global competition and trade pressures: Liberalising trade barriers has intensified global competition, especially from lower-cost manufacturing nations. South African manufacturers, particularly in industries such as textiles and automotive, struggle to compete with international competitors, losing local and global market share.

Socio-economic challenges and policy implementation: The sector is further affected by broader socio-economic issues, including inequality and inconsistent policy implementation, which lead to uncertainty and reduced investor confidence. While government initiatives such as the Industrial Policy Action Plan (IPAP) aim to support the industry, their impact has been weakened by a lack of coordinated efforts between the public and private sectors.

2.8.3 Proposed directions for future research

Several areas present opportunities for future research, particularly in understanding how leadership styles and quality culture interact within the South African manufacturing sector.

Leadership-culture alignment and performance

More research is needed to explore how aligning leadership styles with organisational culture can enhance performance. While the influence of leadership on culture has been studied, further work is required to identify the combinations of leadership styles and cultural elements that lead to optimal performance in manufacturing (Keskes *et al*., 2018:273).

Context-specific research in manufacturing

Given the unique challenges faced by South African manufacturers, future research should focus on how leadership styles can be adapted to foster a quality culture within this context. Understanding how leadership strategies can address local issues, such as skill shortages and operational costs, could yield valuable insights to improve performance (Gates & Adetunji, 2020:153).

Emerging leadership models

As technology advances and industries evolve, emerging leadership models such as adaptive and digital leadership are becoming increasingly relevant. Research into how these new models can contribute to fostering a quality culture in technologically advanced environments such as Industry 4.0 is critical for future success (Maisiri *et al*., 2021:2).

Longitudinal studies

Most existing studies on leadership and culture are cross-sectional, providing only a snapshot of their relationship. Longitudinal research is necessary to track how leadership and culture evolve, particularly in response to internal changes such as leadership transitions or external pressures such as global competition (Lasrado & Kassem, 2021:170).

The role of technology in leadership and culture development

With the integration of technologies such as AI and automation, future research could explore how technology influences leadership styles and organisational culture in the manufacturing sector. Understanding how leaders leverage these advancements to enhance quality culture and performance will be crucial to stay competitive in an increasingly digital world (Ikram *et al*., 2021:1667).

2.9 Summary

2.9.1 Summary of key findings

This study offers significant insights into the correlation between leadership styles and cultivating a quality-centric culture within the South African manufacturing industry. The research emphasised that transformational, transactional, and servant leadership styles uniquely influence the cultivation of a quality culture within businesses. Transformational leadership was recognised as particularly successful in fostering a quality culture by stimulating innovation and continual improvement. This leadership approach, characterised by intellectual stimulation and individualised consideration, corresponds with the quality-focused objectives of contemporary industrial companies.

Transactional leadership, primarily concerned with sustaining operational consistency, was identified as beneficial for short-term quality targets by establishing explicit performance standards and incentive mechanisms. Nonetheless, its impact on fostering a sustained quality culture was less significant than that of transformational leadership, as it often emphasises rapid outcomes rather than long-term cultural development. Servant leadership has emerged as a pivotal approach in fostering employee engagement and cooperation, essential elements of a quality-driven organisational culture. By prioritising employee needs, servant leaders foster a friendly workplace that encourages collective accountability for quality.

The research revealed that the interaction between leadership styles and organisational culture is a crucial factor influencing the efficacy of quality management measures. Organisational cultures prioritising cooperation, trust, and innovation are more amenable to leadership styles promoting quality-centric ideals. On the other hand, cultures that are resistant to change or highly hierarchical are less likely to gain advantages from transformational or servant leadership methodologies. The research underscored aligning leadership strategies with organisational culture to achieve and maintain quality excellence in the South African manufacturing sector.

2.9.2 Connection to the research objectives and question

The research findings directly pertain to the study's primary purpose of examining the influence of leadership styles on cultivating a quality-centric culture in South African manufacturing companies. The study elucidates the differential impact of transformational, transactional, and servant leadership on quality culture, enhancing the understanding of how leadership techniques can be customised to improve organisational performance and competitiveness. The secondary objectives of this study were achieved, specifically in defining and categorising leadership styles among South African manufacturing companies and analysing their influence on quality culture. The results indicate that transformational and servant leadership styles promote a sustainable quality culture. In contrast, although effective in specific situations, transactional leadership may not significantly contribute to long-term cultural reform.

The research underscores the dynamic interplay between leadership styles and organisational culture, indicating that an influential quality culture depends on the alignment between leadership practices and the prevailing cultural framework. This analysis provides pragmatic advice for leaders in the South African manufacturing industry who must evaluate their leadership strategies and the cultural milieu in which they function to attain optimal results in quality management. These conclusions thoroughly answer the primary study question: How do various leadership styles affect establishing and preserving a quality culture within South African manufacturing companies? The research demonstrates that leadership styles significantly influence the quality results of companies, with transformational and servant leadership identified as the most effective approaches for fostering a culture of excellence.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

The methodology chapter was essential in directing the research process by following a systematic and logical structure aligned with the study's research questions and objectives. This systematic strategy guaranteed uniformity and thoroughness throughout the investigation, especially in selecting suitable research philosophies, data collection, and analytical methodologies. Ethical approval for the study was secured from the North-West University's Economic and Management Sciences Research Ethics Committee (EMS-REC), guaranteeing adherence to all ethical standards. Additionally, a mining and machinery development firm in Johannesburg authorised access to the manufacturing facilities' database in Gauteng. An IT department gatekeeper was designated to oversee the secure management and gathering of the surveys, assuring compliance with the company's and NWU's code of conduct.

This chapter methodically delineates the research philosophy, methodology, and strategy, assuring coherence with the study's objectives. The study utilised Saunders' research onion model (Saunders *et al*., 2023:13), using a positivist paradigm to objectively investigate the relationship between leadership styles and quality culture in South African manufacturing companies. The deductive technique was used to test hypotheses derived from established literature and theories regarding leadership styles and organisational culture. Saunders *et al*. (2023:178) observed that the deductive technique is especially appropriate for research requiring testing hypotheses against empirical facts.

The population and sample procedures were established to guarantee that the 500 participants accurately represented the South African manufacturing industry. Quantitative surveys were used as the principal data-collection strategy. Their ability to produce numerical data amenable to statistical analysis via the Statistical Package for the Social Sciences (SPSS) facilitated the identification of patterns and correlations among variables. This strategy was consistent with the study's objective of examining the impact of leadership styles on the development of a quality-oriented culture (Gravetter & Forzano, 2011:31). Ethical guidelines, including informed consent and the preservation of participant confidentiality, were rigorously followed during the data-collection process, thereby safeguarding the integrity of the research.

This section emphasises how the partnership with the designated gatekeeper facilitated the secure distribution of surveys to the relevant production facilities. Upon completing the questionnaires by employees who satisfied the study's requirements, they were retrieved by the IT department and securely held until they were transferred for data analysis. This procedure guaranteed the systematic management of data and participant confidentiality. The ethical

framework implemented in this study ensured transparency and replicability, enhancing the research approach's overall integrity.

3.2 Research philosophy

Adopting a positivist research philosophy for this study was a calculated choice linked with the research aims and the nature of the inquiry. Positivism, a recognised paradigm in business research, offers a systematic and objective methodology that is particularly effective in evaluating the relationship between leadership styles and developing a quality-oriented culture in South African manufacturing companies. The positivist perspective posits that reality is objective and can be observed, quantified, and analysed by scientific procedures, which is essential for the study's objective of measuring and analysing correlations between variables. This paradigm was used to guarantee that the research findings are grounded in scientific data and devoid of personal bias or subjective interpretation (Saunders *et al*., 2023:140).

In this study, positivism is particularly suitable as it aims to objectively and factually evaluate the impact of various leadership styles on the establishment and sustainability of a quality culture. The research seeks to identify patterns and linkages that can be generalised throughout the South African manufacturing sector rather than concentrating on individual experiences or subjective interpretations. By adhering to positivist principles, the study guarantees an objective data-collection approach, highlighting measurable outcomes that can be checked and validated. Gravetter and Forzano (2011:16) emphasise that positivism corresponds with quantitative procedures, such as surveys, which offer a systematic method for gathering numerical data for statistical analysis, facilitating hypothesis testing.

The selection of a deductive technique is likewise grounded in the positivist tradition. This method entails evaluating hypotheses developed from established theories, as evidenced in the literature concerning leadership styles and organisational culture and verifying their validity through empirical observation. Cramer-Petersen *et al*. (2019:40) assert that the deductive technique is optimal for assessing existing theories, rendering it particularly pertinent to this study, which aims to evaluate the influence of leadership styles on quality culture in manufacturing companies. The study seeks to generalise its findings to the broader industrial sector by applying this deductive approach, a fundamental component of positivist research.

Moreover, adopting positivism reinforces the study's objective of developing pragmatic, evidence-based solutions to enhance leadership efficacy in fostering a quality culture. The positivist concept offers a structured framework to examine research enquiries, guaranteeing that the outcomes are reproducible and applicable across the industry. This framework corresponds with the research

aims and underscores the necessity for objective, quantifiable data to guide leadership strategies that enhance quality improvement in South African manufacturing companies. The emphasis on replicability and objectivity enhances the applicability of the study's findings in practical corporate environments, thereby providing significant insights for advancing leadership and quality culture within the sector.

3.3 Research approach

This study utilised a deductive research methodology, consistent with the positivist paradigm, to assess established hypotheses regarding leadership styles and their influence on quality culture in the South African manufacturing industry. The deductive technique commences with formulating hypotheses derived from existing literature and established theoretical frameworks, followed by empirical testing using systematic data gathering (Saunders *et al*., 2023:154). The study specifically investigated the relationship between transformational, transactional, and servant leadership styles and the development of a quality-centric culture in manufacturing companies. The study, rooted in leadership and organisational behaviour literature, sought to evaluate these ideas within the South African manufacturing sector, thereby adding both theoretically and practically to leadership and quality management.

The study adhered to a deductive methodology, progressing logically with hypotheses developed from established ideas and quantitative data gathered for their evaluation. This strategy enabled a systematic examination of potential causal links between leadership styles and cultivating a quality culture. The study sought to evaluate the impact of the postulated leadership styles on the quality culture in South African manufacturing, using data analysis to validate or refute the hypotheses based on empirical evidence (Gravetter & Forzano, 2011:29). The deductive approach's primary strength is its ability to evaluate established theories, which facilitates broader generalisation. The study aimed to enhance scholarly dialogue and offer practical insights into leadership and quality management techniques in the South African manufacturing sector. This method is especially effective for recognising patterns and making inferences applicable throughout the industry, thereby improving the generalisability of the results.

Moreover, the deductive approach enhances the application of quantitative research tools, which were utilised to collect numerical data from 500 participants in the manufacturing industry. The data underwent statistical analysis to ensure the conclusions were objective and credible. Cramer-Petersen *et al*. (2019:42) observed that quantitative research bolsters the deductive process by offering a systematic framework for theory testing and analysing variable relationships. The deductive technique guaranteed that the research was focused, structured, and able to

produce generalisable and significant conclusions by carefully examining the correlations between leadership styles and quality culture. This methodology was crucial to enhance the theoretical understanding and offer practical suggestions to improve leadership efficacy and cultivate a quality culture in the manufacturing industry.

3.4 Research strategy

The chosen research strategy for this study was a survey-based methodology, which effectively aligns with the research objectives and the overarching methodological framework. A survey technique was used for its capacity to systematically gather data from a substantial sample, rendering it appropriate for assessing hypotheses concerning the relationship between leadership styles and the development of a quality-centric culture in South African manufacturing companies. Surveys are especially suitable for deductive research because they offer a quantitative approach to data gathering that can be statistically examined to confirm or refute the proposed hypotheses (Saunders *et al*., 2023:191).

The primary objective of this research was to examine the influence of several leadership styles, namely transformational, transactional, and servant leadership, on the cultivation of a quality culture inside manufacturing companies. Data collection from a varied array of participants across various companies in the sector was essential to accomplish this. The survey approach enabled the researcher to involve a more prominent and representative sample than alternative methods, such as case studies or experiments, which are sometimes constrained to contexts or smaller populations. The study used questionnaires to collect extensive data from managers and employees in several manufacturing companies, guaranteeing that the results can be applied to the broader manufacturing sector in South Africa (Gravetter & Forzano, 2011:50).

The survey methodology utilised structured questionnaires as the principal data collection tool. Questionnaires provide a systematic approach for gathering respondents' thoughts and experiences, thereby enhancing consistency and comparability in the data collected about leadership styles and quality culture across diverse companies (Ahmed, 2024:6). This method offered a time-efficient and cost-effective mode of data collection, enabling the study to obtain insights from a significant sample in a relatively small timeframe while assuring the data could be quantitatively processed and examined.

Furthermore, the survey methodology was crucial in attaining the research aim of delivering empirical evidence concerning the efficacy of various leadership styles in promoting a quality culture. The organised data-gathering procedure facilitated statistical methods, including correlation and regression analysis, to thoroughly investigate the correlations between leadership

styles and quality culture. These statistical tools were crucial for evaluating the hypotheses and assessing the strength and relevance of the identified correlations. Seuring *et al*. (2020:4) observed that surveys provide a scalable and dependable approach for data collection, enabling the generation of conclusions pertinent to the specific sample and the wider manufacturing industry. The survey strategy was verified by its ability to fulfil the study's objectives, offering a stable and scalable method for data collection across a large population. This methodology enabled the systematic and quantitative evaluation of hypotheses, permitting the researcher to derive generalisable conclusions on the impact of leadership styles on the cultivation and sustenance of a quality-oriented culture within South African manufacturing companies.

3.5 Research design

This study used a quantitative research design consistent with the research aims and the deductive approach that structured the investigation. Quantitative research is appropriate for investigations that assess hypotheses and discern relationships between variables through numerical data and statistical analysis (Saunders *et al*., 2023:181). The present study sought to investigate the relationship between several leadership styles, specifically transformational, transactional, and servant leadership, and the development of a quality-oriented culture in South African manufacturing companies. The quantitative framework facilitated the empirical collection and analysis of data to assess these linkages. The quantitative methodology was particularly suitable for this study as it enabled the assessment of leadership styles and quality culture through standardised tools, such as structured surveys. These instruments yielded consistent, objective, and comparable data across the diverse industry sectors engaged in the research. This architecture facilitated the application of statistical tools, such as correlation and regression analyses, essential for hypothesis testing and deriving generalisable results (Gravetter & Forzano, 2011:34).

Considering the magnitude and breadth of this study, which entailed gathering data from 500 managers and employees in the South African manufacturing industry, a quantitative methodology was most suitable. Collecting extensive data through qualitative methods, such as interviews or case studies, would have been unfeasible due to the time-consuming nature and restricted scope of these approaches. In contrast, the quantitative approach guaranteed that the research attained elevated dependability and replicability. Data could be methodically gathered, and the analysis yielded objective results that could be extrapolated to the broader industrial sector (Cramer-Petersen *et al*., 2019:41).

The quantitative research design aligned with the study's purpose of uncovering patterns and linkages within a large population. The objective was not to investigate individual experiences or subjective interpretations, which would need a qualitative methodology, but to identify statistically significant links between leadership styles and quality culture. The research aimed to offer practical insights to enhance management practices in the manufacturing sector. The research design, centred on statistically obtained evidence, facilitated the formulation of significant, data-driven recommendations to improve leadership effectiveness in cultivating a quality-centric culture (Ahmed, 2024:12).

3.6 Population and sampling

3.6.1 Target population

The target audience for this study consisted of managers and employees in the South African manufacturing sector, specifically within companies in the Gauteng Province. This region was selected for its substantial impact on South Africa's economy and its pivotal role in executing leadership strategies that shape quality culture. Participants comprised individuals in leadership roles, including middle and senior managers and employees directly affected by the leadership styles inside their businesses. The study incorporated both leaders and followers, offering an in-depth analysis of the impact of leadership styles on organisational culture and the promotion of a quality-oriented environment (Saunders *et al*., 2023:293).

Gauteng was chosen as the ideal region for the study due to its significant concentration of manufacturing companies, encompassing small businesses and major international corporations. The diversity enabled the research to assess the influence of leadership styles across different organisational sizes and operational circumstances, thereby improving the generalisability of the findings to the broader South African manufacturing industry (Ahmed, 2024:4). Additionally, a mining and machinery development business in Johannesburg provided permission to access their database of manufacturing sites in Gauteng, thereby facilitating participant recruiting. Incorporating managers and employees from various manufacturing companies was essential to understand the impact of leadership styles on quality culture across numerous organisational tiers.

