

**The Influence of transformational leadership on sustainable innovation
practices in manufacturing.**

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Abstract

In recent years the focus within the business landscape has drastically moved towards sustainability efforts, becoming a necessity for survival and longevity in the corporate space. To be more sustainable and competitive, companies are investing in innovative and creative ideas as the market is becoming increasingly competitive, with uncertainty heightened by globalization, modernisation, environmental focus, and continuous technological enhancement.

This study explores how transformational leadership influences the adoption of sustainable innovation practices in South African manufacturing, addressing gaps in qualitative understanding of how leaders and employees experience and enact these processes. A qualitative approach was used to explore the lived experiences of leaders and employees in the manufacturing sector and how transformational leadership influences sustainable innovation practices. The research aimed to understand the influence transformational leadership has on sustainable innovation practices and contributes to transformational leadership theory by focusing on its role in manufacturing organizations.

The study confirms that transformational leadership encourages sustainable innovation within manufacturing organisations and influences innovation through its core dimensions: intellectual stimulation, vision sharing, individualised consideration, and recognition, creating psychologically safe conditions for innovation and supporting the integration of sustainability into organisational practices.

Keywords: Transformational leadership, Sustainable Innovation, Innovation, Manufacturing Sector.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Philosophy in Corporate Strategy at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Chapter 1: Introduction to research problem

1.1. Business Relevance

In recent years the focus within the business landscape has drastically moved towards sustainability efforts (Ghobakhloo et al., 2021). It has become a necessity for survival and longevity in the corporate space (Cillo et al., 2019). In efforts to be more sustainable and competitive, more companies are investing in innovative and creative ideas to maintain competitiveness as the market is becoming increasingly competitive (Nabi et al., 2022). Market uncertainty is heightened by the ever-changing corporate environment brought about by globalization, modernisation, environmental focus, and continuous enhancement in technology (Aagaard & Nielsen, 2021; Lee & Trimi, 2021).

The adoption of the 2030 Agenda for sustainable development through the United Nations (Whittingham et al., 2022), marked an important commitment to advancing developments strategies that align with sustainability principles globally (Whittingham et al., 2022). The 17 Sustainable Development Goals (SDGs) outlined in Agenda 2030 emphasises the significance of sustainable natural resource management for both social and economic development while balancing economic, social, and environmental aspects worldwide (*Transforming Our World: The 2030 Agenda for Sustainable Development* | *Department of Economic and Social Affairs*, n.d.)

Such global agendas serve as regulating frameworks that guide policy formulation and strategic decision-making for governments and corporations. Government and corporate stakeholders are frequently enforcing policies that force businesses to follow ethical and environmentally friendly innovation practices and product development (Singh et al., 2022). Organisations around the world are putting in more effort and focus on creating sustainable practises within their operations to minimise the adverse effects on the environment and the society (Bag et al., 2020).

According to Lee et al. (2019) in this current changing environment, the success or growth of a company relies on its ability to come up with new solutions and successfully recognise and execute the most effective ones. Thus, indicating that having the ability to create and execute creative concepts & solutions is one of the winning ways to attain competitive advantage and achieve great performance (Cortes & Herrmann, 2020). One way to achieve this is having a successful leadership team, leadership style & sustainable innovative ideas.

Given the crucial role that leadership plays in promoting sustainable innovation, the next sections examine the theoretical perspective.

1.2 Theoretical Relevance

Increased economic growth and development have led to higher resource consumption and manufacturing activities, which are harmful to the environment (Begum et al., 2022). With the growing focus on sustainability practices in the corporate sector, scholars and entrepreneurs are exploring ways to integrate sustainability into organisations (Awan et al., 2020). Organisations that aim to incorporate innovation into their operations should place social responsibility and environmental sustainability on the same level as financial gains (Bag et al., 2020). This has led scholars to emphasize the need for solutions that reduce ecological degradation (Ren et al., 2021). To optimize social responsibility along with financial objectives, organisations are increasingly focusing on environmental challenges and their management (Ren et al., 2021).

Corporate strategy is shaped largely by leaders who encourage innovation and originality because these qualities are crucial for businesses to thrive in a competitive, globalized environment (Odugbesan et al., 2022). However, innovation requires both organisational capabilities and individual efforts, which depend on the individual's ability to participate in innovative practices (Odugbesan et al., 2022). Capable leaders may improve work operations, simplify complex tasks, and share expertise to increase team performance, making leadership style essential in today's innovative landscape (Li et al., 2020).

Transformational leadership provides the theoretical foundation for this study, offering a values-driven, development-oriented approach that aligns organisational and individual goals through vision, empowerment, and recognition. Rooted in the work of Burns (1978) and Bass (1985), the theory is operationalised through four dimensions: idealised influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006; Oke et al., 2008). These dimensions enable leaders to act as role models, articulate compelling visions, stimulate creative thinking, and support individual growth, fostering innovation and organisational transformation.

Transformational leadership promotes collaborative innovation by instilling shared passion and clear objectives (Peng et al., 2021), while recognition, freedom, and personal growth motivate employees to exceed expectations (Mousa et al., 2025). Ali et

al. (2025) show how transformational leadership embeds sustainability into organisational culture, linking innovation directly to long-term environmental objectives.

In manufacturing, transformational leadership is particularly relevant as organisations face pressures to integrate sustainability into innovation practices. It explains how leaders mobilise employees to align social and environmental responsibility with financial performance, creating cultures that support both incremental and radical innovation. By fostering trust, autonomy, and shared vision, transformational leadership helps firms overcome barriers to change and embed sustainability into daily operations.

This study explores how transformational leadership influences the adoption of sustainable innovation practices in South African manufacturing, addressing gaps in qualitative understanding of how leaders and employees experience and enact these processes. Although literature highlights the importance of sustainable innovation, many companies have yet to integrate it into their operations, processes, and strategies. Leadership, particularly transformational leadership as part of change initiatives, remains underexplored. There is a gap in qualitative insights into how leaders encourage and maintain innovation aligned with sustainability goals.

This study addresses this gap by exploring the lived experiences and perceptions of leaders and employees in manufacturing companies pursuing sustainable innovation practices. The notion that leaders transform followers in ways that enhance organizational performance provides a compelling conceptual foundation for both research and practice.

1.3 Research Questions

The research question was derived from research gaps identified in Ali et al. (2025) and Peng et al. (2021). Their studies focused exploring how green transformational leadership influenced innovation in manufacturing thus looking at how leadership influences innovation adoption (Ali et al., 2025). While Peng et al. (2021) looked at how transformational leadership behaviours impact team level sustainable innovations. The research will explore the gaps in current studies and build on calls for further research to examine the lived experiences of transformational leaders integrating sustainable innovation into manufacturing practices.

Main Research Question

What influence does transformational leadership have on manufacturing's adoption of sustainable innovation practices? (Ali et al., 2025; Peng et al., 2021)

Sub-question 1

How do employees perceive the influence of transformational leadership on innovation?

Sub-question 2

How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing? (Ali et al., 2025; Peng et al., 2021)

Sub-question 3

What transformational-leadership practices influence the integration of sustainability and innovation into manufacturing and organisational culture?

Sub-question 4

In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

1.4 Research Aims

The research aims to understand how employees perceive the influence of transformational leadership on sustainable innovation practices in the manufacturing context. More specifically the aim is to explore behaviour influences, learning practices and organisational perspectives that incorporate sustainability into manufacturing innovation. This was achieved by examining how transformational leadership shapes values and behaviours and investigating the practices that promote the integration of innovation and sustainability into manufacturing processes and the cultural of the organisation.

In addition, the aim was to develop a conceptual framework that gives a summary of the key constructs and themes of how transformational leadership influences sustainable innovation practices in manufacturing.

1.5 Research contribution

The research aimed to understand the influence transformational leadership has on sustainable innovation practices. This study contributes to transformational leadership theory by focusing on its role in manufacturing organizations. Transformational leadership encourages sustainable innovation within manufacturing organisations

The study confirms that transformational leadership influences innovation through its core dimensions: intellectual stimulation, vision sharing, individualised consideration, and recognition creating psychologically safe conditions for innovation. It also demonstrates how transformational leadership extends beyond innovation creation to become embedded in organisational culture and long-term leadership practices. These insights advance leadership theory by confirming transformational leadership as a driver of sustainable innovation, aligning employee motivation with organisational culture, and showing that it can overcome barriers when used as an enabler.

1.6 Scope of the study

This author conducted a qualitative study exploring the lived experiences of leaders and employees in the manufacturing sector and how transformational leadership influences sustainable innovation practices. A qualitative, phenomenological design was adopted to capture participants' perceptions, behaviours, and organisational dynamics, providing insight into leadership processes (Creswell & Creswell, 2023; Alhazmi & Kaufmann, 2022). Data was collected through individual interviews with managers, senior managers, and executives directly involved in sustainable innovation initiatives, ensuring perspectives across hierarchical levels. In addition, the study was informed by a rigorous and systematic literature review process, which critically engaged with recent scholarship and integrated applicable theories to establish a strong conceptual foundation for analysis and discussion.