3.6.2 Sampling technique

The research utilised a non-probability sampling method, namely snowball sampling. This approach initially selected a select set of significant participants, who subsequently directed the researcher to more respondents within their professional networks. Snowball sampling was

crucial in this study since it enabled managers and employees to access pertinent insights regarding leadership techniques and organisational culture within the manufacturing sector. The involvement of a gatekeeper from the IT department was significant in commencing this procedure, guaranteeing that participants adhered to the study's criteria. Although non-probability sampling approaches, such as snowball sampling, lack the statistical generalisability of probability sampling, they are particularly beneficial for exploratory research that necessitates access to informed respondents. Managers and other leaders were essential contributors, as their insights on leadership styles and quality culture were critical to achieving the research objectives. Snowball sampling facilitated the inclusion of individuals who are typically challenging to reach directly, improving the quality and relevance of the data gathered (Saunders *et al*., 2023:316). To alleviate any bias in snowball sampling, the first participants were chosen from varied organisational backgrounds to guarantee various opinions.

3.6.3 Sample size

The sample size for this study was determined based on pragmatic factors, including resource availability, time limitations, and the necessity of attaining sufficient statistical power to identify significant connections among the variables. In quantitative organisational research, a sample size of 150 to 300 individuals is generally adequate to produce valid and generalisable results (Saunders *et al*., 2023:297). In this study, 500 participants were recruited to facilitate rigorous statistical analysis and address probable non-responses or missing data, enhancing the findings' dependability. A power analysis was performed to verify that the sample size was sufficient to identify statistically important relationships between leadership styles and quality culture. This methodology guaranteed the study's dependability and the validity of its findings. The sample's diversity, comprising participants from multiple manufacturing companies in Gauteng, enhanced the study's capacity to generalise its findings to the broader South African manufacturing sector. The involvement of employees and managers at various organisational levels enhanced the study's thoroughness.

The anticipated response rate influenced the sample size, enabling the researcher to gather adequate data to derive significant inferences from the survey findings (Ahmed, 2024:15). To enhance participation and reduce non-response bias, follow-up reminders were dispatched to participants. At the same time, the IT department managed the distribution and collection of surveys. Completed surveys were safely maintained in the IT department's safe until data analysis, guaranteeing compliance with ethical norms. The integration of a clearly defined target population, a suitable sampling methodology, and an established sample size guaranteed that the study yielded valid, reliable, and generalisable findings regarding the impact of leadership

styles on the cultivation and sustenance of a quality culture in South African manufacturing companies.

3.7 Data collection methods

3.7.1 Data collection instrument

This study's principal data-collection instrument was a structured questionnaire designed by means of the stipulations established by the North-West University Ethics Committee. Ethics clearance was secured before data collection, and all stipulations specified in the data-collection instrument were followed. The research adhered to North-West University's Code of Conduct for researchers, assuring compliance with institutional rules. A mining and machinery development firm in Johannesburg authorised access to the database of manufacturing facilities in Gauteng. An IT department gatekeeper was designated to supervise the data-collection process, ensuring that all information was managed securely and complied with company and university procedures. The structured questionnaire was designed to gather quantitative data regarding leadership styles and cultivating a quality-centric culture inside South African manufacturing companies.

It was split into three primary sections:

1. **Demographic information:** This section gathered background data on participants, encompassing their age, gender, educational attainment, organisational role (e.g., manager, supervisor, employee), and years of experience in the manufacturing industry. This information was essential to guarantee the diversity and representativeness of the sample, comprising 500 participants from multiple production facilities.
2. **Leadership styles:** This question used a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) to assess respondents' perceptions of leadership styles inside their businesses. The survey utilised established measures, including the multifactor leadership questionnaire (MLQ) for transformational and transactional leadership and the servant leadership questionnaire (SLQ) for servant leadership (Gravetter & Forzano, 2011:86).
3. **Quality culture:** This section concentrates on assessing a quality culture within the organisation. Elements were derived from recognised quality management frameworks, and a seven-point Likert scale was used to determine the impact of leadership styles on quality practices, continuous improvement, and employee engagement (Ahmed, 2024:13).

Implementing a standardised questionnaire guaranteed uniformity in responses and enabled the statistical analysis required to evaluate the study's hypotheses. The partner company's IT section was instrumental in disseminating the surveys to the designated representatives at the manufacturing sites. The reps distributed the surveys to employees who adhered to the established criteria for participation. Upon completion, the IT department gathered the surveys, sealed them, and safely placed them in the department's safe for further investigation.

3.7.2 Data-collection procedure

The data gathered adhered to a systematic and organised protocol by the North-West University and the collaborating company. Surveys were disseminated utilising the subsequent methodologies:

- **Recruitment of participants:** Participants were sourced from the database supplied by the mining and machinery development company. An IT department gatekeeper supervised the selection process to guarantee that appropriate personnel, including managers and leaders, were contacted. The snowball sampling method broadened the participant pool by enabling respondents to suggest more individuals from their network who meet the study's requirements (Gravetter & Forzano, 2011:149).
- **Distribution of questionnaires:** The IT department managed the physical distribution, ensuring the questionnaires were sealed and delivered to the designated representatives at each production location. The reps subsequently distributed the surveys to employees who adhered to the research criteria, assuring that only qualified participants were included. Upon completing the questionnaires, the participants returned them to the facility representatives, who notified the IT department. The IT department subsequently gathered the finalised surveys and kept them securely.
- **Data entry and storage:** After all surveys were collected, they were submitted to the researcher, and the data was recorded in an Excel spreadsheet. Subsequently, the spreadsheet data was organised for additional examination utilising SPSS. To maintain data security and confidentiality, all physical surveys were secured in the IT department's safe, adhering to ethical and procedural standards.
- **Data-collection timeline and follow-up:** The data collection spanned four weeks, providing sufficient time for all participants to finalise the survey. The IT department facilitated prompt follow-ups by contacting facility personnel to remind participants to finalise the study, optimising the response rate (Ahmed, 2024:17).

3.8 Data analysis

3.8.1 Quantitative data analysis

The quantitative data obtained from the structured questionnaire was examined using SPSS. SPSS is a well-established instrument for managing extensive datasets and conducting diverse statistical analyses, rendering it suitable for hypothesis testing and fulfilling the research aims of this study. The data analysis followed a systematic procedure, commencing with data cleansing and preparation and progressing to more sophisticated statistical testing. The data gathered from the surveys, securely managed and stored by the IT department, was initially loaded into an Excel spreadsheet before any analysis. Subsequently, the data was cleansed and readied for statistical analysis in SPSS. The IT department secured all physical surveys, complying with the North-West University's ethical standards and data-protection measures.

The preliminary analysis used descriptive statistics, including frequencies, means, and standard deviations. The statistics included a summary of the demographic attributes of the sample, consisting of 500 participants, and the distribution of replies regarding leadership styles and quality culture metrics. This stage was crucial to understand the overarching tendencies in the data and to confirm its appropriateness for subsequent analysis (Saunders *et al*., 2023:590).

After summarising the data, inferential statistics were utilised to evaluate the study's hypotheses:

- Correlation analysis was used to investigate the degree and direction of the links between leadership styles (transformational, transactional, and servant leadership) and a quality-centric culture within the manufacturing sector. This analysis focused on the primary research objective of identifying the correlation between various leadership styles and cultivating a quality culture (Gravetter & Forzano, 2011:626).
- A multiple regression analysis was performed to investigate the degree to which leadership styles forecasted the existence of a quality culture inside businesses. This methodology enabled the research to account for extraneous variables, including demographic considerations, and isolate leadership's distinct influence on organisational culture. This strategy is consistent with the research objective of delivering practical, evidence-based insights to improve leadership practices (Ahmed, 2024:21).
- Where relevant, analysis of variance (ANOVA) was utilised to compare the means of various groups within the data. ANOVA was used to investigate differences in leadership styles across diverse organisational sizes or industries within the manufacturing sector. This facilitated determining whether leadership effectiveness differed by context, enhancing the findings' practical significance.

3.8.2 Reliability and validity

Ensuring the reliability and validity of the data was a crucial aspect of this study. The questionnaire's internal consistency was assessed using Cronbach's alpha to guarantee the data's reliability. This statistic measures how healthy items within a scale correlate, indicating whether the questionnaire reliably captures the underlying constructs of interest. A Cronbach alpha value of 0.7 or higher was acceptable to demonstrate good internal consistency (Saunders *et al*., 2023:523). This threshold was applied to the scales measuring leadership styles (e.g. transformational, transactional, and servant leadership) and quality culture (Saunders *et al*., 2023:214). If any scales exhibited an alpha value below this threshold, adjustments to the questionnaire items would have been made during the pilot phase to enhance reliability.

In terms of validity, the study focused on the following key types:

- Review of the questionnaire items against established theoretical frameworks for leadership styles and quality culture ensured content validity. This involved thoroughly comparing the questionnaire with previous research to ensure that all relevant aspects of the constructs were included, providing comprehensive coverage of the studied concepts (Gravetter & Forzano, 2011:79).
- Construct validity was assessed using factor analysis, which examined whether the items in the questionnaire loaded onto the expected factors, such as transformational leadership or quality culture. This process ensured that the instrument accurately measured the theoretical constructs it was designed to assess.
- Additionally, predictive validity was examined by evaluating the relationships between leadership styles and quality culture outcomes. If the study's findings demonstrated significant relationships as hypothesised, this would provide evidence that the questionnaire had good predictive validity, meaning it could effectively forecast organisational behaviours related to leadership and quality management (Ahmed, 2024:25).

3.9 Ethical considerations

Ethical considerations were paramount in ensuring that this research was conducted with integrity and respect for all participants. This study adhered strictly to several vital ethical principles, including confidentiality, informed consent, voluntary participation, and harm minimisation. These principles safeguarded the participants' rights and ensured the research process was conducted responsibly, ethically, and following the North-West University's Code of Conduct and relevant ethical guidelines (Saunders *et al*., 2023:253).

Confidentiality

The principle of confidentiality was rigorously maintained throughout the research. All data provided by participants was anonymised to protect the identities of individuals and companies. The data-collection process, overseen by the IT department of the partner company, ensured that participant responses were sealed and securely handled from the moment they were collected. Data was securely stored in a password-protected system, and access was restricted to the researcher and authorised personnel only. In compliance with data protection regulations, including the Protection of Personal Information Act (POPIA), no personal or identifiable information was disclosed while reporting results, ensuring participants' privacy was preserved throughout the study (Gravetter & Forzano, 2011:101). The physical surveys were stored in a secure safe within the IT department, following ethical clearance procedures outlined by the North-West University's Economic and Management Sciences Research Ethics Committee. This approach guaranteed that participants could provide honest responses without fear of being identified, fostering trust and encouraging candid participation.

Informed consent

Before participating in the study, all respondents had to provide informed consent. This was accomplished by distributing an informed consent form alongside the questionnaire. The form clearly outlined the purpose of the study, the procedures involved, and any potential risks or benefits associated with participation, all explained in clear and accessible language (Ahmed, 2024:17). Participants were notified that their participation was entirely voluntary and that they could withdraw from the study at any time with no adverse consequences. By obtaining informed consent, the study ensured that participants entered the research process willingly and thoroughly understood it, upholding the ethical standards of transparency and participant autonomy.

Voluntary participation

Participation in this study was strictly voluntary, and no participant was coerced or pressured to participate. All individuals were free to decline participation or withdraw from the research at any point without consequence. The snowball sampling method used in this study allowed participants to recommend others within their professional network, but this process respected the autonomy of all individuals involved. The principle of voluntary participation was emphasised throughout the data-collection process, ensuring that participants felt respected and comfortable during their involvement in the study. By maintaining this principle, the study safeguarded the ethical

treatment of all respondents and ensured that their participation was free from undue influence (Saunders *et al*., 2023:262).

Minimisation of harm

A critical ethical principle guiding this research was the minimisation of harm. Every effort was made to ensure that participants were not exposed to any physical, psychological, or emotional risks due to their participation. The questionnaire was designed to be neutral and non-invasive, avoiding topics that might cause discomfort or distress. Participants were also informed that they had the right to skip any questions they did not feel comfortable answering, reducing the risk of harm (Gravetter & Forzano, 2011:116). Additionally, the ethical review process ensured that all questions posed in the survey were in line with the standards set by the North-West University's Ethics Committee, and feedback from the committee was incorporated into the final questionnaire design.

Data protection and security

The research adhered to stringent data protection protocols, ensuring that all data collected was handled by relevant laws, including South Africa's POPIA. Data was securely stored on a password-protected system, and access was restricted to the researcher and authorised personnel only. The partner company's IT department ensured the data was securely stored and managed throughout the research process. No data was shared with third parties without the explicit consent of the participants (Ahmed, 2024:19). Upon completion of the research, the data will be retained for a predetermined period, in line with ethical guidelines, after which it will be safely disposed of. This ensures that participants' data is treated with the utmost care and their privacy is respected throughout the study. These robust data-protection measures and strict adherence to ethical standards ensured that participants' rights were safeguarded at all stages of the research process.

3.10 Limitations of the methodology

Despite the approach taken in designing the research and collecting data, several potential limitations in the methodology could influence the study's findings. While every effort was made to address these limitations, they remain factors that may affect the generalisability and interpretation of the results.

Sample size

A fundamental limitation of this study is the potential constraints on the sample size. Although the target population comprises managers and employees within the South African manufacturing sector, the sample size may be limited by participant availability and willingness to respond. Non-probability sampling methods, specifically snowball sampling, present an inherent limitation, as they may lead to a smaller or less representative sample than intended. Snowball sampling relies on referrals, which could introduce bias as respondents may share similar perspectives due to their professional connections (Gravetter & Forzano, 2011:135). This could hinder the ability to generalise the findings to the broader manufacturing sector in South Africa. Efforts were made to mitigate this limitation by snowball sampling with diverse participants across various organisational levels and company types. Additionally, the permission granted by a mining and machinery development company in Johannesburg to access its database of manufacturing facilities in Gauteng was instrumental in broadening the participant pool. However, despite these precautions, the potential for an unrepresentative sample due to the nature of the snowball method remains a challenge that could affect the study's overall generalisability.

Data-collection constraints

Another limitation is the reliance on self-reported data collected through structured questionnaires. Self-reporting can introduce response bias, where participants may provide socially desirable answers rather than accurate reflections of their experiences or views (Saunders *et al*., 2023:278). This is particularly relevant to the current study, where participants may feel compelled to present favourable perceptions of leadership or organisational culture, mainly when reflecting on sensitive areas such as leadership performance. Furthermore, the data collection process was facilitated through online questionnaires, which may have limited participation from individuals less familiar with digital tools or those with limited internet access.

To address response bias, the questionnaire was carefully designed to ensure anonymity and encourage honesty. The IT department, which distributed and collected the surveys, followed strict confidentiality protocols to reassure participants that their responses would remain anonymous. The North-West University's ethics guidelines supported these precautions, and participants were explicitly informed of the secure handling of their responses. Nonetheless, the limitations of self-reporting remain a potential source of bias that could affect the accuracy of the data collected.

Cross-sectional design

The study used a cross-sectional research design, collecting data simultaneously. While this design efficiently examines relationships between leadership styles and quality culture, it limits the ability to capture longitudinal effects. This means that any changes in leadership behaviours or organisational culture over time cannot be observed, making it difficult to establish causality or assess how leadership practices evolve in response to organisational changes (Ahmed, 2024:23). While the cross-sectional design provides a valuable snapshot of the current state of leadership and quality culture within the South African manufacturing sector, it cannot account for the dynamic nature of these relationships over time. A longitudinal study, while more resource-intensive, would offer more profound insights into how these variables interact and change. Therefore, the findings from this study should be interpreted as reflecting the relationships at a single point in time rather than providing evidence of long-term effects.

Generalisation to other sectors

Another limitation is the study's focus on the South African manufacturing sector. While this focus is appropriate given the research objectives, it restricts the generalisability of the findings to other industries or regions. Leadership styles and the impact of leadership on quality culture may differ significantly across industries, and the results of this study may not be directly applicable to sectors with different operational contexts or cultural environments (Saunders *et al*., 2023:327). It is essential to consider this limitation when applying the findings to other contexts. The insights gained from this study are valuable for the South African manufacturing sector but should be used cautiously in different industries or geographic regions. Future research could expand the scope to incorporate additional sectors or areas, enhancing the generalisability of the findings beyond the South African manufacturing sector.

Potential non-response bias

Finally, the study may be subject to non-response bias, where specific population segments choose not to participate, leading to an overrepresentation of perspectives. For example, employees with negative experiences related to leadership may be less likely to participate, which could result in an overly optimistic view of leadership practices in the findings. This type of bias could distort the results and reduce the reliability of the conclusions (Gravetter & Forzano, 2011:149). Efforts were made to minimise non-response bias through follow-up reminders and emphasising the voluntary nature of participation and the privacy of responses. The IT department played a vital role in ensuring that participants were reminded to complete the questionnaire while

adhering to the ethical guidelines established by the North-West University. However, despite these efforts, the possibility of non-response bias remains a limitation that could influence the study's outcomes.

3.11 Summary

This chapter provided an overview of the research methodology used in the study, which aimed to investigate the relationship between leadership styles and the development of a quality-centric culture within South African manufacturing companies. The research was underpinned by a positivist philosophy that guided this relationship's systematic and objective exploration. The deductive approach allowed the study to formulate hypotheses based on existing theories and test them by collecting and analysing quantitative data. The methodology was designed, starting with obtaining ethics clearance from the North-West University's EMS-REC to ensure adherence to ethical standards throughout the research. I used a structured questionnaire as the primary data-collection instrument, which allowed for the collection of consistent and objective data from a sample of 500 participants, including managers and employees in the Gauteng manufacturing sector. The collaboration with a gatekeeper from the company's IT department further ensured the secure handling and confidentiality of the data collected.

The snowball sampling method was used to recruit participants. While effective in gaining access to knowledgeable respondents, it introduced potential limitations such as sample bias. Despite these limitations, efforts were made to ensure a diverse and representative sample that could provide generalisable insights into the South African manufacturing sector. Data analysis was performed using SPSS, combining descriptive and inferential statistics to test the hypotheses. Statistical techniques such as correlation and multiple regression analysis allowed the study to assess the strength of relationships between leadership styles and quality culture. The methodology also ensured reliability and validity by conducting tests such as Cronbach's alpha for internal consistency and factor analysis for construct validity.

The chapter also outlined the ethical considerations integral to the study, including maintaining confidentiality, obtaining informed consent, and ensuring voluntary participation. These practices ensured the research's integrity and safeguarded all participants' rights and privacy. While the methodology was designed to be robust and rigorous, the chapter acknowledged several limitations, including potential biases related to the sample size, the self-reported nature of the data, and the study's cross-sectional design. These limitations may affect the generalisability of the findings and should be considered when interpreting the results. In conclusion, this chapter provided a transparent, structured, and ethically sound framework to conduct the research. The

chosen methodology allowed for the objective examination of the impact of leadership styles on quality culture, contributing valuable insights to both academic theory and practical applications within the South African manufacturing industry. The combination of a well-justified research philosophy, a rigorous data-collection and analysis process, and a transparent consideration of limitations ensures that this study's findings are credible and applicable to real-world leadership practices.

CHAPTER 4 DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter examines and evaluates the data gathered during the empirical phase of the study, concentrating on the correlation between leadership styles and the cultivation of a quality culture in the South African manufacturing sector. It aims to deliver a brief and thorough overview of the respondents' demographic profile alongside the principal findings concerning the identified leadership styles, transformational, transactional, and servant leadership, and their relationship with quality culture.

The results were collected using a structured survey administered to participants in the manufacturing sector, primarily targeting managers and employees in diverse leadership and operational positions. The data presentation is structured into distinct sections: a demographic overview of respondents, an analysis of leadership styles, and an examination of the quality culture in the manufacturing sector. A correlation analysis assesses the relationship between various leadership styles and the quality culture practices mentioned in the study. The following sections will explore these critical areas in greater depth, offering statistical insights and interpretations that correspond with the research aims. This investigation seeks to uncover critical patterns and provide detailed knowledge of the impact of leadership on quality culture across the South African manufacturing sector.

4.2 Demographic overview of respondents

4.2.1 Age distribution

The age distribution of respondents, as shown in Figure 4.1, ranged from 19 to 74 years, with a mean age of approximately 46 years. As depicted in the figure, 12.8% of the respondents were between 19 and 29 years old, while 22.0% fell within the 30 to 39 age categories. The largest group, comprising 25.4% of respondents, was aged 40 to 49 years. Additionally, 18.4% were in the 50 to 59 years range, and 21.4% of respondents were 60 years and older. The youngest participant was 19, while the oldest was 74.

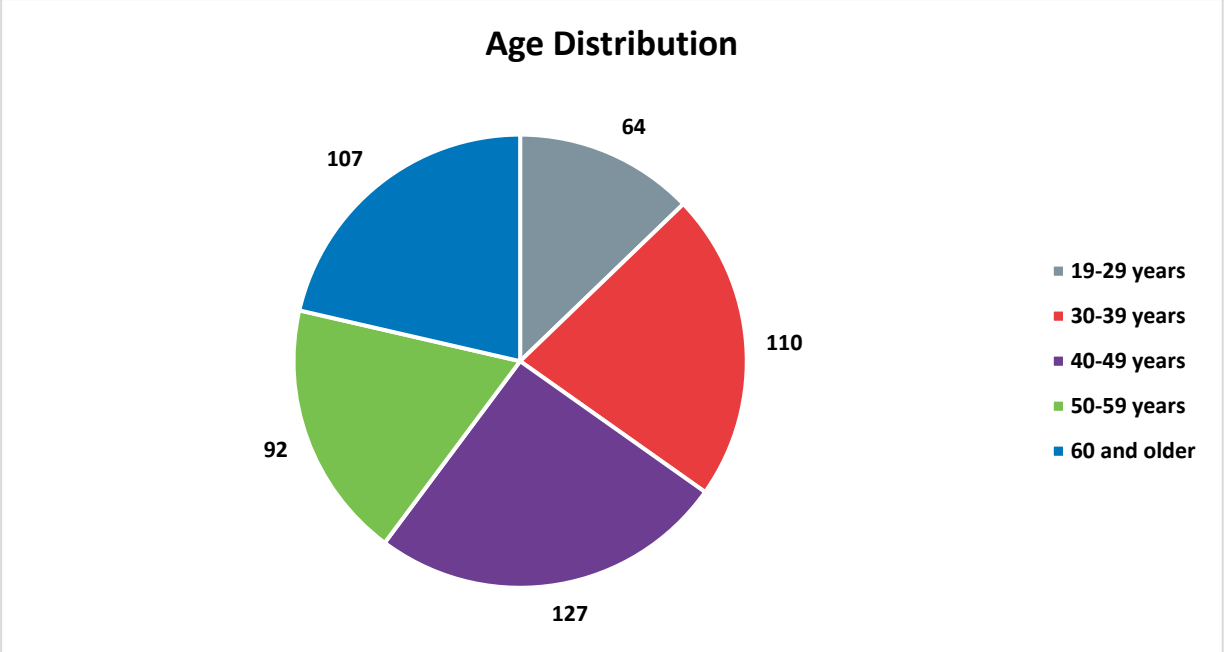

Figure 4.1: Age distribution of respondents

Figure 4.1 highlights a predominantly middle-aged to older workforce, suggesting that many participants possess significant professional experience. Including younger and older respondents provides valuable insights into how leadership styles may differ across age groups within the South African manufacturing sector.

4.2.2 Educational qualifications

The educational qualifications of the respondents, as shown in Figure 4.2, illustrate a wide range of academic backgrounds. The largest group of respondents, 24.8%, held an NQF Level 4 - Gr 12 qualification, 17.0% with an NQF Level 2 - Gr 10 qualification and 16.8% with an NQF Level 1 - Gr 9 qualification. Additionally, 16.0% of the respondents possessed an NQF Level 5 - Diploma, and 13.2% held an NQF Level 3 - Gr 11 qualification. Fewer respondents, 11.8%, held an NQF Level 7 - B degree, while only 0.4% had an NQF Level 9 - Master's degree. These figures highlight the diversity of educational levels within the workforce, ranging from secondary education to postgraduate qualifications, reflecting the various roles and responsibilities within the manufacturing sector.

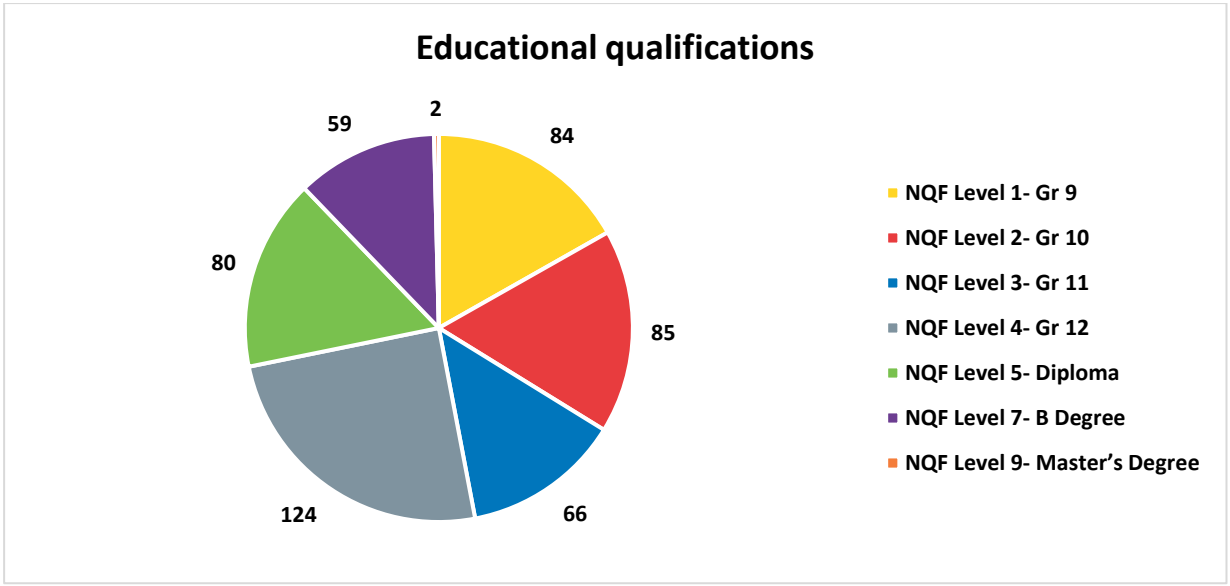

Figure 4.2: Educational qualifications of respondents

4.2.3 Employment status and occupational level

All 500 respondents were permanently employed, indicating a stable South African manufacturing sector workforce. As shown in Figure 4.3, the breakdown of occupational levels reveals a diverse distribution of roles among the respondents. The largest group, 25.2%, were artisans, followed by 21.0% classified as general workers. 19.8% of respondents occupied middle management/head of department (HOD) roles, while 17.8% were assistant workers. A smaller portion, 16.2%, held senior management/executive positions.

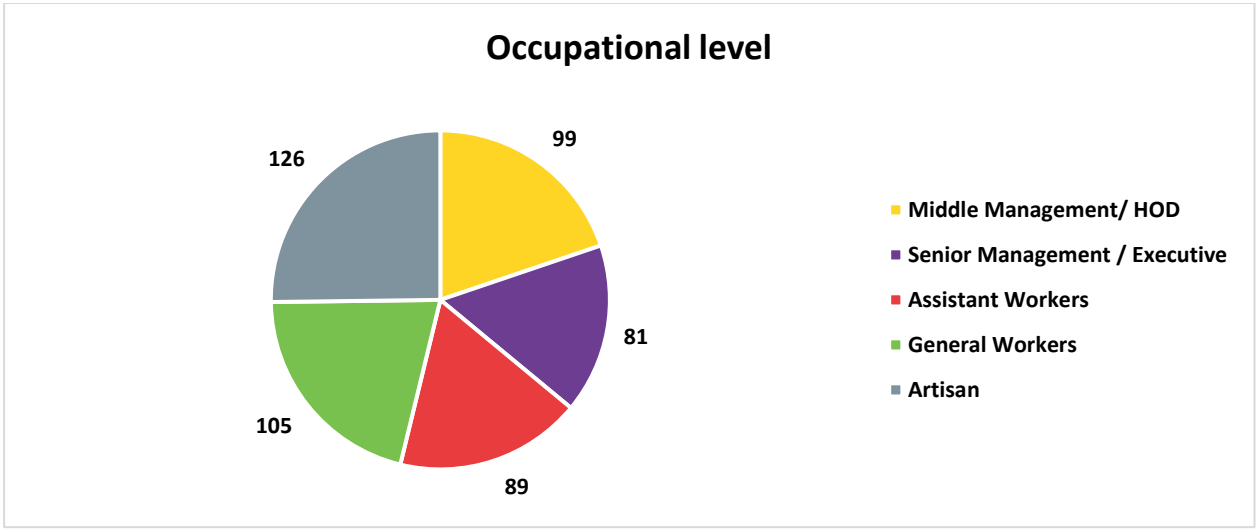

Figure 4.3: Occupational levels of respondents

This distribution demonstrates that the survey included participants from various occupational levels, providing a comprehensive view of the leadership dynamics and quality culture across various employment levels within the manufacturing sector.

4.2.4 Years of experience at the company and in current position

Figure 4.4 illustrates the distribution of years of experience among employees at the company, categorised into three distinct groups: zero to five years, six to 10 years, and 11+ years. The largest segment is those with more than 11 years of experience, comprising 250 employees, indicating that a significant portion of the workforce has long-standing tenure with the company. This may suggest a strong employee retention rate or a workforce that values organisational stability. The next largest group is those with zero to five years of experience, consisting of 137 employees, representing a newer segment of the workforce, possibly including recent hires or early-career employees. Lastly, 113 employees have been with the company for six to 10 years, forming a middle-tenure group that may be transitioning to more senior roles within the organisation. These figures indicate a balanced distribution across experience levels, with a noticeable lean towards more experienced employees.

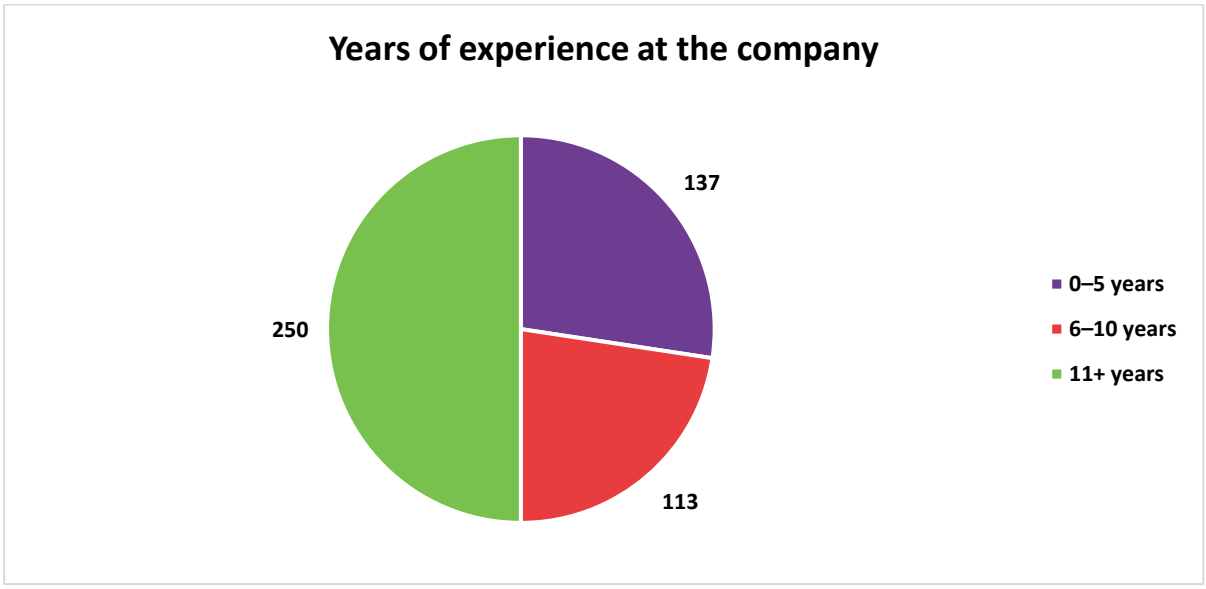

Figure 4.4: Years of experience at the company

Figure 4.5 presents the employees' distribution based on the years they have spent in their current position. The largest category consists of those who have held their position for zero to three years, with 190 employees. This suggests significant recent role changes or promotions,

indicating a dynamic internal promotion system or hiring to fill critical roles. The next largest group is those who have remained in their current position for more than eight years, comprising 183 employees. This reflects a segment of the workforce that has likely reached stability or specialisation in their roles. Lastly, 127 employees have been in their current position for four to seven years, representing a transitional group that may be on the cusp of taking on more advanced responsibilities or preparing for future role changes. This distribution underscores a healthy balance between newly promoted employees and those with longstanding experience, fostering organisational innovation and continuity.