1.7 Overview of the Research Report

The research contains of 7 chapters:

Chapter 1: Introduction to research problem - introduces the research problem from a business and theoretical perspective.

Chapter 2: Literature review - theory and literature review that builds an understanding of the topic and key constructs and the development of a conceptual framework.

Chapter 3: Research questions - sets out the main research questions and four sub-questions created to support the main research question.

Chapter 4: Research methodology - describes the research methodology and design that was applied for this research study.

Chapter 5: Research findings - presents the research findings from the data collected and analysed.

Chapter 6: Discussions - A discussion of the research findings incorporating literature.

Chapter 7: Conclusions - Concluding chapter that presents the research results, research contributions and recommendations for future research.

Chapter 2: Literature review

2.1 Introduction to the Literature Review

The purpose of this chapter is to review academic literature relevant to understanding the impact of transformational leadership on manufacturing's adoption of sustainable innovation practises. In this chapter, a theoretical argument is developed to highlight the gaps in current research and support the research question through engagement with current scholarly debates.

The focus will be on the following objectives, theories, and findings, which is also in line with the research objective: to understand how employees perceive the influence of transformational leadership on innovation. How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing. What transformational leadership practices influence the integration of sustainability and innovation methods into manufacturing organisations culture. In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

The literature review draws from peer reviewed academic journals from the last 5 years and explores the following key concepts: Transformational leadership, innovation, sustainability/sustainable innovation, and manufacturing.

The chapter begins with an overview of leadership and transformational leadership, followed by the definition and theories on transformational leadership as the theoretical foundation for this study in (section 2.2.). The chapter will explore the various links between transformational leadership and innovation, transformational leadership and sustainability, sustainable innovation in manufacturing and lastly review comparative theories (Resource based theories and Dynamic capabilities) which touches on value creation and adaptability within organisations in sections 2.3 – 2.7. The chapter ends with a conceptual framework that summarizes and demonstrates the various relationships between transformational leadership, innovation, and sustainability, followed by a conclusion that highlights key insights and gaps in the current literature, which form the basis for this study.

Figure 1 below shows the structure of this section and how it connects with the research question.

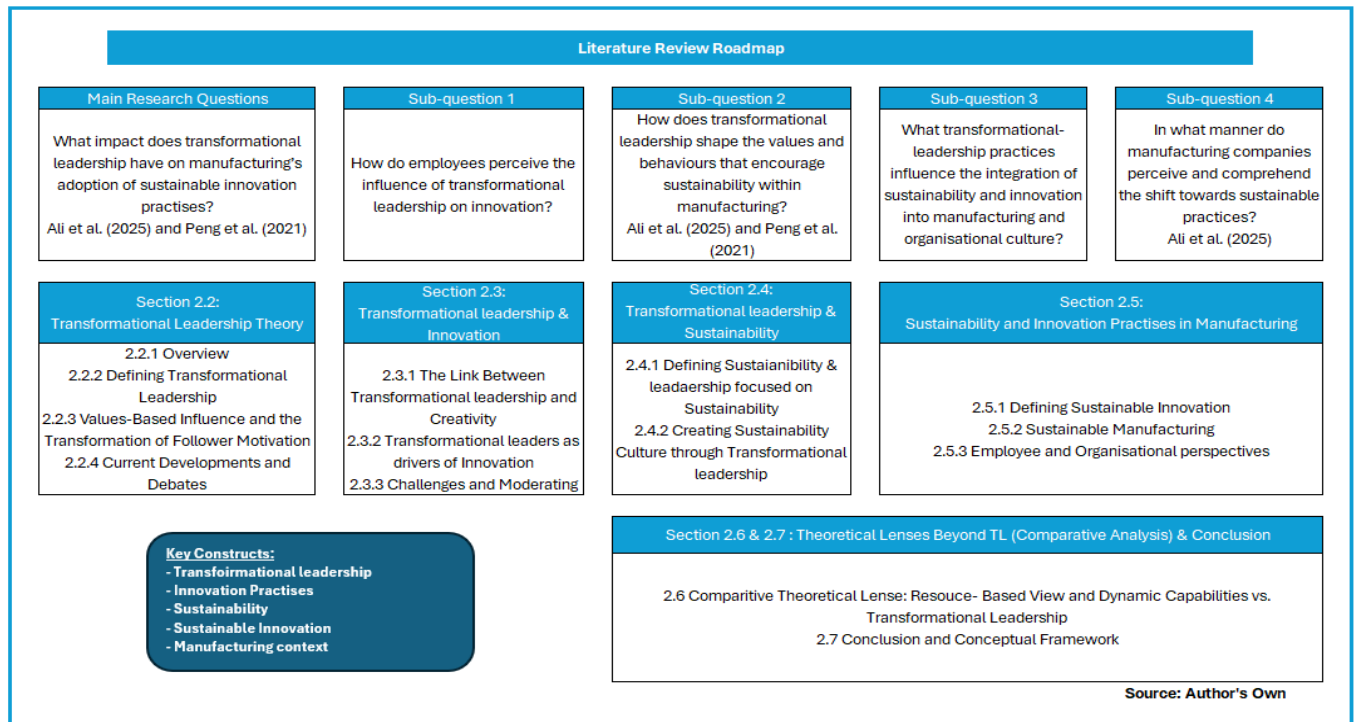


Figure 1: Literature Review Roadmap

2.2 Transformational leadership

2.2.1 Overview

Leadership is an important contributing factor to the success of companies and individuals (Czura et al., 2025). If a leadership style improves employee confidence, it results in a win-win situation for both employees and the organisation. The style of leadership can be defined as the way in which leaders' impact, direct and show those they lead how to succeed (Nanjundeswaraswamy et al., 2025). Burns (1978) divides approach to leadership into two main groups: transactional and transformational. Nanjundeswaraswamy et al. (2025) state that transformational leadership and transactional leadership are the most popular leadership approaches.

For almost two decades transformational leadership has been at the forefront of leadership literature and is widely known (Bass, 1999). Bass (1999) argue that a transformational leaders' aim is to find and create a balance between the employee and the organisations goals. They are attentive to the individual employees needs while simultaneously inspiring their mind (Bass, 1999).

2.2.2 Defining Transformational Leadership

Transformational leadership is one of the most researched leadership styles and is a fundamental component of leadership research (Siangchokyoo et al., 2020). It was initially created by Burns in the 1970's and is one of the most well-known leadership theories used in management studies (Spector, 2016; Van Knippenberg & Sitkin, 2013; Bass, 1999; Bohle et al., 2025). The concept was formulated during Burn's analysis of American politics (Burns, 1978) and later Bass (1985) expanded on it. Burns (1978) differentiates transforming leaders as those who have ideas for a better future and motivate others to go beyond their own personal interest. Whereas transactional leaders' place importance on rewards and conditional benefits.

Bernard Bass and other scholars took this concept and transformed it into a management theory, defining transformative leaders as individuals whose values, vision and inspiration energises employees thus leading to increased effort, dedication, and performance (Bass, 1985; Bass & Avolio, 1995; Bass & Riggio, 2006). As a result, it signifies a change from influence that is based on control to that which is based on empowerment, bringing organisational and individual goals into alignment through dedication and trust.

Building on this foundation, various scholars acknowledge there is a recurring theme that transformational leaders display. Which is changing or influencing the principles, opinions, views and behaviours of those they lead and motivating them in such a way that they are willing to perform beyond what is expected from them (Avolio & Bass, 1995; Bass, 1985; Bass & Riggio, 2006; Bass, 1999; Kehr et al., 2022). Bass & Steidlmeier (1999) argue that transformational leadership is considered a moral process that empowers followers through promoting ethical values through fair conduct.

Leaders are now seen as having a clear vision, playing the role of motivator, and influencer, especially influencing the culture of their followers (Bass and Avolio, 1994; Bednall et al., 2018). Siangchokyoo et al. (2020) further supports this perspective and argues that transformational leadership entails developing not only professional but personal growth of followers through fostering deeper levels of motivation and engagement. It assists their followers to think critically and to act with purpose. Collectively, these authors present transformational leadership as a process that blends developmental goals with ethical impact, establishing it as a driving force behind long-lasting organisational transformation.

Expanding on this conceptual base, Oke et al. (2008, p. 65) explains that transformational leadership consists of four key dimensions - idealized influence (charisma), intellectual stimulation, inspirational motivation, and individualized consideration.

Oke et al., (2008) and other scholars define these dimensions as:

Idealised influence exhibits the degree to which leaders are admired, respected, and trusted by their followers, often serving as role models who inspire confidence and commitment (Oke et al., 2008). Afshari (2021) supports this by explaining that idealised influence is a direct outcome of transformational leadership, where leaders act as role models for their followers. Leaders earn the trust and respect of followers through their behaviours, demonstrating the values and attitudes they expect their followers to embrace.

Inspirational motivation involves a leader's ability to spot opportunities, give guidance, and develop a strong vision for the future (Oke et al., 2008). Mousa et al. (2025) supports this view by emphasising that inspirational motivation encourages followers to adopt responsibility in working toward a shared transformational vision. Salas-Vallina et al. (2020) further supports this by stating that it's the ability of a transformational leader to share a vision which is both appealing and encouraging.

Intellectual stimulation refers to the ability that leaders must change people's pre-conceived perceptions and rather promote analytical, creative, and innovative thinking (Oke et al., 2008). Likewise, Begum et al. (2022) state that it involves assisting employees change and challenge existing norms by fostering creative thinking.

Individualized consideration centres personal growth and needs often seeing leaders providing, counselling, mentorship or coaching to support their needs (Oke et al., 2008). It also demonstrates that leaders care, support and show empathy for employees' growth and development (Mousa et al., 2025).

These dimensions demonstrate how moral intention can transform into leadership actions.

2.2.3 Value-Based Influence and the Transformation of Follower Motivation

For a long time, leadership theory has attempted to explain how leaders encourage extraordinary performance and creativity in teams. Due to its focus on personal growth, moral purpose and creativity, transformational leadership has become one of these theories' most influential perspective. Idealised and inspirational leaders have clear goals, and promote high performance (Bass, 1999).

Building on this research, research has shown that transformational leaders also encourage and support creativity (Boies et al., 2015; Dong et al., 2017). Transformational leadership is regarded as one of the most effective leadership styles in encouraging team creativity (Boies et al., 2015; Dong et al., 2017), and innovative thinking. Salas-Vallina et al. (2020) further highlight that empowerment surfaces when leaders share vision and provide encouragement, linking trust to employee confidence.

Transformational leaders achieve this by displaying intellectual stimulation and by availing themselves to coaching to further develop personal growth and display individualised consideration (Bass, 1999). Avolio and Bass (1995) argue the degree to which leaders demonstrate these four dimensions impacts their transformational influence. A significant amount of empirical research on creativity, innovation and leadership is based on this fundamental concept. Collectively, these studies indicate that transformational leadership is a development-oriented, morally based, and values-driven approach that fosters dedication and creativity. Peng et al. (2021) further supports this perspective by demonstrating how transformational leaders promote collaborative innovation through having mutual enthusiasm and clear objectives that encourages team members sense of purpose.

To elaborate further on what is known on transformational leadership, Podsakoff et al. (1990) and Carless et al. (2000) argue that transformational leaders depict the following leadership behaviours: employee development, vision, innovative thinking, role modelling, supportive leadership and lastly charisma. When considered together, these behavioural aspects imply that transformational leadership functions as an integrated theoretical framework that combines moral values, vision, and innovation to encourage individual development and high performance.

2.2.4 Current Developments and Debates

Current studies demonstrate how transformational leadership has evolved. Transformational leadership is often combined with other forms of leadership and behaviours and is situational and follower dependent (Kehr et al., 2022). For example, followers that are motivated by power and achievement respond better to intellectual stimulation, those that value great relationship and relationship building react better to individualized consideration (Kehr et al., 2022). Indicating that transformational leadership works best when leadership actions are aligned with follower motivations.

Recent studies continue to show that motivation, commitment, and creativity continue to be positive amongst transformational leaders and have a positive impact on individual and organisational performance (Nanjundeswaraswamy et al., 2025). Transformational leadership is still considered essential for promoting personal and organisational development and innovation. Its influence varies depending on the stage of the project, in the initial phase it necessitates creativity and adaptive thinking, while later phases call for perseverance and focus (Chen et al., 2025). A key development within this progression is the emergence of Green/Environmental Transformational Leadership.

Environmental transformational leadership was first introduced by Robertson and Barling in 2017 as a recent concept of transformational leadership derived from the transformational leadership theory. They describe it as form of transformational leadership that focuses on advancing green and pro-environmental efforts (Robertson & Barling, 2017). This foundational work has since been expanded on by scholars such as Mousa et al. (2025) who argue that environmental leadership or green transformational leadership has drawn more attention from scholars in recent years.

In contrast to traditional transformational leadership, green transformational leadership, on the other hand, specifically concentrates on utilizing a common vision and values to inspire and motivate staff members toward group environmental goals (Çop et al. 2021). Such leader promotes a welcoming and inclusive workplace environment that encourages staff members to actively participate in the company's sustainability initiatives (Ali et al., 2025). According to Peng et al. (2021) transformational leader/leadership that focuses on environmental objectives influence team-level sustainability behaviours through psychological and emotional mechanisms such as clear vision and objectives and shared purpose. This shows how transformational

leadership requires agile methods when coming to integrating sustainability into an organisations culture, by using both emotional connection and practical thinking.

This dual focus is further built on and clarified by Kim et al. (2021), who differentiate between how transformational leaders influence followers through team-focused and individual-focused behaviours. Transformational leaders focus on establishing common objectives and shared vision that focuses on the team (team-focused transformational leadership) while also offering tailored support to each member based on their needs (individual-focused transformational leadership) (Kim et al., 2021).

This dual focus demonstrates a leadership approach that supports and encourages followers to achieve company-wide environmental sustainability objectives, ultimately cultivating a culture of sustainable long-term transformation (Janjua et al. 2024). Taken together, these insights suggests that transformational leadership offers a viable theoretical basis for understanding how leaders can embed sustainability into organisational culture and long-term strategic goals, while also underscoring the need for future leadership research to explore how transformational principles can be further leveraged to promote environmental and social sustainability.

Building on this, it's critical to consider the original conception of transformative leadership as single leadership approach that inspired followers through intellectual stimulation, idealised influence, inspirational motivation, and individualised attention. Today, however, scholars view TL as a collection of behaviours that influence followers depending on context, trust, and emotional as well as intellectual pathways. The emphasis has therefore shifted toward understanding how, when, and for whom transformational leadership works. Overall, the evolving understanding of transformational leadership highlights its adaptability and relevance, positioning it as a cornerstone for driving innovation, ethical behaviour, and sustainability in contemporary organisations.

Although transformational leadership is considered one of the most popular leadership theories, it has faced some criticism over the years. According to Van Knippenberg and Sitkin (2013), shortcomings such as unreliable assessment methods, increased confusion between behaviours of leaders and results and lastly theoretical incoherence hamper the transformation leadership research. Similarly, Siangchokyoo et al. (2020) argue that the most neglected aspect of the concept despite a great deal of research being done on this theory is proving the actual shift in followers. Furthermore Stock et al.

(2022) emphasize that an over reliance on survey-based research, ongoing theoretical inconsistencies, and practical uncertainty have limited the practical application of transformational leadership. Therefore, taken together, these criticisms highlight the need for qualitative research to fully understand the nuanced, contextual, interpersonal, and situational aspects that underlie transformational leadership in real-world settings.

Although it also reflects some of transformational leadership's shortcomings, green transformational leadership provides a more concentrated lens on sustainability-oriented results in this setting. According to Ali et al. (2025), green transformational leadership seems to take more of an exploitative approach rather than an exploratory strategy when implementing incremental green ideas into practice, indicating that transformational leadership would be more appropriate for slow rather than drastic change initiatives.

Transformational leadership continues to be one of the most significant leadership theories despite some critics and challenges highlighted. Numerous studies demonstrate the link between organisational, team and individual outcomes and transformational leadership behaviours, proving that the theoretical and practical application and relevance of this theory should not be overlooked (Siangchokyo et al., 2020; Avolio & Bass, 1995; Bass, 1985; Bass & Riggio, 2006; Bass & Steidlmeier, 1999).

Majority of scholars have consistently highlighted how transformational leaders inspire followers to perform beyond set expectations by speaking to and changing followers' beliefs, values and attitudes (Bass, 1999; Stock et al., 2022). Research reveals gaps in the literature on how transformational leadership dimensions and behaviours impact follower behaviour in manufacturing and promote organisational transformation (Buil et al., 2018). These limitations highlight a clear opportunity: this study can advance theory and practice by analysing transformational leadership in the context of sustainable innovation practices within manufacturing.

Transformational leadership offers a strong theoretical foundation for analysing behavioural and cultural shifts towards sustainability, connecting innovation-driven goals with moral, developmental, and organisational results. This study will further explore how this theoretical approach arises in innovative practices, especially in manufacturing settings. Building on this theoretical framework, the next sections explore how innovation processes are shaped by transformational leadership.

2.3 Transformational leadership & Innovation

Earlier discussions have demonstrated how transformational leadership is considered a major force when coming to company's innovation and creativity efforts (Avolio & Bass, 2004; Bass & Riggio, 2006). Amabile (1998), defines creativity as initial phase in the innovation process, while innovation is the output from various creative concepts and can be in the form of a new or enhanced system, product, or process (Bharadwaj & Menon, 2000). Therefore, the initial phases of innovation are based on creativity (Amabile & Pratt, 2016).

Additionally, through intellectual stimulation, candid dialogue, and the will to put the needs of the group ahead of one's own, transformational leaders foster creative potential (Bass, 1999) amongst those they lead. According to Nevo et al. (2020) the componential theory of creativity (COR) states that the following elements supports innovative behaviours through creating an enabling environment, motivation, and domain relevant skills. Thus, transformational leaders reinforce these elements through mentoring, coaching, psychological safety and creating an environment that promotes innovation and exploration.