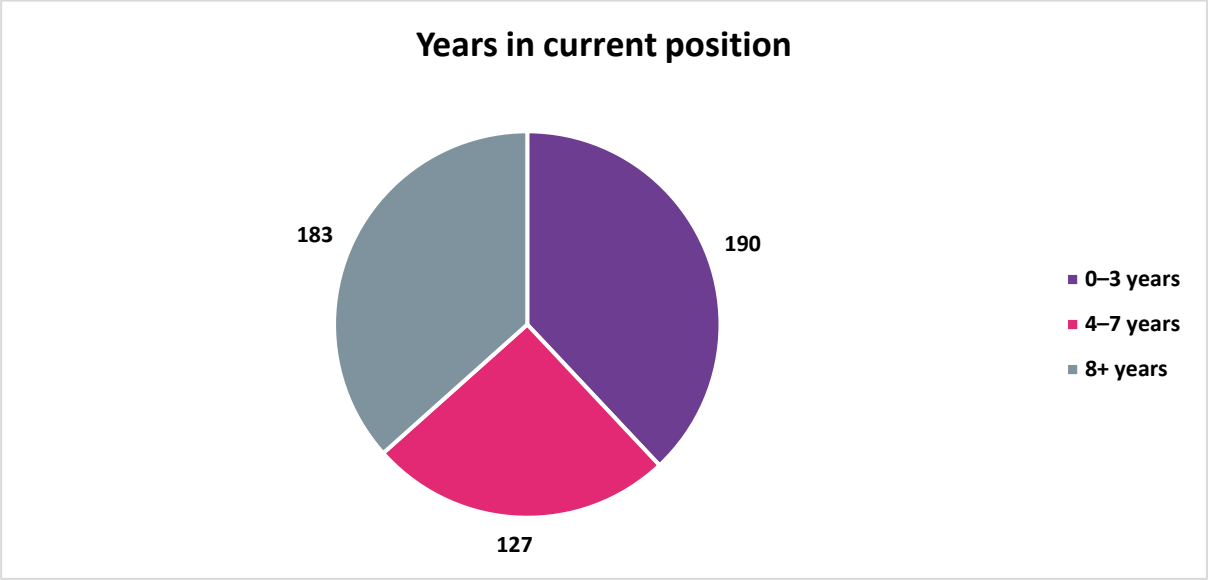

Figure 4.5: Distribution of years in current position

4.2.5 Organisation size

Figure 4.6 provides an overview of the distribution of organisation sizes within the surveyed companies, divided into three categories: 51 to 100 employees, 101 to 500 employees, and companies with more than 500 employees. The data shows that most respondents are employed in companies with 51 to 100 or 101 to 500 employees, with 191 and 192 employees, respectively, in these categories. This relatively balanced distribution between these two categories suggests that a significant portion of the workforce is employed in medium-sized companies. In contrast, only 117 employees work in companies with more than 500 employees. This lower figure indicates that fewer respondents are part of larger companies, which may reflect the composition of the manufacturing sector surveyed, where smaller to medium-sized companies may dominate.

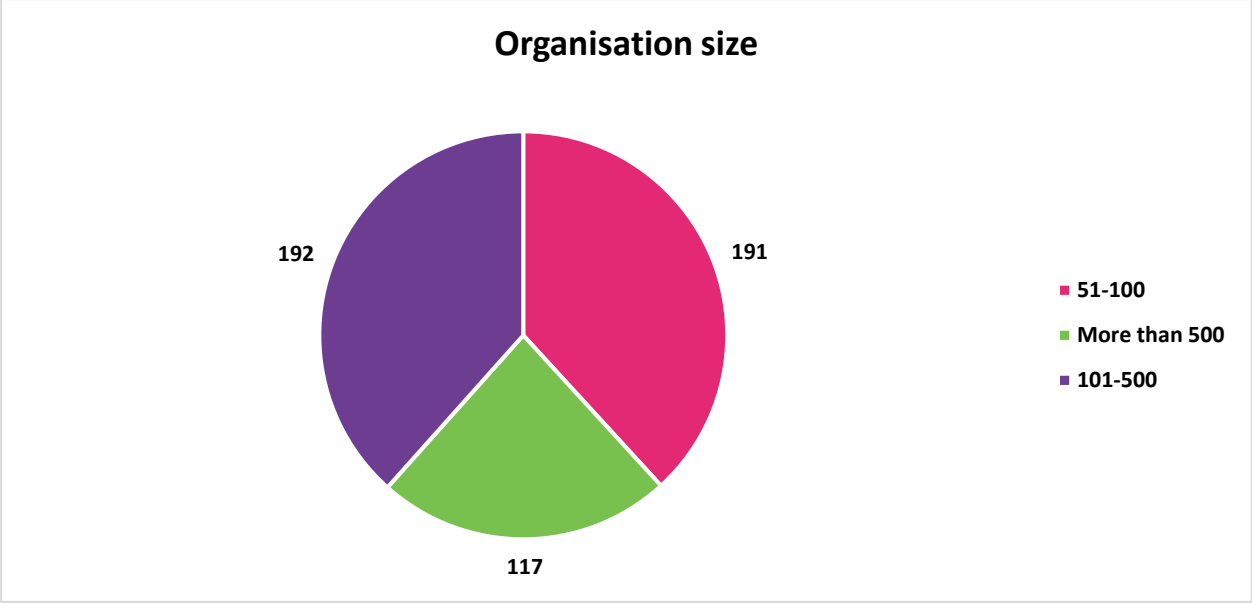

Figure 4.6: Organisation size of respondents

4.3 Reliability and validity

4.3.1 Reliability

The questionnaire was designed to ensure reliability and validity by incorporating well-established frameworks, including the MLQ for assessing transformational and transactional leadership styles and the SLQ for evaluating servant leadership (Gravetter & Forzano, 2011). The section on quality culture was based on recognised quality management frameworks (Ahmed, 2024), all of which were validated for accuracy and consistency.

Reliability refers to the degree of consistency in the survey results when the instrument is used repeatedly under similar conditions (Mohajan, 2017). As explained in Chapter 3, internal consistency was tested using Cronbach's alpha, a statistical measure that evaluates how closely related a set of items are as a group (Pallant, 2020). This method is particularly suitable for Likert-scale surveys, such as the one used in this study, where multiple items are designed to measure the same construct. The Cronbach alpha coefficient can be interpreted as the proportion of consistent variance, with a minimum value of 0 (indicating no consistent variance) and a maximum value of 1 (indicating all variance is consistent). In simpler terms, it represents the percentage of reliability (Saunders *et al*., 2023:523). Table 4.1 provides a theoretical understanding of Cronbach's alpha:

Table 4.1: Theoretical understanding for the Cronbach alpha coefficient

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Satisfactory
$0.7 > \alpha \geq 0.6$	Uncertain
$0.6 > \alpha \geq 0.5$	Meagre
$0.5 > \alpha$	Undesirable

The Cronbach alpha coefficient was calculated for each of the four constructs in the customer feedback form, as shown in Table 4.2. The table indicates that Cronbach alpha values for all four constructs exceed the threshold of 0.7, demonstrating strong internal consistency. Therefore, the survey feedback form used in this study can be considered reliable.

Table 4.2: Survey feedback from Cronbach's alpha coefficient

Construct	No of items (questions)	Cronbach's alpha coefficient (α)
Construct A Transformational leadership	6	0.832
Construct B Transactional leadership	4	0.748
Construct C Servant leadership	5	0.830
Construct D Quality culture	6	0.825

4.3.2 Validity

Validity refers to the extent to which the measurement instrument accurately assesses what it is intended to measure (Mohajan, 2017). For this study, the validity test applied to the questionnaire was construct or content validity, which evaluates how well the individual items within the questionnaire represent the constructs being measured and whether they cover the full scope of those constructs (McGuire *et al*., 2020). The researcher must establish validity after confirming the instrument's reliability (Clark & Watson, 2019).

Construct validity can be measured through confirmatory factor analysis (CFA) (Mohajan, 2017). Pallant (2020) explains that factor analysis is a data-reduction technique used to condense large variables or scale items into smaller factors by identifying correlation patterns. Essentially, items closely related to each other but unrelated to other items are grouped into new variables, representing shared dimensions (Pallant, 2020). This approach is commonly used when developing instruments to uncover the underlying structure of the data. This study conducted CFA on the four constructs, using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy as a benchmark. The KMO test assesses whether the data is suitable for factor analysis by measuring the proportion of variance that could be attributed to common factors (Mohajan, 2017). The KMO value ranges from 0 to 1, where values closer to 1 indicate that the data is more appropriate for factor analysis (Pallant, 2020). Table 4.3 provides a theoretical understanding of the KMO values (Glen, 2014c).

Table 4.3: Theoretical understanding of the KMO value

KMO value	Degree of common variance
0.91 and above	Excellent
0.81-0.9	Great
0.71-0.8	Good
0.5-0.7	Average
0.49 and below	Do not factor

The KMO value, which measures sampling adequacy, was calculated for each of the four constructs in the survey feedback form, as presented in Table 4.4. The table indicates that the KMO values for all four constructs are above 0.7. This confirms that the sample size is sufficient for factor analysis, validating the measurements of the constructs. Therefore, the survey feedback form used in this study is reliable and supports its validity.

Table 4.4: Survey feedback from KMO value

Construct	No of items (questions)	Measure of sample adequacy (KMO value)
Construct A Transformational leadership	6	0.829
Construct B Transactional leadership	4	0.764
Construct C Servant leadership	5	0.836
Construct D Quality culture	6	0.877

4.3.3 Bartlett's test of sphericity and factor variance

Bartlett's test of sphericity evaluates whether the correlation matrix (composed of Pearson correlations) is an identity matrix, thereby determining redundancy among variables that can be grouped into factors (Glen, 2014c). A significance level of less than 0.05 suggests that factor analysis could be appropriate to summarise the data into critical factors (Pallant, 2020). Typically, Bartlett's test is conducted alongside the KMO test to ensure that factor analysis is a valid technique for data reduction, effectively compressing data meaningfully (Wheelwright *et al*., 2020).

Table 4.5: Survey feedback form Bartlett's test of sphericity

Construct	Bartlett's test of sphericity
Construct A Transformational leadership	Approx. chi-square 1042.510 df 15 Sig <0.001
Construct B Transactional leadership	Approx. chi-square 424.965 Df 6 Sig <0.001
Construct C Servant leadership	Approx. chi-square 846.975 Df 10 Sig <0.001
Construct D Quality culture	Approx. chi-square 904.857 df 15 Sig <0.001

Table 4.5 demonstrates that Bartlett's test of sphericity achieved statistical significance for all four constructs of the survey feedback form, with significant values below 0.001 (Wheelwright *et al*.,

2020). This confirms that the dataset was appropriate for data reduction, allowing for a meaningful factor analysis.

Table 4.6 presents the eigenvalues produced by the principal component analysis for each of the four constructs, i.e. transformational leadership, transactional leadership, servant leadership, and quality culture. The results show that each construct yielded only one factor with an eigenvalue greater than 1. The respective percentage of variance explained by these factors is as follows: transformational leadership (54.368%), transactional leadership (56.949%), servant leadership (59.546%), and quality culture (53.708%). These calculations demonstrate that all components (questions) loaded significantly onto their respective constructs.

Table 4.6: Survey form feedback: Total variance explained

Construct A Transformational leadership	**Initial eigenvalues**			**Extraction sums of squared loadings**		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.262	54.368	54.368	3.262	54.368	54.368
2	0.901	15.009	69.377			
3	0.558	9.308	78.685			
4	0.509	8.483	87.168			
5	0.426	7.107	94.275			
6	0.344	5.725	100.000			
Construct B Transactional leadership	**Initial eigenvalues**			**Extraction sums of squared loadings**		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	2.278	56.949	56.949	2.278	56.949	56.949
2	0.650	16.258	73.207			
3	0.549	13.723	86.930			
4	0.523	13.070	100.00			
Construct C Servant leadership	**Initial eigenvalues**			**Extraction sums of squared loadings**		

Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	2.977	59.546	59.546	2.977	59.546	59.546
2	0.662	13.248	72.794			
3	0.506	10.123	82.917			
4	0.448	8.967	91.884			
5	0.406	8.116	100.00			
Construct D Quality Culture	**Initial eigenvalues**			**Extraction sums of squared loadings**		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.222	53.708	53.708	3.222	53.708	53.708
2	0.663	11.044	64.752			
3	0.643	10.717	75.469			
4	0.513	8.553	84.022			
5	0.505	8.422	92.444			
6	0.453	7.556	100.00			

The analysis above shows that using these constructs as factors retains an appropriate level of information in the data. Therefore, the identified factors for each construct in the survey provide a reliable representation for further analysis.

4.4 Analysis of leadership styles

4.4.1 Transformational leadership

Table 4.7 presents the results of the analysis of transformational leadership within the organisation based on responses from 500 participants. The table includes six key items assessing leadership behaviours: “My manager clearly communicates our organisation’s goals”, “My manager clearly communicates our organisation’s strategies”, “My manager encourages innovative approaches to improve product quality”, “My manager motivates us to achieve beyond our own expectations”, “My manager leads by example in terms of quality”, and “My manager leads by example in terms of work ethic”. Each item was measured on a seven-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The weighted average was used to determine the overall perception, with a threshold of 5.083 to distinguish between *low perception*

and *high perception*. The table also includes each item's mean and standard deviation, providing insights into the central tendency and variability of responses.

Table 4.7: Transformational leadership: Survey response analysis

Transformational Leadership										
Items	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**Mean**	**SD**	**Decision**
My manager clearly communicates our organisation's goals.	6.2 (31)	8.4 (42)	9.2 (46)	11.8 (59)	14.0 (70)	26.6 (133)	23.8 (119)	4.94	1.86	Low perception
My manager clearly communicates our organisation's strategies.	6.4 (32)	9.2 (46)	10.4 (52)	16.8 (84)	10.8 (54)	26.6 (133)	19.8 (99)	4.75	1.86	Low perception
My manager encourages innovative approaches to improve product quality.	2.8 (14)	7.8 (39)	4.8 (24)	12.0 (60)	17.0 (85)	30.4 (152)	25.2 (126)	5.25	1.65	High perception
My manager motivates us to achieve beyond our own expectations.	4.4 (22)	8.4 (42)	9.0 (45)	11.2 (56)	13.0 (65)	30.4 (152)	23.6 (118)	5.06	1.78	Low perception
My manager leads by example in terms of quality.	5.2 (26)	5.6 (28)	7.4 (37)	9.0 (45)	11.6 (58)	32.0 (160)	29.2 (146)	5.29	1.77	High perception
My manager leads by example in terms of work ethic.	4.2 (21)	6.8 (34)	8.4 (42)	11.4 (57)	12.0 (60)	28 (140)	29.2 (146)	5.21	1.77	High perception

Note: N= 500, 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neutral, 5= somewhat agree, 6= agree, 7= strongly agree. Decision: weighted average = 30.05/6 = 5.083

The analysis of the transformational leadership data reveals mixed perceptions among respondents. The mean values range between 4.75 and 5.29, with a standard deviation of around 1.65 to 1.86, indicating some response variability. Items such as "My manager communicates our

organisation's goals" and "My manager communicates our organisation's strategies" both received mean scores below the 5.083 threshold, resulting in a decision of *low perception*. This suggests that respondents generally have a less favourable view of their managers' communication in these areas. In contrast, items such as "My manager encourages innovative approaches to improve product quality" and "My manager leads by example in terms of quality" scored above the weighted average, with mean values of 5.25 and 5.29, respectively. These were classified as *high perception*, indicating that respondents perceive their managers to be more effective in fostering innovation and leading by example regarding quality and work ethic.

4.4.2 Transactional leadership

Table 4.8 presents the results of the analysis of transactional leadership based on responses from 500 participants. The table evaluates four key aspects of transactional leadership behaviours, specifically focusing on the immediate feedback provided by managers, the link between rewards and quality standards, the clarity of performance targets related to quality, and the alignment of performance appraisals with quality objectives. Each item is rated on a seven-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The table includes the mean, standard deviation, and a decision based on the weighted average of 4.81, allowing for a determination of whether respondents have a *low perception* or *high perception* of each leadership behaviour.

Table 4.8: Transactional leadership: Survey response analysis

Transactional leadership										
Items	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**Mean**	**SD**	**Decision**
My manager provides immediate feedback on my work performance.	5.2 (26)	12.0 (60)	9.4 (47)	13.4 (67)	18.8 (94)	19.8 (99)	21.4 (107)	4.74	1.85	Low perception
Rewards in my organisation are directly linked to meeting quality standards.	6.2 (31)	15.2 (76)	8.2 (41)	16.2 (81)	10.4 (52)	26.4 (132)	17.4 (87)	4.58	1.91	Low perception
Clear performance targets related to quality are set by my manager.	5.8 (29)	8.2 (41)	7.6 (38)	11.0 (55)	16.2 (81)	30.0 (150)	21.2 (106)	4.98	1.80	High perception
My performance appraisal is closely tied to quality objectives.	4.0 (20)	10.6 (53)	7.6 (38)	13.6 (68)	15.2 (76)	29.6 (148)	19.4 (97)	4.92	1.76	High perception

Note: N= 500, 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neutral, 5= somewhat agree, 6= agree, 7= strongly agree. Decision: weighted average = 19.22/4 = 4.81

The analysis of Table 4.8 reveals varying perceptions of managerial behaviours. The mean values range between 4.58 and 4.98, with standard deviations from 1.76 to 1.91, indicating moderate response variability. The item “My manager provides immediate feedback on my work performance” shows a mean of 4.74, resulting in a *low perception* decision, suggesting that respondents generally feel feedback on their performance is not consistently timely. Similarly, “Rewards in my organisation are directly linked to meeting quality standards” received a mean of 4.58, also classified as *low perception*, indicating that many respondents do not perceive a strong connection between rewards and quality standards. On the other hand, “Clear performance targets related to quality are set by my manager” has a higher mean of 4.98, crossing the threshold of the weighted average and classified as *high perception*, showing that respondents feel that their managers set clear quality-related targets. Additionally, “My performance appraisal is closely tied to quality objectives” also resulted in a *high perception* decision, with a mean of 4.92, suggesting that performance evaluations are generally positively linked to quality objectives.