Furthermore, transformational leaders motivate, encourage trust and psychological empowerment within the teams they lead. By having a clear and direct goal that encompasses both the organisations and the employees' objectives (Bass & Riggio, 2006), gives employees a sense of purpose and encourages innovation. Avolio & Bass, (2004) argue risk taking and creative expression are encouraged in a setting that is safe due to the trust created by leaders' honesty and consistency. Proving that when followers feel secure and motivated, they are more willing and likely to create and participate in innovation creation.

2.3.1 The Link Between Transformational leadership and Creativity

As stated in earlier studies by Bass (1985), transformational leaders providing intellectual stimulation set a base for followers to explore and think outside of the box. In addition, idealised influence and motivation assists leaders to set a clear vision and instil more creativity amongst employees, while individualised consideration offers individual focus that leads to increased confidence and creativity (Oke et al., 2008). This suggests that transformational leaders serve as a catalyst and a cognitive as well as affective stimulant for creativity, encouraging fresh perspectives and strengthening the self-confidence

necessary for taking creative risks. Even in the face of uncertainty, creative perseverance is sustained by the cognitive flexibility that results from intellectual stimulation and the emotional support that is ingrained in personalised consideration.

These mechanisms are further supported by recent studies. Employees problem solving skills and creative thinking ability are influenced by leaders that are transformational, and this in turn leads to the generation of fresh and sustainable ideas (Begum et al., 2022). Similarly, the relationship between innovative actions and transformational leadership is strengthened by an innovative climate, corporate recognition, and employee input (Lin, 2023). These studies illustrate that transformational leadership operates through both motivational and cognitive pathways that shape individual creativity.

Figure 2 illustrates the hypothesised processes linking dual-focused transformational leadership to individual creativity (Nevo et al., 2020). This model complements the discussion above by illustrating how management behaviours aimed at both the team and individual levels drive the psychological and environmental conditions that underpin innovative performance.

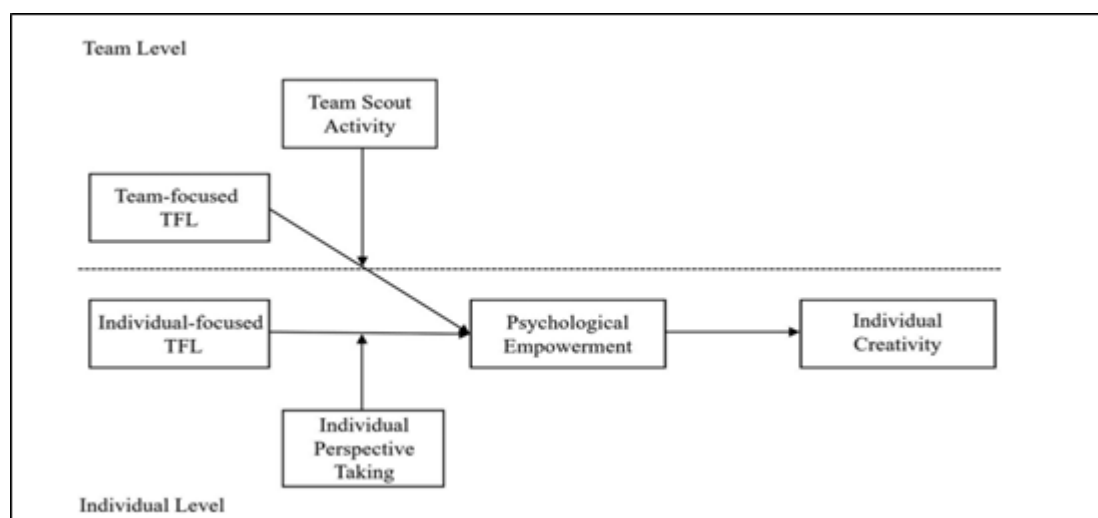


Figure 2: Hypothesized model of the processes linking dual-focused transformational leadership to individual creativity.

Source: (Nevo et al., 2020)

Building on this foundation the next section on transformational leaders as drivers will analyse how transformational leaders transform creative ideas and processes into organisational innovation and sustainable outcomes.

2.3.2 Transformational Leaders as drivers of Innovation

According to transformational leadership theory, the role transformational leaders play extends beyond the creation and implementation of innovative ideas. They embody qualities and display charisma that supports and positions innovation as a common corporate priority (Singh et al., 2022). They encourage novel ideas and innovative thinking through intellectual stimulation (Sui et al., 2012, as cited in Zhao et al., 2025). Transformational leaders connect the teams' objectives and commitment to the process of innovation by articulating a clear vision for the future and exhibiting idealised actions in pursuit of that vision (Bass & Riggio, 2006).

Importantly, transformational leaders cultivate teamwork, dedication, and a shared goal to transform creativity into innovation. Their relational effect guarantees that innovation is not a distinct result but rather an integrated organisational capability. This is consistent with theoretical and empirical work indicating that transformational leaders improve organisational innovation by shaping processes and improving dynamic capabilities that enable continuous product and service innovation (Yang et al., 2025). Ali et al. (2025) enhance this by demonstrating how transformational leadership encourages efforts towards innovation in manufacturing organisations in conjunction with learning. According to their findings incorporating innovation into processes requires a leadership approach that promotes enablement and visioning.

Therefore, transformational leadership is a great approach to enhancing and encouraging innovation that balances financial, environmental, and social outcomes (Mousa et al., 2025). Through having a clearly defined long term goal and joint accountability, transformational leaders create a motivational and cultural basis for sustainable innovations. Peng et al. (2021) supports this through showing that transformational leadership encourages shared objectives which in turn contribute to team level sustainability and innovation focus. Together, these insights establish transformational leadership as a framework for integrating moral and sustainable ideas right through the organisation as well as a good basis for innovation and creativity.

2.3.3 Challenges and Moderating Factors

Despite the positive effect transformational leadership has in encouraging innovation, the influence differs depending on organisational and situational factors. The level and kind of leadership influence might differ depending on the phase of innovation. According

to Oke et al. (2008) and Chen et al. (2025), leadership influence on innovation has proven to be more effective in the earlier creative phases that require adaptability, while later stages emphasize tenacity and execution control.

Factors such as the culture and structure of the organisation as well as the industry determine impact transformational leadership can have. An environment that encourages learning and exploring delivers a more positive impact than those that do not, as intellectual stimulation is reduced. Ali et al. (2025) has demonstrated this in their study, showing that transformational leadership combined with explorative learning encourages innovation within the manufacturing environment. In addition, they also concluded that the success of incorporating these elements into innovation objectives depends on the success of the leadership. Recent studies argue that although having a leader with a great vision for the future can lead to more innovation, depends on the how well they leverage of their dynamic capabilities (e.g. Having great environmental awareness and integration of resources) (Abbas, 2024).

Additionally, an organisations innovation depends not only on the internal leader-member exchange but is also impacted by external factors (Zhao et al., 2025). However, existing research do not clearly distinguish the types of innovation whether it is process or product, radical or incremental and how it all fits together – workers, managers, and the organisation. To close this gap, Ali et al. (2025) distinguishes incremental and radical green innovation, demonstrating the importance of having leadership approach and organisational coherence when assessing innovation outcomes.

According to Yang et al. (2025), the alignment between the organisations innovation strategy and leadership is crucial. Irrespective of the leader's influence (powerful & inspiring) if there is no clear direction or plan to innovate it will be a fruitless exercise. Stornelli et al. (2021) highlights in their study that as much as there are certain drivers there are certain barriers that prevent innovative practices, these barriers include regulatory system gaps, organizational constraints and government initiatives that fail to incentivize change and thus impacting the entire adoption process.

In addition, Durmusoglu et al. (2018) support this and highlights the internal barriers such as organisational culture, finances, and nature of human beings as well as external barriers such as raw materials, and government regulations can impact innovation creation. However, Innovation hurdles do not always stop businesses from delivering innovative services; instead, some barriers can become catalysts that increase the

likelihood of adopting new ideas. The findings also show that transformational leadership helps reduce the negative effects of internal obstacles on process, strategic, and behavioural aspects of internal service innovativeness (Durmusoglu et al., 2018).

Overall, while transformational leadership strongly aligns with sustainability and innovation objectives, the results are dependent on the organisational setting, integration of strategy, and the type of innovation. Peng et al. (2021) support this by demonstrating that team culture and separation of power is just as important for effective transformational leadership as how leaders act.

According to Bass & Riggio (2006), transformational leadership, is rooted in enhancing independence, self-motivation and trust. Recent research places importance on the kind of setting and abilities (Yang et al., 2025; Abbas, 2024) whereas earlier studies emphasized motivational components (Bass, 1999). The translation of transformational behaviours into innovative and creative outcomes is dependent on the organizational, cultural, and innovation-type settings, all of which have an impact on how effective transformational leadership is. Leveraging transformational leadership for sustainable innovation requires a flexible approach, particularly in manufacturing settings. This study investigates this requirement by exploring how transformational leadership practices are adapted and portrayed within manufacturing environments pursuing sustainability.

2.4 Transformational leadership & Sustainability

2.4.1 Defining Sustainability & Leadership focused on Sustainability

In recent years there has been an increased focus on environmental topics, the availability of resources, the intensification of global warming and the pollution of water and air (Çop et al., 2020 Adedoyin et al., 2021). These trends have resulted in grave concerns for environmental sustainability overall (Imbrogiano & Nichols, 2020). Mousa et al. (2025) further argue that the growing disparity between the need for raw materials and resources and the limited supply thereof makes sustainability efforts even more crucial. In addition, because of increased regulatory pressure, customer influence, and market competitiveness more organisations are adopting a more sustainable approach (Bechtel et al., 2025). Stakeholders are placing increased pressure on businesses to look at ways to adopt green practices and to operate in a manner that is more responsible.

Silvestre et al. (2022) argue that sustainability extends beyond environmental considerations, it encompasses social and economic dimensions as well, therefore requiring a balance between the three is a requirement when looking at actions to develop and maintain sustainability within organisations. Challenges brought by global sustainability call for a new leadership approach (Sajjad et al., 2023) and necessitates leaders to develop strategies aimed at achieving and sustaining sustainability (Çop et al., 2020; Peng et al., 2021; Castellano et al., 2022). Considering these increasing demands, organisational leaders do not only focus on strategy development but also take on a role of change agent, protecting the environment and leading sustainability driven transformations (Zhou et al. 2024).

2.4.2 Creating Sustainability Culture through Transformational leadership

Understanding the relevance of transformational leadership when coming to sustainability is made possible by the acknowledgement of leadership as a catalyst for sustainable change (Sajjad et al., 2023). Transformational leadership has evolved over the years and has garnered more attention as organisations aim to find a balance between the three sustainable pillars: economic, environmental, and social (Silvestre et al., 2022). Furthermore, to explain how organisations can support transitions towards sustainability, it is important to first understand how organisational efforts contribute to sustainability targets (Imbrogiano & Nichols, 2020). This phenomenon indicates a growing movement in leadership philosophy towards goals that are focused on sustainability.

From a theoretical standpoint, earlier discussions on transformational leadership touched on value-based influence and having long term vision. Additionally, it highlights transformational leadership as a moral and inspiring basis for change, which is one of the focuses required for sustainability (Begum et al. 2022). Bass and Riggio (2006) describes transformational leadership as a form of leadership that encourages followers and those, they lead to not only focus on their own interests but to also focus and prioritize long term goals.

Siangchokyoo et al. (2020) state that in shaping the culture of the organisation towards focusing on being ethical and having a common goal, can encourage employees to work towards organisational targets together beyond what is required. Similarly, Çop et al. (2020) explain that transformational leaders can support employees' ability to learn about green attitudes by serving as role models, displaying behaviours that encourage

environmental efforts, and maintaining consistent messaging around sustainability values and principles. Khan and Khan (2021) state that leaders that have a pre-emptive approach and knowledge on environmental matters assist the organisation to embrace sustainable environmental practices. Transformational leaders promote a culture of sustainability through psychological and emotional processes, such as shared purposes and goals, which assists employees to personalise environmental goals (Peng et al., 2021).

Bass & Steidlmeier (1999) highlight that leaders serve as role models for their employees. This role modelling effect can serve to foster green behaviours and sustainability in the workplace. Mousa et al. (2025) supports this statement by highlighting the importance of human resources practices and leadership when achieving sustainability goals. Collectively these studies demonstrate that transformational leadership connect value driven leadership to sustainability objectives and serves as a link between ethical values, innovation, and sustainable performance.

Scholars increasingly argue that transformational leadership (TL) is particularly well suited to promoting sustainability because it connects ethical values with innovative behaviour (Avolio & Bass, 2004; Çop et al., 2021). Building on this foundation, green transformational leadership also influences employees' attitudes and thinking toward environmental objectives and encourage sustainable efforts (Çop et al., 2021; Begum et al., 2022). These leaders promote pro-environmental innovation and learning as well as improve organisational sustainability initiatives. This makes green TL a vital driver of sustainability transformations in diverse organizational contexts.

2.5 Sustainability and Innovation Practices in Manufacturing

2.5.1 Defining Sustainable Innovation

Increased focus on environmental issues due to pollution, climate change and environmental disasters has resulted in increased attention towards sustainable development during the last few decades (Ndubisi et al., 2020; Lim & Fujimoto, 2019). This historical trend suggests that the theoretical development of sustainable practices was sparked by environmental disasters. Manufacturing being one of the industries that played a role in growing concerns due to a lack of responsible practices (Ndubisi et al., 2020).

In theory this suggests that negligence from the manufacturing industry has influenced the theoretical development of sustainable practices. Bechtel et al. (2025) defines sustainable innovation as having a strong sustainability commitment which is centred and rooted in an organisations culture and strategy, which promotes creativity and drives innovation. The impact of sustainability orientation on innovation has not received sufficient attention in prior research (Bechtel et al., 2025). As organisations focus on sustainability grows, scholars differ on the extent sustainability should be embraced to become innovative (Hahn et al. 2017).

The following criteria leads to a positive association between innovation and sustainability. Through the inclusion of sustainability when making decision on innovation, innovative projects and teams are given more resources and freedom to explore sustainability (Bechtel et al., 2025). To generate environmental, economic and value, organizations are advised to include sustainability into their organisation's strategies. This shift is aided by innovation, which has attracted the attention of stakeholders, managers, policymakers, and academics (Silvestre et al., 2022).

An organisation is more susceptible to develop and implement sustainability-oriented ideas and innovations when employees are actively involved and leaders apply effective leadership styles (Zhao et al., 2025). Within this context, transformational leadership that is focused on environmental matters has since been recognised as a powerful strategy that encourages employees' pro-environmental behaviours and increases sustainability results. Research increasingly shows that sustainability-focused innovation is an internal strategic decision driven by the culture of the organisation and the vision of the leaders in the organisation - two key elements promoted and encouraged by transformational leadership.

2.5.2 Sustainable Manufacturing

Sustainable manufacturing (SM) can be described as the collection of environmental, productive, social, and logistical practices and techniques that minimize resource consumption and improves processes through environmental design and innovation (De Guimarães et al., 2025). With a stronger focus on sustainability, manufacturing organizations can use changes in technology and regulations to support innovative projects (Bechtel et al., 2025).

According to (De Guimarães et al., 2020 as cited in De Guimarães et al., 2025), innovation, market pressures, social responsibility, knowledge management, and environmental sustainability are some of the variables that determine the strategies that make up SM. These factors also include productivity, innovativeness, cleaner production, and dynamic capacities. Further to this Bag et al. (2020) state that organisational skills like innovative thinking, cutting-edge equipment use, and sustainable practices are examples of internal capabilities. These elements imply that internal abilities, areas where transformational leadership can promote innovation and sustainability as well as external factors are important for manufacturing. Transformational leadership serves as a human-centric mechanism enabling firms to develop and leverage sustainable manufacturing practices, translating knowledge and environmental pressures into sustainable innovation outcomes.

2.5.3 Employee and Organisational Perspectives

From an employee and organisational perspective, transformational leadership is essential for coordinating sustainability objectives leveraging of individual motivation. Scholars such as Robertson and Barling (2017) and Siangchokyoo et al. (2020) argue that leaders who encourage moral commitment, communicate clear visions and objectives and display pro-environmental behaviours, alignment is bound to occur. Through value-based influence, transformational leaders can allow employees to personalise sustainability goals and be part of a broader goal and purpose. Bass (1999) describes this as moral evolution, where employees move from self-serving to shared purpose, which inspires employees to go beyond their day-to-day duties and be more creative.

Recent studies further elaborate how transformational leadership behaviours and factors operate on a psychological level. Kehr et al. (2022); Avolio and Bass (1994); Çop et al. (2021) show that it has been proven that leaders can motivate employees to actively participate in sustainable innovation processes through the creation of trust, empowerment and having a common goal. These processes demonstrate that internal motivation and a learning environment, rather than directive control, facilitate the relationship between leadership and creativity.

However, some scholars argue differently and caution against the general perception that sustainability is solely value driven. According to Hahn et al. (2017) elements like rewards, company regulations and rules also influence worker behaviours towards

sustainability, thus indicating that transformational leadership in isolation might not ensure long term sustainability in the absence of supportive organisational structures. Ali et al. (2025) support this by indicating that leadership works best when organisational learning and support structures align with innovation targets. This debate shows misalignment between extrinsic motivation which is fuelled by internal organisational policies and other elements as well as intrinsic motivation which stems from leadership theories and values. The relationship between these forces can indicate whether sustainability practices become ingrained or remain symbolic for organisations.

In conclusion these viewpoints suggest that transformational leadership is a form of mediation that assists employees to understand and embrace sustainability. Thus, transformational leadership bridges organisational objectives and individual understanding by connecting ethical values, learning and encouragement. In conclusion, this positions transformational leadership as a strategic enabler of sustainable innovation in manufacturing due to its mediating role.