4.4.3 Servant leadership

Table 4.9 presents the results of the analysis of servant leadership based on responses from 500 participants. The table evaluates five key behaviours associated with servant leadership, explicitly focusing on managers' prioritisation of employee development and growth, concern for employee well-being, attention to professional needs, responsiveness to employee suggestions for improving quality and acting as a mentor rather than a supervisor. Each item is rated on a seven-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The table includes the mean, standard deviation, and a decision based on the weighted average of 4.87, categorising responses into either *low perception* or *high perception* of these leadership behaviours.

Table 4.9: Servant leadership: Survey response analysis

Servant Leadership										
Items	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**Mean**	**SD**	**Decision**
My manager prioritises my development and growth within the organisation.	6.2 (31)	9.6 (48)	9.0 (45)	14.6 (73)	15.0 (75)	29.8 (149)	15.8 (79)	4.75	1.80	Low perception
My manager shows genuine concern for my well-being.	5.6 (28)	7.2 (36)	7.6 (38)	15.8 (79)	13.4 (67)	27.8 (139)	22.6 (113)	4.98	1.79	High perception
My manager shows genuine concern for my professional needs.	5.4 (27)	8.8 (44)	6.2 (31)	16.0 (80)	18.4 (92)	25.6 (128)	19.6 (98)	4.88	1.76	High perception
My manager actively listens to and acts upon employee suggestions for improving quality.	5.6 (28)	10.4 (52)	8.4 (42)	15.0 (75)	12.0 (60)	26.0 (130)	22.6 (113)	4.86	1.86	Low perception
My manager serves more as a mentor than a supervisor.	6.8 (34)	10.0 (50)	6.6 (33)	14.2 (71)	14.0 (70)	25.6 (128)	22.8 (114)	4.87	1.88	High perception

Note: N= 500, 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neutral, 5= somewhat agree, 6= agree, 7= strongly agree. Decision: weighted average = 24.34/5 = 4.87

Table 4.9 reveals a significant variation in respondents' perceptions of key leadership behaviours when analysed. The mean values range from 4.75 to 4.98, and the standard deviations, which fall between 1.76 and 1.88, underscore the need for a more nuanced approach to understanding and addressing these behaviours.

The item "My manager prioritises my development and growth within the organisation" received a mean score of 4.75, falling below the weighted average threshold of 4.87, resulting in a *low perception* decision. This suggests that respondents feel their managers are not consistently prioritising their development and growth. Similarly, "My manager actively listens to and acts upon employee suggestions for improving quality" also resulted in a *low perception* decision, with a mean of 4.86, indicating room for improvement in managers' responsiveness to employee input. On the other hand, items such as "My manager shows genuine concern for my well-being" and "My manager serves more as a mentor than a supervisor" both scored above the weighted average, with means of 4.98 and 4.87, respectively, leading to *high perception* decisions. This reflects a more positive view of managers' concern for employee well-being and their role as mentors. Additionally, "My manager shows genuine concern for my professional needs" also received a *high perception* decision with a mean of 4.88, suggesting that respondents feel supported in their professional development.

4.5 Analysis of quality culture in manufacturing

Table 4.10 summarises responses related to the perception of quality culture within companies, as evaluated by employees. The table highlights six key items that reflect different aspects of quality culture, including prioritising high-quality outcomes, continuous improvement, quality training, departmental collaboration, and leadership's role in fostering quality culture. Each item is assessed based on a seven-point Likert scale, with corresponding percentages and frequencies provided for each rating. The mean and standard deviation (SD) are also included to provide insight into the overall perception of each item, with a decision column categorising perception as either high or low based on the mean scores. This analysis helps understand how employees perceive the emphasis on quality within their companies.

Table 4.10: Quality culture: Survey response analysis

Quality Culture										
Items	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**Mean**	**SD**	**Decision**
In my organisation, achieving high-quality outcomes is considered more important than meeting deadlines.	4.4 (22)	9.4 (47)	8.0 (40)	12.6 (63)	12.6 (63)	27.0 (135)	26.0 (130)	5.05	1.82	Low perception
Continuous improvement in processes is a key focus in my organisation.	3.8 (19)	6.8 (34)	7.4 (37)	11.8 (59)	15.2 (76)	30.8 (154)	24.2 (121)	5.17	1.70	High perception
Continuous improvement in products is a key focus in my organisation.	1.8 (9)	7.6 (38)	7.0 (35)	10.4 (52)	14.4 (72)	36.4 (182)	22.4 (112)	5.27	1.60	High perception
Quality training sessions are regularly conducted in my organisation.	6.8 (34)	11.0 (55)	8.0 (40)	13.0 (65)	15.8 (79)	28.2 (141)	17.2 (86)	4.73	1.85	Low perception
Employees are encouraged to collaborate across departments to enhance quality.	3.8 (19)	8.2 (41)	8.4 (42)	16.8 (84)	13.4 (67)	29.8 (149)	19.6 (98)	4.96	1.71	Low perception
Leadership in my organisation plays a critical role in fostering a culture focused on quality.	4.4 (22)	6.4 (33)	7.0 (35)	11.6 (58)	15.0 (75)	31.6 (158)	24.0 (120)	5.17	1.71	High perception

Note: N= 500, 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neutral, 5= somewhat agree, 6= agree, 7= strongly agree. Decision: weighted average = 30.35/6 = 5.05

The data presents the mean scores and standard deviations for six key items related to company quality culture. The item “Achieving high-quality outcomes is considered more important than meeting deadlines” has a mean of 5.05 and a standard deviation of 1.82, indicating response variability. “Continuous improvement in processes” shows a mean of 5.17 with a standard deviation of 1.70, while “Continuous improvement in products” has a mean of 5.27 and a standard deviation of 1.60. The item “Quality training sessions are regularly conducted” has a mean of 4.73 with a higher standard deviation of 1.85, reflecting greater dispersion in responses. “Collaboration across departments to enhance quality” reports a mean of 4.96 and a standard deviation of 1.71.

At the same time, “leadership plays a critical role in fostering a quality culture” has a mean of 5.17 and a standard deviation of 1.71. The data reveals varying degrees of consistency across responses, as indicated by the standard deviations for each item.

Table 4.11 shows that Pearson’s correlation coefficients between Construct D (Quality culture) and the six quality culture variables (QC1 to QC6) range from 0.685 to 0.771, indicating strong and highly significant relationships. These correlations reflect how various aspects of leadership and organisational practices contribute to fostering a quality culture. The highest correlation is with leadership’s role in fostering a quality culture (QC6), at 0.771, highlighting leadership’s pivotal role in promoting and sustaining a quality-oriented environment. Cross-department collaboration (0.750) and continuous improvement in processes (0.754) also show strong associations, emphasising the importance of teamwork and process enhancements in a robust quality culture. Regular quality training sessions (0.706) and continuous product improvement (0.725) further emphasise skill development and product innovation. Though still strong, the lowest correlation is achieving high-quality outcomes over meeting deadlines (QC1), at 0.685, suggesting that while quality is prioritised, deadlines remain essential.

Table 4.11 Correlation between quality culture and the six variables

Construct	**Test**	**QC1**	**QC2**	**QC3**	**QC4**	**QC5**	**QC6**
Construct D Quality culture	Pearson’s Correlation	0.685**	0.754**	0.725**	0.706**	0.750**	0.771**
** Correlation is significant at the 0.01 level (2-tailed)							

4.6 Correlation between leadership styles and quality culture

The study aims to quantify the strength and direction of the relationships between three leadership styles, i.e. transformational, transactional, and servant leadership, as well as the overall quality culture in these companies. Pearson’s correlation coefficient is used as the statistical measure to assess these relationships, providing numerical values that range between -1 and 1. The analysis focuses on the correlation values obtained from the data, highlighting the extent to which leadership styles are associated with quality culture within the examined context.

Table 4.12: Pearson's correlation between leadership styles and quality culture

Construct	Test	Construct D Quality culture
Construct A Transformational leadership	Pearson's Correlation	0.697**
Construct B Transactional leadership	Pearson's Correlation	0.740**
Construct C Servant leadership	Pearson's Correlation	0.725**
** Correlation is meaningful at the 0.01 level (2-tailed)		

The Pearson's correlation analysis provides the following results:

- **Transformational leadership**: The Pearson's correlation coefficient for the relationship between transformational leadership and quality culture is 0.697. This value indicates a strong positive correlation, suggesting a notable association between transformational leadership and promoting a quality-focused culture.
- **Transactional leadership**: The correlation between transactional leadership and quality culture is 0.740, representing a stronger positive correlation than transformational leadership. This suggests that transactional leadership is closely associated with quality culture in the data.
- **Servant leadership**: The Pearson's correlation coefficient for servant leadership and quality culture is 0.725. This result also indicates a strong positive relationship, like the correlation for transactional leadership.

All correlations are significant at the 0.01 level (2-tailed), meaning the observed relationships are statistically important and unlikely to be due to random chance. The results indicate a consistent positive association between the examined leadership styles and quality culture across the dataset.

Table 4.13 presents Pearson's correlation coefficients between the three leadership styles, transformational, transactional, and servant leadership and six different quality culture (QC) variables (QC1 to QC6).

Table 4.13 Correlation between leadership styles and quality culture variables

Construct	Test	QC1	QC2	QC3	QC4	QC5	QC6
Construct A Transformational leadership	Pearson's Correlation	0.445**	0.571**	0.526**	0.470**	0.531**	0.521**
Construct B Transactional leadership	Pearson's Correlation	0.484**	0.576**	0.544**	0.525**	0.560**	0.558**
Construct C Servant leadership	Pearson's Correlation	0.529**	0.518**	0.503**	0.541**	0.534**	0.550**
** Correlation is meaningful at the 0.01 level (2-tailed)							

The analysis of the correlations between leadership styles and quality culture factors uncovers significant relationships, all of which are highly meaningful at the 0.01 level. Transformational leadership emerges as a critical driver of continuous process improvement (QC2, 0.571), showcasing its effectiveness. The lowest correlation is with achieving high-quality outcomes over meeting deadlines (QC1, 0.445), suggesting that transformational leadership has a less pronounced effect on deadline-focused outcomes. Other moderate correlations, such as cross-departmental collaboration (QC5, 0.531) and continuous product improvement (QC3, 0.526), show that transformational leadership supports innovation and teamwork across the organisation. Overall, this style significantly impacts process improvements and collaboration.

For transactional leadership, the correlation coefficients are slightly higher, ranging from 0.484 to 0.576, indicating its strong and consistent role in fostering quality culture. As with transformational leadership, the highest correlation is with continuous process improvement (QC2, 0.576), highlighting its effectiveness in process management. Transactional leadership also highly correlates with cross-department collaboration (QC5, 0.560) and leadership's role in fostering a quality culture (QC6, 0.558), emphasising its structured approach to setting quality objectives and encouraging teamwork. The lowest correlation is achieving high-quality outcomes over deadlines (QC1, 0.484), indicating a solid relationship. Overall, transactional leadership plays a dominant role in maintaining operational quality and driving continuous improvement.

For servant leadership, the correlations range from 0.503 to 0.550, reflecting a meaningful, though somewhat less pronounced, impact on quality culture compared to the other leadership styles. The strongest correlation is with leadership's role in fostering a quality culture (QC6, 0.550), aligning with the servant leadership philosophy of empowering employees and creating a

supportive environment. Other notable correlations include quality training sessions (QC4, 0.541) and cross-department collaboration (QC5, 0.534), showing that servant leadership promotes teamwork and employee development through training. Its lowest correlation is with continuous improvement in products (QC3, 0.503), though still significant, indicating less emphasis on product innovation.

4.7 Significant patterns and insights

4.7.1 Demographic patterns and their impact on leadership and quality culture

The respondents' demographic profile reveals a predominantly middle-aged workforce, with most employees aged 40 to 49 (25.4%). This suggests that many respondents bring substantial professional experience, which may influence their perceptions of leadership effectiveness and quality culture. Moreover, the significant representation of older workers (21.4% aged 60 and above) may indicate a leadership cohort with established management styles that can profoundly impact organisational culture.

The educational qualifications of the respondents span a wide range, with 24.8% holding an NQF Level 4 - Gr 12 qualification and a smaller percentage (11.8%) possessing an NQF Level 7 - B degree. This broad educational spectrum reflects the sector's diversity of roles and skill levels. The higher proportion of less academically qualified workers suggests that leadership styles that focus on practical engagement, mentorship, and on-the-job training (as seen in servant leadership behaviours) may resonate strongly in fostering a quality culture.

4.7.2 Correlation between leadership styles and quality culture

Pearson's correlation analysis reveals a significant positive relationship between all three leadership styles and quality culture. Transactional leadership shows the strongest correlation (0.740), followed closely by servant leadership (0.725) and transformational leadership (0.697).

- **Transactional leadership**: The strong correlation of transactional leadership with quality culture (r = 0.740) suggests that performance-based management practices, such as setting clear targets, providing feedback, and aligning rewards with quality standards, play a crucial role in promoting a culture focused on continuous improvement. This is supported by the findings that respondents perceive managers who set clear performance targets related to quality (mean = 4.98) and appraise performance based on quality objectives (mean = 4.92) as contributing positively to quality culture.

- **Servant leadership**: With a correlation of 0.725, servant leadership significantly contributes to quality culture. The emphasis on employee well-being and professional development is highly valued, as reflected in the high perception of managers who show concern for employees' professional needs (mean = 4.88). This finding underscores the importance of servant leadership behaviours in creating an inclusive environment where quality improvements are driven by employee engagement and input.
- **Transformational leadership**: The relatively strong correlation of transformational leadership (r = 0.697) suggests that leadership behaviours fostering innovation and quality standards can meaningfully contribute to quality culture. Although there were mixed perceptions about managerial communication of organisational goals and strategies, managers who encouraged innovative approaches to quality improvement (mean = 5.25) were viewed positively. This aligns with the critical role of transformational leaders in inspiring teams to exceed their expectations in delivering quality outcomes.

4.7.3 Variations in leadership perception and implications for quality culture

While all three leadership styles positively correlate with quality culture, the data reveals nuanced differences in how respondents perceive specific leadership behaviours. For example, while servant leadership behaviours related to mentoring and genuine concern for employee well-being scored highly, transactional leadership behaviours such as immediate feedback and performance-based rewards were viewed less favourably (mean = 4.74 for feedback and mean = 4.58 for rewards linked to quality). These variations indicate that while a mix of leadership styles is beneficial, certain transactional practices may need improvement to enhance their effectiveness in fostering quality culture.

4.7.4 Organisational dynamics and experience

The findings indicate that experience levels also play a role in shaping perceptions of leadership and quality culture. A significant portion of the workforce has more than 11 years of tenure at their company (250 employees), reflecting a stable and experienced workforce. This long-term experience may contribute to a more substantial alignment between leadership practices and quality culture, as skilled employees often have a deeper understanding of organisational expectations. Conversely, the newer employees (0-5 years of experience) may require more transformational and servant leadership behaviours, such as mentoring and clear communication of goals, to fully integrate into the quality culture.

4.8 Summary of findings

4.8.1 Demographic overview

The analysis of the demographic data revealed a diverse workforce in terms of age, educational qualifications, occupational levels, and years of experience. The age distribution showed a predominance of middle-aged employees, with a significant portion of respondents aged 40 to 49. Educational qualifications ranged from secondary-level education to postgraduate qualifications, reflecting a broad spectrum of roles and responsibilities within the manufacturing sector. The employment status and occupational-level analysis indicated a workforce composed of general workers, artisans, and middle-to-senior management, with a stable distribution across the different occupational levels. In terms of experience, a notable portion of the workforce had more than 11 years of experience with their respective companies, which suggests organisational stability and long-term employee retention.