2.6 Comparative Theoretical Lenses: Resource-Based View and Dynamic Capabilities vs. Transformational Leadership

Transformational leadership is concerned with how morals, ideals, vision of the organisation and people influence innovation and sustainability (Bass, 1985; Bass & Avolio, 1995; Bass & Riggio, 2006). However, it is equally important to study supplementary theoretical principles that supports the performance of the organisation and capability development. This section introduces two supplementary theoretical principles namely Resource Based View (RBV) and Dynamic Capabilities Theory (DCT) and will also show how it compares with the theory selected for this study: Transformational leadership. Through a comparative analysis, this study explains why Transformation leadership is the most suitable theory for promoting sustainable innovation practices in manufacturing.

2.6.1 Resource Based View (RBV)

RBV can be defined as a theory that focuses on a firm's capabilities and resources and how it performs in the environment it operates in (Kim et al., 2014; Begum et al., 2022). It aims to highlight various resource capabilities amongst organisations operating within the same industry to determine how these variations provide sustainable competitive

advantage (Barney, 1991). Barney (1991) explores four devery indicators: valuable, rare, inimitable, and non-substitutable (VRIN) which are required to create sustainable competitive advantage. Building on this definition Begum et al. (2022) explains that this traditional theory implies that having capabilities and better resources that are difficult to replicate will promote a consistent performance.

However, Kraaijenbrink et al. (2010) criticizes this theory and state that RBV is a theory that remains unchanged, and it ignores how organisations use resources and capabilities in an ever-changing environment. Additionally, RBV is under increased scrutiny especially where sustainable innovation is concerned, despite its popularity and significance the traditional focus of resources on VRIN fails to take into consideration social and environmental integration of the organisation (Bhandari et al., 2022; Khanra et al., 2022). Scholars further argue that RBV's focus on economic output and success, excludes essential elements such as environmental and social issues and thus, it requires to be further extended (Bhandari et al., 2022). Moreover, RBV lacks to demonstrate how resources can adapt to environmental changes and digital transformations (Wang & Ahmed, 2007; Yang et al., 2023). Mohaghegh et al. (2024) argues that that having resources and capabilities requires enablement through dynamic capabilities. The gaps identified in the literature, highlight the need to add process orientated theories such as Dynamic capabilities or transformational theories such as transformational leadership to RBV to better understand sustainability changes. This is due to RBV being static and organisation focused and manufacturing organisations operating in an ever-changing environment.

2.6.2 Dynamic Capabilities Theory (DCT)

Building on the resource-based view (RBV) foundational but static assumptions and limitations, RBV is extended through Dynamic Capabilities Theory (Teece, 2007), which broadens and critiques RBV by emphasizing an organisation's higher-order capacity to continually adapt, innovate, and integrate in response to a changing environment (Wang & Ahmed, 2007). Dynamic capabilities are defined as the organisations' ability to develop, reorganize and build both internal and external skills to tackle a rapidly evolving and changing environment (Teece, 2007), and further to this Teece (2007) states that by focusing on transforming, acquiring and sensing an organisations capability, DCT surpasses VRIN resources described in RBV.

Through integrating capabilities such as seizing, sensing, and converting processes into everyday organisational tasks and leadership thinking, dynamic capabilities facilitate the evolution of learning and strategic transformation (Teece et al., 1997; Wang & Ahmed, 2007). According to recent studies dynamic capabilities enable sustainable performance when supplemented or enhanced through transformational mechanisms like resource modification, innovation and organisational learning (Mohaghegh et al., 2024). These capabilities enhance DCT's ability to shift towards sustainability through building skills that can sustain long term social and environmental objectives. For instance, agile manufacturing is currently viewed as a dynamic capability that necessitates constant modifications to achieve triple bottom line results learning (Mohaghegh et al., 2024). Taking all these into consideration, one can imply that transformational leadership is an enabler of promoting a culture of learning, innovative mindset and promoting creative thinking that enable transformation, sensing and seizing capabilities.

2.6.3 Comparing Transformational leadership, Resource Based View and Dynamic Capabilities

Table 1: Theoretical Lense Comparative Analysis

Aspect	Transformational Leadership (TL)	Resource-Based View (RBV)	Dynamic Capabilities Theory (DCT)
Focus	People, vision, and values-driven change (Bass, 1985; Bass & Avolio, 1995; Çop et al., 2021; Ali et al., 2025)	Capabilities and resources in context (Barney, 1991; Kim et al., 2014)	Sensing, seizing, transforming (Teece, 2007; Wang & Ahmed, 2007)
Level of Analysis	Individual and organizational culture (Kim et al., 2021; Siangchokyo et al., 2020; Janjua et al., 2024)	Firm-level, static orientation (Barney, 1991; Kim et al., 2014)	Strategic processes across levels (Teece et al., 1997; Wang & Ahmed, 2007)
Strenghts	Motivational mechanism; fosters commitment and growth (Bass & Riggio, 2006; Mousa et al., 2025)	Value creation through VRIN resources (Barney, 1991)	Change capability; enables adaptation (Teece, 2007; Mohaghegh et al., 2024)
Shortcomings	Theoretical incoherence; weak causal validation; overreliance on perceptual measures (Van Knippenberg & Sitkin, 2013; Siangchokyo et al., 2019; Stock et al., 2022)	Static, ignores resource use in dynamic environments (Kraaijenbrink et al., 2010; Bhandari et al., 2022; Khanra et al., 2022)	Overly conceptual; needs integration (Mohaghegh et al., 2024)
Sustainability Relevance	Embeds long-term purpose, learning culture, shared values and encourages innovative behaviours (Sajjad et al., 2023; Silvestre et al., 2022; Imbrogiano & Nichols, 2020)	Limited attention to environmental/social integration (Bhandari et al., 2022; Khanra et al., 2022)	Enables sustainability transitions (Yang et al., 2023; Teece, 2007; Mohaghegh et al., 2024)

Source: Authors Own

This concludes the comparative analysis of different theories. This comparative analysis demonstrates why transformational leadership is well suited to encourage sustainable innovation practices within manufacturing. Transformational leadership provides cultural,

psychological, and motivational mechanisms while RBV focuses on ensuring an organisation has valuable resources, and DCT promotes having procedures in place to adapt and change dynamic capabilities in the organisation. Transformational leadership facilitates and ensures that both RBV- resources and dynamic capabilities can be achieved to meet sustainable objectives through shared values, coordinated vision, ethical values and facilitates learning and idea creation.

2.7 Conclusion and conceptual framework

This literature review has explored the theoretical and empirical foundations of transformational leadership (TL) and its influence on innovation and sustainability within manufacturing contexts. It starts with establishing Transformational leadership as development-orientated and value driven leadership style that encourages and promotes moral values, innovation and long-term transformational focus amongst organisations that apply transformational leadership (Bass & Riggio, 2006; Avolio & Bass, 1995). Through making use of the key dimensions introduced earlier by Oke et al. (2008), namely intellectual stimulation, individualised consideration, and inspirational motivation, transformational leadership allows employees to align organisational objectives with individual ideals, thus promoting innovation and sustainability results (Boies et al., 2015; Çop et al., 2021; Peng et al., 2021).

Building on this framework, the review explores how transformational leadership encourages psychological safety, trust and shared goals to promote creativity and innovation (Nevo et al., 2020; Begum et al., 2022). It further demonstrates that transformational leadership is an employee motivator and organisational culture enabler of sustainable practices in addition to being a driver of innovative practices (Robertson & Barling, 2017; Khan & Khan, 2021). Green transformational leadership first introduced by Robertson & Barling also emerged as an extension of the transformational leadership theory, giving a new perspective on environmental goals and sustainable transformations (Ali et al., 2025; Kim et al., 2021).

However, despite the recognised advantages of this leadership approach, a leader cannot truly be considered transformational unless their followers themselves are transformed (Bass & Steidlmeier, 1999; Siangchokyoo et al., 2020). The literature reveals several gaps. There is limited integration of transformational leadership into innovation and sustainability within the manufacturing industry, an industry that is

changing significantly due to of technological advancements and environmental challenges (Silvestre et al., 2022; Bechtel et al., 2025).

While various study agrees that transformational leadership can foster sustainability and innovation (Robertson & Barling, 2017; Çop et al., 2021; Mousa et al., 2025), few studies explore how workers themselves perceive, experience, and interpret this influence in real-world context (Stock et al., 2022; Van Knippenberg & Sitkin, 2013). Moreover, the effectiveness of transformational leadership is highly reliant on the transformation of followers, who act as an important instrument for demonstrating how successful organisational objectives and leadership particularly in relation to learning orientation, dynamic capabilities, and cultural readiness is (Kehr et al., 2022; Kim et al., 2021; Yang et al., 2025). Despite extensive research on transformational leadership, the leader follower transformation process is one of the most understudied aspects of this leadership approach (Ali et al., 2025; Abbas, 2024; Peng et al., 2021).

In highlighting these gaps, this review provides a solid foundation for further research into how transformational leadership functions within manufacturing settings to influence sustainable innovation. This study responds to the requirement to adopt a qualitative approach that emphasizes employee viewpoints and further investigates the psychological, organisational, and cultural ways that transformational leadership affect sustainability transformations. This literature review positions transformational leadership as conceptual and practical lens to understand how manufacturing organisations embrace and adopt sustainable innovation practices.

2.7.1 Conceptual framework

In conclusion, Figure 3 presents a conceptual framework derived from the literature review, illustrating the key constructs and themes related to transformational leadership and its influence on sustainable innovation within manufacturing. The conceptual framework highlights the pathways through which transformational leadership shapes follower transformation and interacts with organisational competences to drive the adoption of sustainable innovation practices. This model reflects how transformational leadership is theorised to impact innovation and sustainability within a manufacturing context based on the literature and aligned with the research objectives.

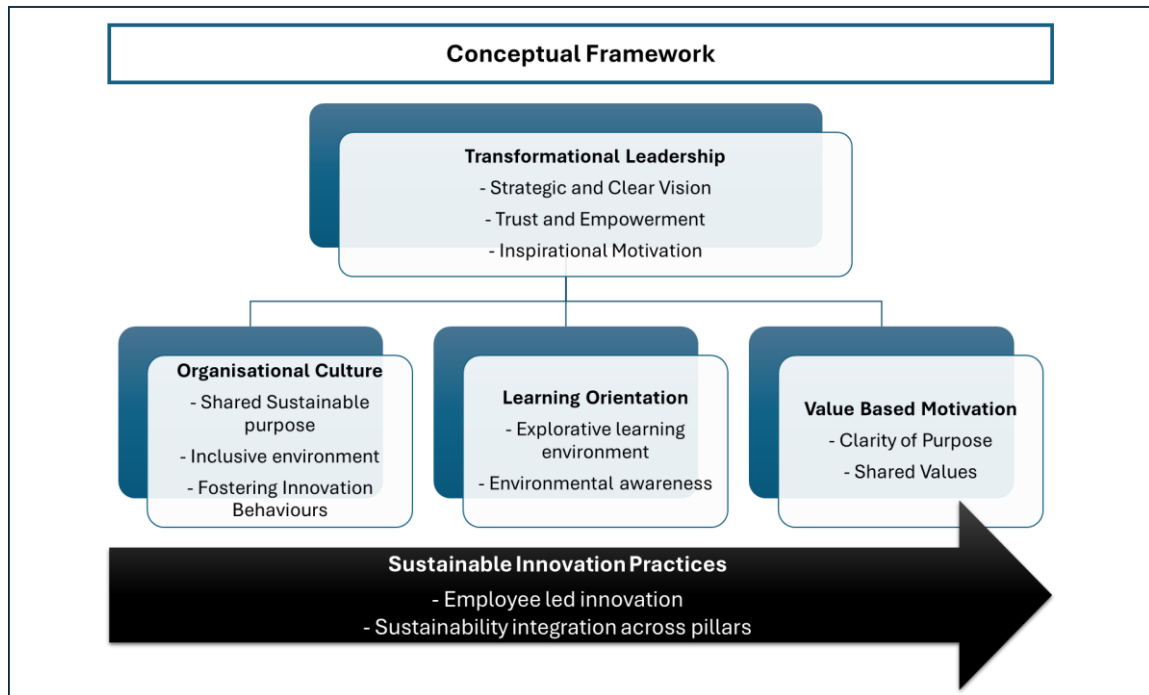


Figure 3: Conceptual Framework

Source: Authors Own

Chapter 3: Research Questions

The research questions presented in Chapter 1 are confirmed and expanded upon in this chapter. This chapter aligns with the research problem identified in Chapter 1. It examines the questions within the relevant theoretical and empirical literature, showing how they fill gaps and build on earlier studies. The objective is to offer a theoretical justification for analysing transformational leadership in connection to sustainable innovation practices in manufacturing. The questions also link to the invitation for further research identified in current literature.

Ali et al. (2025) highlight the necessity for further research to gain a greater understanding of how leadership styles and practices relate to methods of learning and how they promote incremental or radical innovations within manufacturing. Their research emphasises the need to understand specific transformational leadership behaviours such as empowerment, culture, and visioning that affect innovation and organisational culture. Peng et al. (2021) stress the significance of investigating workers' views, passions, and cultural dynamics in transformational leadership focused on the environment. Their research encourages researchers to build on their work and to investigate employees' perceptions of leadership and how these perceptions impact organizational transformation toward sustainability, as well as to expand research to other industries and situations. Despite the emphasis on environmental leadership, Peng et al. (2021) still demonstrate how transformational leaders promote personal involvement and assist in defining company objectives. These are important methods for incorporating sustainability into team culture and processes.

Building on these insights, this study will use an exploratory, qualitative approach to capture the lived experiences of transformational leaders who integrate sustainability into manufacturing innovation practices and vice versa. The below sections give a justification for each question and how it addresses the gaps in current literature.

Main Research Question

What influence does transformational leadership have on manufacturing's adoption of sustainable innovation practises?

The research question aims to explore behaviours that influence culture, the way of thinking and strategic decision making that enable manufacturing organisations to incorporate sustainability into their innovation practices. The research question is supported by Ali et al. (2025) who demonstrate how leadership styles affect innovation

objectives in manufacturing through learning and strategic alignment. Peng et al. (2021) further highlights how leadership influences the adoption of sustainable innovation and emphasizes the significance of leaderships in affecting team level sustainability activities and personal involvement.

Sub-question 1:

How do employees perceive the influence of transformational leadership on innovation?

This question aims to explore how employees view and experience their leaders' influence on innovation within their organisations. It focuses on understanding the ways employees interpret leadership behaviours and how these perceptions affect their willingness to engage in or support innovative and sustainable practices.

Sub-question 2:

How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing?

This question seeks to uncover how leadership contributes to shaping shared values and everyday behaviours that promote sustainability. It looks at how leaders inspire employees to adopt environmentally conscious attitudes and how these behaviours become part of the organisation's working culture. Here both Peng et al. (2021) and Ali et al. (2025) are relevant. Ali et al. (2025) emphasize how leadership styles impact the development of sustainable oriented behaviours through learning and cultural integration. Peng et al. (2021) explore how transformational leadership promotes shared environmental values.

Sub-question 3:

What transformational-leadership practices influence the integration of sustainability and innovation into manufacturing and organisational culture?

This question focuses on identifying which specific leadership practices help organisations combine sustainability and innovation. It explores the actions, communication styles, and motivational approaches leaders use to embed these priorities into their teams and the wider organisational culture.

Sub-question 4:

In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

Chapter 4: Research Methodology

This chapter outlines the research methodology, including the approach, sample and population, ethical clearance, and validation procedures. It demonstrates why this methodology was appropriate to address the central research question: What influence does transformational leadership have on manufacturing's adoption of sustainable innovation practices?

4.1. Research paradigm

The research philosophy followed in this study is that of an interpretivism epistemology and constructivist ontology. Interpretivism is based on the perception that people's real-life experience is a great way to understand certain events (Creswell & Creswell, 2023). The interpretivism paradigm's main goal is to grasp the interpretation of the individual in the area under study (Goldkuhl, 2011). Interpretive research is vital for understanding the individual's lived experiences in a non-prejudicial manner (Sanchez et al., 2022). Bell et al. (2019) further support this statement and explains that this paradigm reduces researcher opinions and focuses on understanding how people make sense of their own environments thus aligning with the concept of phenomenology. Thus, a study that seeks to understand and investigate the behaviours of humans, leadership process and organisational dynamics are well suited for interpretivism. A researcher can examine these experiences in a way that acknowledges their context and complexity by using an interpretivist paradigm. It also aligns with phenomenological design which emphasize the personal experience of the individual (Alhazmi & Kaufmann, 2022).

In summary, the interpretivist paradigm was best suited to this study because it allowed for a deeper knowledge and investigation of the lived experiences of leaders and employees in the manufacturing industry, focusing on how transformational leadership influences sustainable innovation practices.

4.2. Research Design

This study employed a qualitative research design to explore the lived experience and methods of the leader and their colleagues who form part of the process. Qualitative research uses inductive data analysis and interpretation to investigate how individuals or groups perceive social or human issues (Creswell & Creswell, 2023). Qualitative research design starts with philosophical assumptions and the researchers'

perspectives, which guide the execution and documentation of the study (Creswell & Poth, 2016). Qualitative research is also used to elaborate on theory. This allows them to refine or elaborate on the theory, so it accurately explains the empirical phenomenon being investigated.

Building on this, this study thus adopted a qualitative, phenomenological research design. Because phenomenology aims to comprehend how people perceive and interpret occurrences in their own terms, it is especially well-suited to interpretivist research (Alhazmi & Kaufmann, 2022; Sanchez et al., 2022). This design provides insight through both the lens of the leader and those they lead. It will also illustrate the impact of their leadership style at an individual, team and at times organisational level. The study focuses on understanding participants' thought processes and behavioural patterns, offering deeper insight into leadership dynamics (Sengupta et al., 2020).