4.8.2 Reliability and validity

The reliability of the survey instruments was confirmed using Cronbach's alpha coefficients, with all constructs exceeding the acceptable threshold of 0.7. Transactional leadership demonstrated the highest internal consistency, with a Cronbach alpha of 0.748, while transformational and servant leadership also showed good reliability at 0.832 and 0.830, respectively. The quality culture construct had an alpha of 0.825, indicating strong internal consistency. KMO values were above 0.7 for all constructs, confirming the adequacy of the sample size for factor analysis. Bartlett's test of sphericity was significant ($p < 0.001$) for all constructs, supporting the appropriateness of the factor analysis approach. The eigenvalue analysis showed that only one factor per construct had an eigenvalue above 1, indicating that the constructs were well-defined and statistically valid for further study.

4.8.3 Analysis of leadership styles

The analysis of leadership styles revealed that transactional leadership had consistently high correlations with the quality culture constructs, particularly in areas related to performance standards and operational efficiency. Transformational leadership was found to have a moderate but significant impact on promoting continuous improvement and innovation, while servant leadership contributed notably to employee development and well-being. However, transactional leadership's structured approach to setting performance expectations and providing clear feedback made it the most influential in driving a quality-focused culture in the manufacturing sector.

4.8.4 Analysis of quality culture in manufacturing

The empirical data demonstrated strong associations between leadership behaviours and quality culture development. Quality culture was most strongly correlated with leadership's role in fostering quality culture (QC6) and cross-department collaboration (QC5). The emphasis on continuous improvement in processes (QC2) and products (QC3) was also significantly linked to leadership practices. However, the relationship between quality outcomes and meeting deadlines (QC1) showed a lower correlation, suggesting that, in some cases, operational pressures may limit the full impact of leadership on quality outcomes.

4.8.5 Analysis of quality culture in manufacturing

The correlation analysis confirmed that transactional leadership exhibited the most vital relationship with critical elements of quality culture, particularly in maintaining operational standards and ensuring clear communication of performance objectives. Transformational leadership was closely associated with fostering a culture of innovation and continuous improvement. In contrast, servant leadership showed a significant relationship with employee engagement and the development of supportive work environments. The data indicated that while each leadership style contributes to quality culture, transactional leadership had the most consistent and measurable impact across the surveyed manufacturing companies.

CHAPTER 5 CONCLUSION AND IMPORTANCE

5.1 Introduction

This final chapter discusses the core findings of the research, reflecting on the achievement of the primary and secondary objectives and the research questions posed at the outset. The study aimed to investigate the relationship between leadership styles, specifically transformational, transactional, and servant leadership, and the development of a quality culture within the South African manufacturing sector. By exploring this relationship, the research sought to understand how different leadership approaches influence key elements of quality culture, such as continuous improvement, operational excellence, and employee engagement.

The empirical data presented in Chapter 4, along with the theoretical frameworks discussed in Chapter 2, provides a comprehensive basis for evaluating the impact of leadership on fostering a quality culture. Transactional leadership emerged as the most significant driver of quality outcomes, while transformational and servant leadership played notable but more specific roles. This chapter, therefore, revisits the key research objectives, examines the correlation between empirical findings and literature, and assesses the extent to which the research questions have been answered. This chapter evaluates the implications of the study's findings for theory and practice, addresses the research's limitations, and suggests avenues for future investigation. It proposes practical recommendations for leadership practices within the manufacturing sector, focusing on enhancing quality culture through structured leadership approaches. Through this final analysis, the chapter aims to consolidate the study's contributions to academic knowledge and industry practice, offering a strategic pathway for effectively integrating leadership styles to improve quality outcomes in the South African manufacturing sector.

5.2 Overview of research objectives

5.2.1 Primary objective

The primary objective of the research was to explore the relationship between leadership styles and establishing a quality culture within manufacturing companies in South Africa. This involved identifying which leadership style most significantly contributes to creating an environment where quality is a core organisational value, supporting long-term sustainability and competitiveness. The study's findings demonstrated that transactional leadership had the most substantial impact on promoting a structured and consistent approach to quality, particularly in setting clear performance expectations and linking rewards to quality outcomes.

5.2.2 Secondary objectives

The secondary objectives were formulated to deepen the understanding of the specific leadership elements that influence quality culture and how these elements manifest within the unique context of the South African manufacturing industry.

These objectives included:

- identify and categorise leadership styles in South African manufacturing companies;
- thoroughly analyse the constituents of a quality culture in the manufacturing sector; and
- examine the dynamics between leadership styles and quality culture in South African manufacturing.

5.3 Achievement of research objectives

5.3.1 Primary objective

The study's primary objective was to explore the correlation between leadership styles and developing a quality culture in the South African manufacturing sector. The data unequivocally confirmed that transactional leadership emerged as the most significant style in fostering a robust quality culture. This finding aligns with previous studies that underscore the effectiveness of transactional leadership in environments requiring structure and precision (Berkovich & Eyal, 2021:131). The style's emphasis on clear performance expectations, structured feedback mechanisms, and reward systems proved pivotal in promoting operational efficiency, maintaining high standards, and ensuring quality outcomes.

Contrary to initial theoretical expectations, transformational leadership, while valuable in driving innovation and employee engagement, did not exert as strong or directly influence the quality culture as anticipated. Although transformational leadership is traditionally associated with fostering creativity and long-term vision (Yang & Yang, 2019:293) within the South African manufacturing sector context, its indirect influence was most evident in motivating employees to embrace forward-thinking approaches. This finding suggests that while transformational leadership may inspire innovation, it is less effective in addressing the immediate operational demands and quality control processes that are central to the sector (Hartnell *et al*., 2016).

Servant leadership also played a moderate role in influencing the quality culture. The empirical data showed that servant leadership's primary contribution was fostering a supportive and engaged workforce. While not directly impacting quality metrics, servant leadership created an environment encouraging employee well-being and trust, indirectly supporting the broader quality culture (Khan *et al.,*2022:1038; Nauman *et al*., 2022:18). This leadership style's impact on

employee engagement and collaboration aligns with literature suggesting its niche role in promoting a cooperative culture. However, its contribution to operational outcomes was more limited than transactional leadership (Hartnell *et al*., 2023:534).

5.3.2 Secondary objectives

The study's secondary objectives were designed to provide a more detailed understanding of the relationship between specific leadership behaviours and quality culture in the South African manufacturing sector. These objectives were successfully achieved, with the findings contributing to a nuanced understanding of how leadership behaviours influence quality outcomes within this context.

The first key finding confirmed that transactional leadership was the most dominant style in the South African manufacturing sector, followed by transformational and servant leadership. Transactional leadership, focusing on clear performance expectations, structured feedback, and reward systems, was pivotal in ensuring consistency and adherence to quality standards. This finding is consistent with transactional leadership theories, highlighting the importance of stability, operational efficiency, and measurable outcomes in sectors requiring precision (Nguyen *et al*., 2022:118). Transactional leadership's role in enforcing clear standards and reward-based accountability suited it to the manufacturing environment, where maintaining high-quality standards is crucial to competitiveness and sustainability (Berkovich & Eyal, 2021:131).

Secondly, the study highlighted that specific leadership behaviours, such as structured performance feedback, clear communication of goals, and prioritising employee development, were instrumental in establishing and maintaining a strong quality culture. Transactional leadership excelled in setting measurable targets and rewarding outcomes aligned with quality-focused objectives, reinforcing the need for accountability in quality management. This finding aligns with prior research that suggests transactional leadership fosters environments where tasks are clearly defined and quality objectives are consistently met (Jensen *et al*., 2019:5). While contributing to innovation and long-term vision, transformational leadership was less directly influential in the day-to-day operations that ensure consistent quality. However, motivating employees to adopt forward-thinking approaches to continuous improvement was significant in fostering a broader commitment to organisational excellence (Carvalho *et al*., 2023:1599).

Lastly, the study successfully aligned the empirical findings with the theoretical frameworks explored in the literature review. The empirical data strongly supported the critical aspects of transactional and transformational leadership theories, demonstrating how each leadership style uniquely influences quality culture. While servant leadership played a more niche role, it still

proved valuable in promoting employee engagement and well-being, essential to fostering a supportive environment conducive to maintaining quality standards (Khan *et al.,*2022:1038; Nauman *et al*., 2022:18). Servant leadership's emphasis on empathy and empowerment contributed to a culture where employees felt valued, indirectly supporting the organisation's quality objectives by enhancing morale and collaboration (Hartnell *et al*., 2023:534).

5.4 Answering the research question

5.4.1 Primary research question

The primary research question asked: *What is the relationship between different leadership styles and quality culture in South African manufacturing, and how do these styles impact the development and maintenance of a positive quality culture within manufacturing companies?* The study's findings provide a clear and comprehensive answer to this question by demonstrating that all three leadership styles, transformational, transactional, and servant, positively influenced quality culture, though to varying extents and through distinct mechanisms.

Transactional leadership emerged as the most influential in shaping a quality culture, which aligns with leadership theories that emphasise structure and rewards for task completion (Jensen *et al*., 2019:5). Transactional leadership's focus on clear performance targets, structured feedback, and rewards closely linked to quality outcomes resonated strongly within the South African manufacturing sector. This highly systematic leadership style effectively maintained operational consistency, ensuring employees adhered to established quality standards. In manufacturing, where consistency and process adherence are critical to competitiveness, transactional leadership's emphasis on control and accountability was crucial for reinforcing a solid quality culture (Nguyen *et al*., 2022:118).

While significant in fostering quality culture, transformational leadership did so primarily by encouraging continuous improvement and innovation. This leadership style inspired employees to exceed expectations and promoted a long-term commitment to quality by fostering a forward-thinking mindset (Bass & Avolio, 1994). Transformational leaders' ability to motivate employees toward innovation and to align individual goals with organisational quality objectives contributed to fostering a proactive quality culture. However, the study found that transformational leadership had a less immediate impact on day-to-day quality operations than transactional leadership, reflecting its more indirect influence through employee engagement and future-oriented strategies (Hartnell *et al*., 2016).

Servant leadership also demonstrated a moderate, yet significant, influence on quality culture, particularly in enhancing employee engagement and well-being. Servant leaders create an

environment where employees feel valued, leading to increased participation in quality initiatives and fostering a culture of collaboration (Mavis Agyemang *et al*., 2019:2). However, in contrast, servant leadership's impact on employee morale and engagement was evident; the direct correlation between this style and measurable quality outcomes was less pronounced than transactional and transformational leadership. This finding suggests that servant leadership is valuable but more supportive in reinforcing quality culture by creating the conditions for employee involvement and well-being, indirectly supporting quality initiatives (Hartnell *et al*., 2023:534).

5.5 Correlation between empirical findings and the literature review

5.5.1 Transformational leadership and quality culture

The empirical findings on transformational leadership support existing literature, which positions this leadership style as a key enabler of innovation, continuous improvement, and employee motivation. Transformational leadership positively correlated with several aspects of quality culture, notably fostering continuous improvement (QC2) and promoting collaboration across departments (QC5). This is consistent with the works of Bass (Bendermacher *et al*., 2019:645), who argues that transformational leaders inspire their teams to exceed expectations and drive long-term cultural change within organisations.

However, while the study confirmed the role of transformational leadership in promoting innovation and process improvements, its overall impact on quality culture was less pronounced than transactional leadership. This finding aligns with literature suggesting that transformational leadership is effective within contexts requiring creativity and change. However, it may be less suited to highly structured environments such as manufacturing, where operational consistency and adherence to standards are critical (Amelda & Marissa, 2020:2).

In South African manufacturing, transformational leadership's influence was primarily indirect, driving long-term cultural shifts rather than immediate operational improvements. Transformational leaders were more effective in creating an environment conducive to continuous improvement and fostering a shared vision for quality. Still, they did not exert the same direct control over day-to-day quality metrics as transactional leaders. This aligns with the argument made by Pradhan and Jena (2019:32), who posit that transformational leadership is most effective in environments that require a future-oriented mindset and long-term strategic goals rather than in industries where short-term operational control is crucial.

5.5.2 Transactional leadership and quality culture

The study's findings on transactional leadership strongly align with existing literature, highlighting this leadership style's effectiveness in environments that demand clear performance expectations, structured feedback, and accountability linked to specific outcomes (Tortorella *et al*., 2021:1283). The empirical data revealed that transactional leadership had the most significant and consistent impact on quality culture across all variables. This is particularly evident in its strong correlation with operational efficiency, maintaining high-quality standards, and reinforcing accountability within the organisation.

Transactional leadership was highly influential in fostering a culture of continuous process improvement (QC2) and leadership's role in embedding quality culture throughout the organisation (QC6). These findings support the work of Bass and Avolio, who noted that transactional leadership thrives in structured environments where rules and expectations are clearly defined and operational consistency is paramount (Alrowwad *et al*., 2022:2). In South African manufacturing, this leadership style played a critical role in ensuring that quality standards were consistently met, thereby contributing to the long-term sustainability of quality practices.

The study also corroborates Jensen *et al*.'s (2019:5) assertion that transactional leadership is critical for sustaining operational performance and consistency in sectors such as manufacturing, where measurable outcomes and adherence to established processes are essential. By linking rewards to specific quality outcomes, transactional leaders reinforced employee accountability, which, in turn, enhanced overall performance and alignment with quality goals. This leadership style's focus on immediate, tangible results suited it to environments where maintaining operational efficiency is crucial to success.

5.5.3 Servant leadership and quality culture

The study's findings on servant leadership, while more moderate than transactional and transformational leadership, align with broader theories on the role of leadership in fostering a supportive organisational culture. Servant leadership was shown to have a significant, though less direct, influence on quality culture, particularly in promoting employee engagement and well-being. This leadership style was most effective in creating a work environment where employees felt valued, which enhanced their participation in quality initiatives and fostered a collaborative atmosphere within the organisation. The empirical data highlighted that servant leadership's contribution to quality culture lies primarily in its ability to promote trust, empathy, and empowerment. This supports findings by Greenleaf, who emphasised the importance of leadership that prioritises employees' needs (Martinez & Leija, 2023:147). Within the context of

quality culture, servant leadership helped build a foundation of engagement and motivation, indirectly supporting the organisation's quality goals by improving employee morale and encouraging collaboration.

While the direct impact of servant leadership on measurable quality outcomes was less pronounced than transactional leadership, its role in fostering a supportive and engaged workforce was crucial for the long-term sustainability of a quality culture. This is consistent with Hartnell *et al*. (2023:534), who found that servant leadership is vital to employee well-being, indirectly influencing quality initiatives' success. By focusing on the holistic development of employees and promoting a work environment built on trust and respect, servant leadership has contributed to a culture that values quality not just as an operational goal but as an intrinsic part of the organisation's identity.

In line with broader theories on leadership and quality management, the study also reflects Deming's emphasis on the critical role of leadership in driving continuous improvement (Yang *et al.*, 2021:1696). However, in the case of servant leadership, this was achieved by fostering a supportive, rather than directive, culture. Similarly, Juran's model, which highlights the importance of leadership in establishing a quality-focused culture, is supported by the finding that servant leadership, while not as dominant as transactional leadership, still plays a meaningful role in developing a sustainable quality culture by ensuring that employees feel engaged and valued (Wu, 2015:799).

5.5.4 Divergences from the literature

While most of the study's findings align with established leadership theories, certain divergences were identified, particularly regarding the relative impact of transactional and transformational leadership on quality culture. One of the most significant divergences emerged in the more pronounced influence of transactional leadership on quality culture than some prior research may have suggested. Traditional leadership literature often highlights transformational leadership as a critical driver of innovation and organisational change (Ntseke *et al*., 2022:4). However, the empirical data from this study indicated that transactional leadership, with its emphasis on clear performance expectations, structured feedback, and rewards tied to specific quality outcomes, had a far more dominant and measurable impact on quality culture within the structured environment of South African manufacturing companies.

In contrast to the standard view that transformational leadership fosters continuous improvement and is more effective in driving cultural change, the findings suggest that transactional leadership is more suited to achieving quality outcomes in operationally focused sectors such as

manufacturing. The structured nature of transactional leadership, which prioritises stability, control, and accountability, resonated more deeply with the manufacturing sector's needs, where adherence to established processes and maintaining consistency are paramount (Nguyen *et al*., 2022:118). This finding contrasts with the general perception in the literature that transformational leadership is the primary driver of change and innovation across industries (Ntseke *et al*., 2022:4).

The study also challenges the assumption that transformational leadership is universally superior in fostering long-term improvements. While transformational leadership undoubtedly contributed to promoting innovation and a forward-thinking approach, the data revealed that its impact was less immediate and less measurable regarding direct quality outcomes than transactional leadership. This divergence is particularly evident in South African manufacturing, where operational efficiency and adherence to quality standards are prioritised over the broader, less structured goals associated with transformational leadership (Abbas & Ali, 2023:127).

These findings highlight the importance of contextualising leadership theories within specific industries and environments. In highly structured, process-driven sectors such as manufacturing, transactional leadership is more effective in driving quality outcomes, suggesting that leadership strategies must be tailored to the industry's operational demands rather than relying solely on generalised leadership models.

5.6 Contribution of the study

5.6.1 Theoretical contributions

This study makes several notable contributions to understanding leadership and quality culture, particularly within the South African manufacturing sector. It extends leadership theory by providing empirical evidence of how transactional, transformational, and servant leadership styles foster a quality culture in a structured, operationally focused environment. The findings demonstrate that while transformational and servant leadership have been widely studied in innovation and employee development, transactional leadership is particularly effective in environments where consistency, performance monitoring, and adherence to quality standards are paramount. This adds to the existing body of knowledge by highlighting the importance of transactional leadership in sectors such as manufacturing, where operational structure and performance-linked rewards are key drivers of quality outcomes (Berkovich & Eyal, 2021:131; Jensen *et al*., 2019:5).

The study also advances the literature on quality culture by demonstrating clear, empirical links between leadership styles and critical elements of quality culture, such as continuous improvement, cross-department collaboration, and employee engagement. By offering concrete

evidence of how leadership influences these factors, the research enhances our understanding of how quality culture can be systematically developed and sustained through specific leadership behaviours. These behaviours include providing structured feedback, establishing performance metrics, and supporting employee development, reinforcing the role of leadership in shaping the organisational environment to foster continuous quality improvements (Lizarelli *et al*., 2021:984).

Additionally, the study provides important insights into the unique dynamics of leadership within the South African manufacturing sector. With its structured and results-oriented approach, transactional leadership is particularly suited to this context, where managing operational efficiency and maintaining high-quality standards are critical challenges. The research highlights how economic pressures, workforce dynamics, and industry-specific factors influence leadership effectiveness in South Africa. By doing so, the study contributes to the broader literature on leadership in emerging markets, offering a more nuanced understanding of how leadership styles must adapt to the regional and industrial context to be effective (Nguyen *et al*., 2022:118).

5.6.2 Managerial contributions

The study provides valuable insights for managers and leaders within the manufacturing sector, particularly those aiming to strengthen their organisation's quality culture through effective leadership practices. One of the study's most critical contributions is identifying transactional leadership as an essential operational quality and consistency driver. Managers can leverage these insights to design leadership development programmes that emphasise setting clear performance expectations, providing structured feedback, and linking rewards directly to quality outcomes. This structured leadership approach enables managers to enhance performance, foster accountability, and ensure employees remain aligned with the organisation's quality objectives. Such practices are especially relevant in sectors such as manufacturing and construction, where consistency and adherence to quality standards are essential for maintaining operational excellence (Khalfan, 2022:1826).

The study also underscores the importance of leadership support for continuous improvement initiatives, a precious finding for manufacturing managers. Leaders who adopt approaches that encourage ongoing process and product enhancements are better positioned to ensure their companies remain competitive and adaptive to changing market demands. By fostering an environment where continuous improvement is encouraged and rewarded, managers can drive innovation and operational efficiency, ensuring that their organisations stay ahead of industry trends (Tortorella *et al*., 2021:1282). The findings suggest that leadership styles promoting such

initiatives, especially those grounded in transformational leadership, can cultivate a more dynamic quality culture, positioning companies for long-term success.

Furthermore, the study highlights the role of servant leadership in promoting employee engagement and development. Managers who embrace servant leadership principles, prioritising their employees' well-being, growth, and development, can foster a more engaged and motivated workforce. By focusing on their teams' personal and professional development, servant leaders can enhance employees' commitment to the organisation's quality initiatives, leading to higher participation in quality improvement efforts and improved organisational performance. This approach is particularly beneficial in creating a supportive culture where employees feel valued and are more likely to contribute actively to the organisation's long-term quality objectives (Nauman *et al*., 2022:19).

5.6.3 Practical contributions

From a practical standpoint, this study offers actionable recommendations for manufacturing companies aiming to enhance their leadership practices and strengthen their quality culture. The findings demonstrate that a balanced leadership approach, integrating transformational, transactional, and servant leadership elements, is essential for cultivating a robust and sustainable quality culture. While transactional leadership should be prioritised to ensure operational consistency and efficiency, transformational leadership can drive innovation and continuous improvement initiatives. Additionally, servant leadership should be leveraged to enhance employee engagement, well-being, and collaboration. Manufacturing companies that implement a leadership framework combining these three styles will likely experience the most significant and sustainable improvements in quality culture (Molek *et al*., 2023:228).

The study's findings suggest that leadership-specific initiatives, such as regular feedback sessions, goal-setting aligned with quality performance, and reward systems linked to quality outcomes, are practical strategies for enhancing quality culture. Transactional leadership is well-suited for implementing these strategies by ensuring that employees consistently meet the organisation's quality objectives and standards. Regular feedback and clear expectations foster a culture of accountability and continuous performance improvement, both critical for maintaining high-quality standards in manufacturing environments (Khalfan, 2022:1826)

Moreover, the study highlights the importance of cross-departmental collaboration in fostering a unified and pervasive quality culture. Leaders in manufacturing companies should promote collaboration by encouraging teams to work together on quality improvement initiatives and share best practices across departments. Structured collaboration frameworks, such as cross-functional

quality improvement teams, can be implemented and supported by transactional and transformational leadership styles. Transactional leaders can ensure that teams remain focused on measurable quality outcomes. In contrast, transformational leaders can inspire creativity and innovation in quality practices, helping the organisation adapt to evolving industry standards and challenges (Lizarelli *et al*., 2021:981).

5.7 Recommendations

5.7.1 Develop a balanced leadership approach

Manufacturing companies should adopt a balanced leadership approach that combines the strengths of transactional, transformational, and servant leadership to create a comprehensive strategy for cultivating and sustaining a quality culture. Each leadership style plays a unique and complementary role in fostering critical elements of quality culture, and integrating them can lead to more effective outcomes.

Transactional leadership should be prioritised to drive operational consistency, establish clear performance expectations, and link rewards to quality outcomes. This structured approach ensures that employees are accountable for meeting quality standards and operational goals. Transactional leadership is particularly well-suited for environments such as manufacturing, where adherence to processes and consistency in output are critical to success (Maisiri *et al*., 2023:232). Transactional leaders can create a stable foundation for maintaining high-quality standards across the organisation by clearly defining tasks and providing timely feedback.

Transformational leadership, meanwhile, should be leveraged to inspire innovation and encourage employees to think beyond their immediate responsibilities. This leadership style is particularly effective in driving continuous improvement initiatives, as it motivates employees to pursue long-term, strategic quality goals and fosters a commitment to innovation and excellence (Muzondiwa *et al*., 2022:2). By creating a vision for the future of quality in the organisation, transformational leaders help employees understand how their contributions align with the company's broader goals and inspire a culture of improvement beyond day-to-day operations.

Servant leadership can be effectively utilised to support employee engagement, development, and collaboration. By prioritising employee well-being and fostering a supportive environment, servant leaders create a culture where employees feel valued and motivated to contribute to quality improvements. This leadership style helps to cultivate a climate of trust and open communication, which is critical for empowering employees to actively participate in quality initiatives and take ownership of the company's quality culture (Kumar *et al*., 2020:1009). Servant

leadership encourages collaboration, which fosters more inclusive and sustainable quality practices as employees feel more invested in the organisation's success.

5.7.2 Invest in leadership development programs

Manufacturing companies should prioritise investment in leadership development programmes that train managers in transactional, transformational, and servant leadership. These programmes equip leaders with the necessary skills to cultivate and sustain a strong quality culture. A well-rounded leadership training approach will ensure that leaders can effectively promote operational excellence, innovation, and employee engagement within the organisation. Leadership development programmes should focus on effectively communicating performance expectations, quality goals, and feedback mechanisms. This is especially important for fostering transactional and transformational leadership behaviours, ensuring employees understand their roles and responsibilities in achieving quality outcomes. Managers should be trained to implement structured feedback systems and reward mechanisms directly linked to quality performance. This reinforces transactional leadership's emphasis on accountability and operational focus, ensuring that employees consistently align with the organisation's quality standards and objectives (Kumar *et al*., 2020:1010).

Additionally, these programmes should encourage transformational leadership behaviours, such as fostering innovation, promoting creative problem-solving, and driving continuous improvement. By empowering managers to lead with a future-oriented mindset, companies can stay competitive by continuously enhancing product and process quality (Bello-Pintado *et al*., 2020:829). Transformational leadership training should focus on helping leaders inspire employees to exceed expectations, thereby fostering a culture of innovation and long-term commitment to quality improvement. Lastly, servant leadership training should concentrate on developing managers' abilities to support employee growth, well-being, and professional development. Managers can create a more engaged and committed workforce by fostering a leadership approach that values employee engagement and empowerment. Servant leaders who prioritise employee well-being are better able to cultivate a work environment where employees feel motivated to participate in quality initiatives actively, ultimately leading to more robust organisational performance and a more resilient quality culture (Hildesheim & Sonntag, 2020:895).

5.7.3 Strengthen employee engagement and participation

Increasing employee engagement and participation in quality initiatives is critical for cultivating a sustainable and lasting quality culture within manufacturing companies. Leaders should create

an environment where employees feel empowered to take ownership of quality processes and actively contribute to continuous improvement efforts. Leaders should actively seek employee feedback and suggestions for improving quality to foster engagement. Employees who feel their voices are heard and valued are more likely to take an active role in the organisation's quality initiatives. Encouraging a two-way communication process between leadership and employees improves the quality of ideas generated and reinforces employees' sense of ownership over quality outcomes (Martinez & Leija, 2023:147). By integrating servant leadership principles, managers can create a supportive atmosphere where employees feel valued and motivated to contribute.

Companies should also consider establishing quality circles or cross-functional teams where employees from various departments can collaborate on quality improvement projects. These teams can drive innovation by leveraging diverse perspectives and fostering a sense of shared responsibility for quality outcomes. Encouraging employees to lead these quality initiatives helps to embed a culture of continuous improvement across the organisation and strengthens their commitment to quality processes (Kumar *et al*., 2020:1008). In addition, implementing recognition programmes that reward employees for their contributions to quality initiatives can significantly increase engagement and motivation. Transactional leadership is crucial in establishing and managing these reward systems, ensuring that employees are held accountable for meeting quality targets and are recognised for their achievements. However, it is also important to tie employee recognition to servant leadership principles by ensuring that recognition is linked to personal and professional development, fostering a more profound commitment to the organisation's long-term goals.

5.7.4 Implement continuous improvement practices

Manufacturing companies should prioritise embedding continuous improvement practices within their quality management strategies, ensuring that these initiatives are supported by leadership at all levels. Effective leadership is essential for fostering a culture of continuous improvement, where quality processes are regularly evaluated and enhanced to meet evolving standards and customer expectations.

Leadership should ensure that quality audits are conducted frequently to assess current performance and identify areas for improvement. These audits provide valuable insights into the success of existing quality practices and highlight opportunities for refinement. By regularly reviewing processes and outcomes, leaders can drive continual operational efficiency and product quality advancements. This aligns with transactional leadership principles, where

structured feedback and performance monitoring are integral to maintaining consistency and accountability in quality outcomes (Ali *et al*., 2015:163)

Training programmes that enhance employees' quality management skills should be a core component of the organisation's continuous improvement strategy. Leaders must ensure employees have the tools and knowledge to implement quality improvements effectively. By providing ongoing education and resources, companies empower their workforce to contribute meaningfully to continuous improvement efforts, aligning with servant leadership principles, which focus on supporting employee growth and development (Hartnell *et al*., 2023:534).

Additionally, leadership should promote the adoption of systematic frameworks such as lean management or Six Sigma to address quality challenges. These tools offer structured methodologies for identifying and resolving quality issues, fostering a data-driven approach to continuous improvement. The integration of these frameworks can be reinforced through transformational leadership, which encourages innovation and a forward-thinking mindset, motivating employees to seek new solutions and strive for excellence in quality management (De Mast *et al*., 2022:5). Transformational leaders inspire teams to go beyond routine tasks and embrace a culture of innovation, which is essential for sustaining long-term quality improvements.

5.7.5 Foster cross-departmental collaboration

Leadership should actively promote cross-departmental collaboration to strengthen the organisation's quality culture. The study's empirical findings emphasised the significant role of cooperation in creating a quality-oriented environment. By encouraging departments to work together on quality improvement projects, leaders can ensure that diverse perspectives and expertise are incorporated into decision-making processes. This holistic approach enables the organisation to implement quality initiatives more effectively across all functional areas. Leaders should assemble cross-functional team members from different departments to address quality challenges. These teams will bring varied insights into identifying inefficiencies and developing innovative solutions, fostering a more inclusive and comprehensive approach to quality management. By breaking down silos, leaders enable a collaborative environment where all employees contribute to the company's quality goals, regardless of their department or role (Lizarelli *et al*., 2021:985).

Open communication between departments is essential for sharing knowledge, best practices, and lessons learned from past quality initiatives. Leaders should facilitate this communication by creating platforms for regular inter-departmental meetings or collaborative workshops. This exchange of information enhances problem-solving and encourages the spread of successful

quality strategies across the entire organisation. Servant leadership can play a crucial role here, as it prioritises supporting employees and creating a communicative, trusting environment where team members feel comfortable contributing their ideas and insights (Bello-Pintado *et al*., 2020:833). Additionally, leaders should establish shared metrics and performance goals across departments to ensure all teams work towards common quality objectives. Aligning performance goals promotes a cohesive approach to quality management, where departments work in synergy rather than isolation. Leaders can leverage transactional leadership to set clear expectations and track progress toward these shared objectives, ensuring that all teams remain accountable for contributing to the organisation's overall quality standards (Ali *et al*., 2015:163)

5.8 Limitations of the study

5.8.1 Sample size and representativeness

One of the primary limitations of this study is the sample size. Although sufficient for meaningful statistical analysis, a larger sample could have provided a more comprehensive view of leadership practices across a broader spectrum of manufacturing companies. The relatively small sample size may limit the generalisability of the findings to the wider South African manufacturing sector, particularly given the diversity of organisational structures, industries, and leadership dynamics within the sector. Additionally, the study was conducted within a specific geographic and industrial context. While focusing on South African manufacturing companies offers valuable insights into this context, it may not fully capture the leadership and quality culture dynamics in other regions or sectors. Future research with a more extensive and diverse sample would provide a more representative understanding of how leadership influences quality culture in various environments.

5.8.2 Cross-sectional study design

The study utilised a cross-sectional research design, capturing data at a single point in time. While this approach provides a snapshot of the relationship between leadership styles and quality culture, it does not allow observing how these relationships evolve. Leadership's impact on quality culture may change as companies grow, adapt to new challenges, or undergo leadership transitions. A longitudinal study would offer deeper insights into the sustained effects of leadership on quality culture and provide a more dynamic view of these relationships.

5.8.3 Focus on three leadership styles

The study was limited to examining the impact of transformational, transactional, and servant leadership styles. While these leadership styles were chosen based on their relevance to the research questions and their established links to organisational culture, other leadership styles, such as charismatic, authentic, or laissez-faire leadership, were omitted. These styles may also play a role in influencing quality culture, particularly within different organisational contexts. Future research could explore a broader range of leadership styles to provide a more holistic view of how leadership influences quality outcomes.

5.8.4 Self-reported data and potential bias

The study relied on self-reported data collected through structured surveys, which introduces the potential for response bias. Participants may have provided socially desirable responses or misinterpreted specific questions, leading to inaccuracies in the data. Although efforts were made to mitigate bias through anonymity and straightforward survey design, the limitations inherent in self-reported data should be considered when interpreting the findings. The study did not include observational data or external performance metrics, which could have further validated the self-reported responses. Future studies could incorporate multiple data-collection methods, such as interviews, focus groups, or organisational performance metrics, to cross-validate findings and reduce potential bias.

5.8.5 Limited exploration of organisational context

While the study explored leadership styles and their influence on quality culture, it did not profoundly investigate other contextual factors affecting the relationship between leadership and quality outcomes. For example, organisational factors such as company size, management structure, and economic pressures were not explored in depth. These factors could significantly impact how leadership is practised and how a quality culture is developed within a firm. Future research could include a more nuanced exploration of these contextual variables to provide a more comprehensive interpretation of the dynamics at play.

5.8.6 Cultural and socio-economic factors

The study was conducted within the South African manufacturing sector, which presents unique cultural and socio-economic dynamics. While the study provides valuable insights into leadership practices within this context, the findings may not directly apply to other cultural or economic

settings. South Africa's unique economic conditions, labour market, and regulatory environment may shape leadership styles and organisational practices differently from other regions. Future research could explore how these cultural and socio-economic factors influence leadership effectiveness and quality culture across different contexts.

5.9 Suggestions for future research

5.9.1 Expand the scope beyond the manufacturing sector

Future research could benefit from expanding the scope of the study to include other sectors beyond manufacturing, such as services, healthcare, and technology. These industries often have different operational demands and leadership needs, which may influence how leadership styles impact quality culture. By exploring leadership in various sectors, researchers can gain a broader understanding of how leadership influences quality outcomes and whether the findings of this study can be generalised to other organisational settings.

5.9.2 Increase sample size and diversity

To improve the generalisability of future studies, researchers should consider increasing the sample size and incorporating a more diverse range of companies, both in terms of size and geographic location. A more extensive and varied sample would provide a more comprehensive view of how leadership styles affect quality culture across different companies. Additionally, including participants from various regions or countries could offer insights into how cultural differences shape leadership practices and quality management.

5.9.3 Explore other leadership styles

This study focused on transformational, transactional, and servant leadership styles. Future research could explore the influence of other leadership styles, such as charismatic, authentic, or participative leadership, on quality culture. These styles may offer insight into how leaders can foster a quality-oriented culture in companies with different structural or operational needs. Examining a broader range of leadership styles would provide a more holistic understanding of the impact of leadership on quality outcomes, particularly in diverse organisational settings.

5.9.4 Conduct longitudinal studies

Given the cross-sectional nature of this study, a key area for future research is to conduct longitudinal studies that track the impact of leadership styles on quality culture over time. This approach would provide deeper insights into how leadership behaviours and organisational quality practices evolve, particularly as companies face new challenges, such as changes in leadership, economic conditions, or competitive pressures. Longitudinal research would allow for a more dynamic understanding of the long-term effects of leadership on sustaining quality culture.

5.9.5 Investigate the role of organisational context

Future research should delve deeper into the role of organisational contexts, such as firm size, management structure, and resource availability, in influencing the relationship between leadership styles and quality culture. By exploring how these contextual factors affect leadership effectiveness, researchers can better understand how leadership practices must be adapted to different organisational environments. This would provide a more tailored approach to leadership development, ensuring that leadership strategies are designed to fit each organisation's unique needs.

5.9.6 Explore cultural and socio-economic factors

Given South Africa's unique cultural and socio-economic context, future research could explore how cultural norms, economic conditions, and labour market dynamics influence the relationship between leadership styles and quality culture. Cross-cultural comparisons with companies in other countries could provide valuable insights into how different cultural and economic environments shape leadership effectiveness. This would allow for a more nuanced understanding of leadership practices in various regions and help companies tailor their leadership development programmes to specific socio-cultural contexts.

5.9.7 Assess the role of technology and digital transformation

As industries worldwide increasingly rely on technology and digital transformation, future research could examine how leadership styles adapt to these changes and how digital tools affect quality culture. Investigating how leaders navigate the integration of new technologies, automation, and data-driven decision-making within quality management systems would provide insights into the evolving role of leadership in a digital age. Understanding the intersection of leadership and

technology is crucial for companies seeking to remain competitive in a rapidly changing global market.

5.9.8 Explore the impact of middle and lower-level leadership

While this study focused primarily on senior leadership, future research could explore the impact of middle- and lower-level leadership on fostering a quality culture. These leaders often have more direct contact with employees and may be crucial in translating senior leadership's vision into actionable quality practices. Examining how leadership at different levels of the organisation influences quality culture would provide a more comprehensive view of leadership's impact across the organisational hierarchy.

5.10 Conclusion

This study explored the relationship between transformational, transactional, and servant leadership styles and the development of a quality culture within the South African manufacturing sector. The empirical findings revealed that all three leadership styles positively influence quality culture, although transactional leadership emerged as the most significant driver. Transactional leadership was particularly effective in promoting operational efficiency, accountability, and adherence to quality standards, making it crucial for environments requiring structure and consistency. Transformational leadership contributed meaningfully by fostering innovation and driving continuous improvement initiatives, inspiring employees to adopt a forward-thinking approach to quality. Meanwhile, servant leadership was essential in enhancing employee engagement and collaboration, cultivating a supportive, employee-centric work culture that encourages participation in quality initiatives.

The study demonstrated that leadership is pivotal in cultivating and sustaining quality culture within manufacturing companies. Transactional leadership proved especially effective in structured environments where clear performance expectations, structured feedback, and reward systems are necessary to maintain high-quality outcomes. In contrast, transformational leadership helped inspire long-term commitment to innovation and improvement, and servant leadership supported a positive work environment, encouraging collaboration and employee engagement.

The research successfully achieved its primary and secondary objectives, confirming that leadership styles directly impact quality culture within the manufacturing sector. Furthermore, the study's findings align closely with established leadership and quality management theories, offering valuable academic and practical contributions to leadership development and quality

management. By highlighting how different leadership behaviours influence quality culture, the study provides actionable insights for leaders seeking to enhance operational excellence, innovation, and employee engagement.

However, the study also identified several limitations. These include the sample size, the focus on only three specific leadership styles, and the cross-sectional research design, which limits insights into how leadership impacts quality culture over time. These limitations present opportunities for future research, which could explore a broader range of leadership styles, incorporate more extensive and diverse samples, and examine the longitudinal effects of leadership on quality culture in manufacturing environments. Future studies may also investigate how leadership styles evolve in response to shifting operational demands and market conditions, offering more profound insights into sustaining quality culture over the long term.

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ANNEXURE A LANGUAGE EDITOR'S LETTER

To whom it may concern

Cecile van Zyl
Language editing and translation
Cell: 072 389 3450
Email: Cecile.vanZyl@nwu.ac.za

18 October 2024

Dear Mr / Ms

Re: Language editing of mini-dissertation (Exploring the relationship between leadership styles and quality culture in selected South African manufacturing companies)

I hereby declare that I language edited the above-mentioned mini-dissertation by PAL Wessels (student number: 48821918).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl

Language practitioner

BA (PU for CHE); BA honours (NWU); MA (NWU)
SATI number: 1002391

ANNEXURE B ETHICAL APPROVAL

Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Fax: 018 299-4910
Web: http://www.nwu.ac.za

Senate Committee for Research Ethics
Tel: 018 299-484
Feziwe.Mseleni@nwu.ac.za

03 June 2024

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Economic and Management Sciences Research Ethics Committee (EMS-REC)** on, 03/06/2024 the Economic and Management Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-REC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Exploring the relationship between leadership styles and quality culture in South African manufacturing

Study Leader/Supervisor (Principal Investigator)/Researcher): Prof Christoff Botha

Student: P. Wessels (48821918)

N	W	U	-	0	0	7	0	2	-	2	4	-	A	4
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type:
Commencement date: 03/06/2024 **Risk:** Minimal
Expiry date: 03/06/2025
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

•

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the EMS-REC:*
  - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the EMS-REC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started.*

n the interest of ethical responsibility, the NWU-SCRE and EMS-REC reserves the right to:

ANNEXURE C TURNITIN DECLARATION

NWU®

Faculty of Economic and Management Sciences

DECLARATION WITH REGARDS TO SIMILARITY REPORT

Turnitin (TII) is the plagiarism- prevention service of choice for the North-West University. A thesis/dissertation/mini-dissertation/article is submitted to the TII website, to be checked for similarities in the document by comparing submitted papers to several databases/repositories on the World Wide Web. It is important to note that TII does NOT identify plagiarism – only similarities. The aim is to draw students' attention to these similarities so that they improve their academic writing style and reporting of sources before submission for examination.

The undersigned declares that the thesis/dissertation/mini-dissertation/article with the title mentioned below, was submitted, assessed and that the issues (if any) have been addressed, and that a satisfactory report has been obtained.

Exploring the relationship between leadership styles and quality culture in selected South African manufacturing companies

Title of dissertation/mini-dissertation\thesis

PAL Wessels — **Student (Initials and surname)**

CJ Botha — **Supervisor/Promoter (Initials and surname)**

48821918 Master of Business Administration (MBA)

Student number and degree

48821918:PAL_Wessels_48821918_Mini_Dissertation.docx

ORIGINALITY REPORT

2%	3%	1%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	repository.nwu.ac.za Internet Source	1%
2	epublications.vu.lt Internet Source	1%

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	On		

ANNEXURE D DATA COLLECTION AND LETTER OF CONSENT

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

16 October 2024

DEAR PARTICIPANT

INFORMED CONSENT TO COMPLETE SURVEY

You are invited to participate in a research study conducted as part of a Master of Business Administration (MBA) degree at NWU Business School. This letter contains information about the research project. Please read it carefully before deciding whether or not to participate and feel free to ask any questions to clarify aspects you may not fully understand. Your participation is completely voluntary, and you may choose not to participate without any negative consequences. Furthermore, you have the right to withdraw from the study at any time, even after agreeing to participate.

This study will seek approval from the NWU Economic and Management Sciences Research Ethics Committee (EMS-REC) and will be conducted according to the ethical guidelines and principles of North-West University, other international ethical guidelines applicable to this study, and in compliance with the Protection of Personal Information Act (POPIA). This act ensures that personal information is processed responsibly, without infringing on your privacy, and without exposing you or your organisation.

Title of the project: Exploring the relationship between leadership styles and quality culture in South African manufacturing.
Institution: NWU Business School
Ethics Reference Number: NWU-00702-24-A4

Names and contact details of project staff

	Supervisor	Researcher
Title, name & surname	Prof Christoff Botha	Mr Petrus Wessels
Full Names	Christoff Botha	Petrus Arnoldus Lifras Wessels
Function in Project	Principle Investigator	Researcher
Telephone	018 299 1672	082 574 2050

What is this research study all about?
This study aims to fill a critical gap in understanding by exploring how different leadership styles influence the development and sustainability of a quality-focused culture within South Africa's manufacturing sector. It seeks to assess the effectiveness of various leadership methods in enhancing the sector's ability to uphold high-quality standards amidst its inherent challenges. By delving into these dynamics, the research intends to enrich the existing body of knowledge that can guide industry leaders in fostering environments that prioritise and maintain quality.

What will be expected of you?

You will be expected to:

- Complete the survey, which should take approximately 10 minutes of your time.
- Respond to the questions openly and honestly.

Please note that your responses are completely anonymous and no personally identifiable data will be collected.

Why do we need your demographical information?

The collection of demographic information in this research is crucial for profiling purposes, to facilitate an analysis of how various demographic groups within the manufacturing sector perceive and are influenced by different leadership styles and quality culture. By gathering details such as age, education level, and job role, this study aims to ensure the robustness and generalizability of its findings across a diverse workforce. This demographic data will not be used to compare responses between groups but will provide essential context to deepen the understanding of the data collected. This approach helps to ensure that the conclusions drawn are relevant and can be appropriately tailored to address the specific needs of different demographic segments within the sector, enhancing the practical applicability of the research outcomes.

DECLARATION

Declaration by participant

By selecting the option below, I agree to take part in the research study titled: Exploring the relationship between leadership styles and quality culture in South African manufacturing.

1. I confirm that I have read the information sheet for the above study. I have had the opportunity to consider the information, ask questions, and have these answered satisfactorily.

2. I understand that as I have completed the study anonymously it will not be possible to remove any information I have provided, as you will not be able to identify me in any way.

3. I understand that individuals from the University may look at anonymous research data collected during the study, to ensure that the study is conducted appropriately.

4. I agree that my anonymous information can be shared with individuals from the project team detailed above.

I agree to take part in the above study

Yes	No
1	2

SURVEY QUESTIONS

Section A: Demographical Information

Please mark the empty box next to the correct option, with an X, or fill in the information needed in the space provided:

1. Year of birth: _____

2. Educational qualifications (Please only indicate your highest qualification with X):

3.1	NQF Level 1- Gr 9		3.5	NQF Level 5- Diploma	
3.2	NQF Level 2- Gr 10		3.6	NQF Level 7- B Degree	
3.3	NQF Level 3- Gr 11		3.7	NQF Level 9- Master's Degree	
3.4	NQF Level 4- Gr 12		3.8	NQF Level 10- Doctor's Degree	

3. Which of the following best describes your employment status?

4.1	Permanent		4.2	Temporary	

4. What is your occupational level?

5.1	Senior Management / Executive		5.4	Assistant Workers	
5.2	Middle Management/ HOD		5.5	General Workers	
5.3	Artisan				

5. How many years have you worked at the company?

_____
_____
_____

6. How many years have you worked in your current position?

_____
_____
_____

7. How many employees work in your organisation?

8.1	51-100		8.3	More than 500	

8.2	101-500		

Section B: Leadership Styles and Quality Culture

The scale consists of 21 items measuring.

Please read each statement below carefully before answering.

By using the 7-point scale below, please indicate your answer with an X over the number you choose:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

Statements	**1=Strongly Disagree to 7=Strongly Agree**						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Transformational Leadership							
1. My manager clearly communicates our organisation's goals.	1	2	3	4	5	6	7
2. My manager clearly communicates our organisation's strategies.	1	2	3	4	5	6	7
3. My manager encourages innovative approaches to improve product quality.	1	2	3	4	5	6	7
4. My manager motivates us to achieve beyond our own expectations.	1	2	3	4	5	6	7
5. My manager leads by example in terms of quality.	1	2	3	4	5	6	7
6. My manager leads by example in terms of work ethic.	1	2	3	4	5	6	7
Transactional Leadership							
7. My manager provides immediate feedback on my work performance.	1	2	3	4	5	6	7
8. Rewards in my organisation are directly linked to meeting quality standards.	1	2	3	4	5	6	7
9. Clear performance targets related to quality are set by my manager.	1	2	3	4	5	6	7

10. My performance appraisal is closely tied to quality objectives.	1	2	3	4	5	6	7
Servant Leadership							
11. My manager prioritises my development and growth within the organisation.	1	2	3	4	5	6	7
12. My manager shows genuine concern for my well-being.	1	2	3	4	5	6	7
13. My manager shows genuine concern for my professional needs.	1	2	3	4	5	6	7
14. My manager actively listens to and acts upon employee suggestions for improving quality.	1	2	3	4	5	6	7
15. My manager serves more as a mentor than a supervisor.	1	2	3	4	5	6	7
Quality Culture							
16. In my organisation, achieving high-quality outcomes is considered more important than meeting deadlines.	1	2	3	4	5	6	7
17. Continuous improvement in processes is a key focus in my organisation.	1	2	3	4	5	6	7
18. Continuous improvement in products is a key focus in my organisation.	1	2	3	4	5	6	7
19. Quality training sessions are regularly conducted in my organisation.	1	2	3	4	5	6	7
20. Employees are encouraged to collaborate across departments to enhance quality.	1	2	3	4	5	6	7
21. Leadership in my organisation plays a critical role in fostering a culture focused on quality.	1	2	3	4	5	6	7

ANNEXURE E PERMISSION LETTER FROM THE COMPANY

MMD Mineral Sizing (Africa) (Pty) Ltd
A Member of the MMD Group of Companies

Postnet Suite 3, Private Bag X10010, Edenvale 1610, South Africa

T: +(27) 11 608 4801
F: +(27) 11 608 4848
E: sizers@mmdafrica.co.za
W: www.mmdsizers.com

28 February 2024

Dear Participant,

I am writing to inform you that MMD Mineral Sizing (Africa) (Pty) Ltd. has granted written consent to Petrus AL Wessels (8612165016084) to use our company information and resources for his MBA Mini Dissertation. The dissertation will focus on exploring the relationship between leadership styles and quality culture in South African manufacturing.

Petrus's student number is 48821918.

We assure you that this study will adhere to the standards and expectations expressed in the POPI and PAIA acts. We believe that the findings of this study will contribute to the body of knowledge and potentially benefit our organisation.

I appreciate your cooperation in this matter.

Sincerely,

Janis Lombard
Managing Director

ANNEXURE F LETTER OF GATEKEEPER APPOINTMENT

MMD Mineral Sizing (Africa) (Pty) Ltd
A Member of the MMD Group of Companies
Postnet Suite 3, Private Bag X10010, Edenvale 1610, South Africa
T: +(27) 11 608 4801 E: sizers@mmdafrica.co.za
F: +(27) 11 608 4848 W: www.mmdsizers.com

28 February 2024

To: NWU Business School

Re: Petrus AL Wessels

This letter serves as a formal declaration of consent from MMD Mineral Sizing (Africa) (Pty) Ltd. for Petrus AL Wessels (8612165016084) to utilise company resources and information in pursuit of academic research. The research is part of the requirements for the Master of Business Administration degree at the North-West University Business School.

At MMD Mineral Sizing (Africa) (Pty) Ltd., we acknowledge this study's significance in manufacturing, quality culture and leadership. To facilitate this research, our IT department will act as a gatekeeper, ensuring Petrus AL Wessels has access to the necessary data while maintaining strict compliance with data privacy and confidentiality norms.

Topic: Exploring the relationship between leadership styles and quality culture in South African manufacturing

Student Number: 48821918

Thank you for your attention to this matter.

Sincerely,

Janis Lombard
Managing Director