4.3. Research setting

The research setting of this study was determined by the main research question. The aim was to ensure that the data collected would help in understanding the influence of transformational leadership on sustainable innovation practices within the manufacturing setting.

The setting included organisations operating within the automotive and beverage manufacturing sectors in South Africa, all of which also have multiple operations outside of South Africa, making them multinational corporations. The automotive and manufacturing industries are under increased pressure from political, regulatory, and social perspectives to be environmentally and socially responsible due to the contribution they make to environmental damage. Therefore, this setting was appropriate to address the research question introduced above.

4.4. Unit & Level of Analysis

4.4.1. Unit of Analysis:

The unit of analysis for this study is the perceptions and lived experiences of individual managers (managers, senior managers and executives) who are part of and have experience with sustainable innovation practices within manufacturing.

4.4.2. Level of Analysis:

The level of analysis for this study is the individual manager level. Individual interviews were conducted with managers, senior managers and executives who were directly involved in or influenced by transformational leadership and sustainable innovation practices. These participants were selected to provide insight into their personal lived experiences and their perspectives on how transformational leadership influences sustainable innovation practices within manufacturing.

4.5. Sampling method, criteria, and size

4.5.1. Sampling method

This study employed a purposive sampling method. It is used in qualitative research methods and allows the researcher to specifically select who will be part of the research or what element will be included and where it will be done to have a better understanding of the research question (Bell et al., 2019; Creswell & Creswell, 2023). Purposive sampling is appropriate for this method of studying as it focuses on the lived experience of the participant instead of generalizing findings (Devers & Frankel, 2000).

4.5.2. Sampling criteria

The research first determined manufacturing industries with strong sustainability initiatives by reviewing business reports, sustainability reports and trends in the industries. Participants were recruited based on the organisations they work for, which are making radical or incremental changes in the industry and how they contribute towards that. The researcher selected potential participants through their professional network, referrals, and LinkedIn. To ensure rigour, participants were drawn from multiple organisations and represented varying levels of engagement with sustainability, leadership roles, and innovation maturity. Theoretical sampling approaches were supported by this variety, which allowed concept development and refinement throughout analysis.

In this study, the selection criteria for participants focused on individuals based on their role and influence on sustainable innovation. This included top management who exhibit transformational leadership behaviours and characteristics, as well as employees at lower levels who experience these behaviours and may themselves hold informal

leadership roles. This dual approach enabled deeper understanding of leadership dynamics and their organisational effectiveness (Gioia et al., 2021; Gehman et al., 2018; Bell et al., 2019).

Participants were drawn primarily from the automotive manufacturing sector, with additional representation from the beverage industry to allow for comparative insights. The specific questions and the sampling technique assisted in determining who would be selected (Braun & Clarke, 2021).

4.5.3. Sample size

This final study sample consisted of 14 participants, which fell within the targeted sample of 10-15 participants. Based on the recommended sample size guided by scholars, this was concluded as an appropriate sample size for phenomenological studies, greater than 10 participants (Bell et al., 2019).

Participants were invited by email, in the body of the email the researcher gave a summary of the topic and an invitation for them to form part of the study. A meeting invite was sent upon approval/consent to partake in the research study as well as availability of the participant. Interviews were tracked in an excel spreadsheet to track number of participants, manufacturing organisation, and other elements such as rescheduled dates or outstanding consent forms. Due to participants either coming from the vehicle manufacturing or beverage industry, participants were grouped by their functional role or contribution area. Table 3 presents the list of interviewed participants for this study. The names of participants and the companies they work have been pseudonymized to protect identities. These individuals play a critical role in shaping and implementing sustainable innovation within their organisations.

4.6 Research Instrument

The researcher conducted qualitative interviews using semi-structured, open-ended questions which formed as the primary method of data collection. A semi-structured interview guide was created and comprised of open-ended questions designed to prompt participants perceptions and lived experiences of transformational leadership and sustainable innovation practices. It was prepared in advance, two pages long and used consistently across all interviews.

Each interview began with an orientating question to introduce the topic and ended with a concluding question and a reflective question to capture overall impressions and additional insights. Table 02 shows how the interview questions were mapped to the main research and sub-questions, ensuring direct alignment between the guide and the research objectives, research aims, and theoretical perspectives discussed in chapter 1, thereby aligning with the study's key themes.

Table 02: Mapping of interview guide questions to research questions

Research Question / Sub-question	Interview Guide Section(s)	Mapped Interview Questions
Sub-question 1: How do employees perceive the influence of transformational leadership on innovation?	3. Understanding leadership style (lower managers) 4. Understanding leadership style (senior managers & above) 7. Impact of transformational leadership	- How would you describe the leadership style of senior managers you've worked with? - Please give an example of a leader you consider to be transformational and why? - What leadership characteristics have you observed that have a positive impact on innovation creation? - In your experience, how have these leadership characteristics influenced innovation creation? - Based on your observation and experience, how have you or your colleagues responded to leadership efforts?
Sub-question 2: How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing?	5. Leadership and sustainable innovation	- What kinds of support is provided or do you provide to promote sustainability in your role? - How has your own lived experience influenced approaches to sustainability and innovation? - Can you give examples of how you or other leaders support or deter sustainable innovation?
Sub-question 3: What transformational-leadership practices influence the integration of sustainability and innovation into manufacturing and organisational culture?	5. Leadership and sustainable innovation 6. Culture of the organisation & barriers	- Can you share an example of an innovation project you worked on and how leadership affected it? - How would you describe the culture of innovation you've experienced? - What challenges have you faced when implementing sustainable innovations? - How do leaders respond to resistance and challenges toward change?
Sub-question 4: In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?	2. Background of the interview 5. Leadership and sustainable innovation 6. Culture of the organisation & barriers	- In your opinion, how have leaders in your work environment approached sustainability and innovation practices? - What is your understanding of transformational leadership? - What challenges have you faced when implementing sustainable innovations? - How would you describe the culture of innovation you've experienced?

Source: Authors Own

Each sub-question was intended to feed directly into the main research question. The interview guide questions were mapped to the sub-questions where they are most applicable, with the understanding that insights from each sub-question collectively contribute to answering the main research question: What influence does transformational leadership have on manufacturing's adoption of sustainable innovation practices?

4.7 Data gathering process

Data was gathered from the insights and information obtained during the interview process. Data gathering process commenced after ethical clearance was obtained. A copy of the ethical clearance approval is included in Appendix 1. All interviews were conducted by the researcher to ensure consistency in data gathering and style of questioning.

Interviews were scheduled for 60 minutes, however the actual interview discussion lasted on average 35-45 minutes each. The interview guide was used to facilitate the interviews, and this guide was never shared with the participant to ensure there was no outside influence or prior preparation, and only their knowledge, opinions, observations and experiences were captured.

Face-to-face and MS Teams interviews were used to capture personal leadership experiences with multiple employees to gather diverse perspectives on the managers. MS Teams was used to record the interviews and the recordings, as well as transcripts were saved on the researcher's Microsoft OneDrive and were password protected. Only the researcher has access to it on their personal laptop. Data will be archived or destroyed in accordance with institution guidelines upon completion of the research.

The outcome of this process was a set of qualitative data collected from participants lived experiences and perspectives, which formed the basis for subsequent analysis.

4.8 Data Analysis Approach:

Thematic analysis (TA) was the chosen analysis approach as it is appropriate for qualitative research studies (Bell et al., 2019; Braun & Clarke, 2021). TA is seen as a flexible method to examine, find and present themes and patterns in data sets (Braun & Clarke, 2006), which makes it simpler for a researcher with less experience to use (Braun & Clarke, 2006; Braun & Clarke, 2021).

Through using thematic analysis, important themes and patterns (Creswell & Creswell, 2023) pertaining to the influence of transformational leadership on sustainable innovation practices within manufacturing were found and created by the researcher. These themes are known as patterns or units of meaning found in the data (Braun & Clarke, 2021). TA approaches generally recognize that the possibility of both deductive (theory-driven) and

inductive (data-driven) approaches to coding, capturing latent and semantic meanings, processes of theme development and coding, and the possibility of some flexibility around the theory that frames the research. The importance of this flexibility is because a theme's importance is determined by its connection to the main research question (Braun & Clarke, 2021).

An iterative process of six steps using Braun and Clarke's thematic analysis framework was applied by the researcher. Step 1. Getting familiar with the data, Step 2, code creation, Step 3, looking for themes, Step 4 reviewing themes, Step 5: Defining and labelling themes, and Step 6: Writing the report.

The below section describes the process followed by the researcher.

Step 1: Familiarisation

The transcripts from the interviews were the primary data set used for analysis. As a starting point the researcher reviewed the transcripts to familiarise themselves with the content and to formulate initial thoughts and themes. The researcher uploaded the transcripts into a qualitative software tool called ATLAS.ti, where coding and analysis were done. The researcher grouped the participants into key functional areas within ATLAS.ti: Product Creation and Strategy (PCS), Production Planning and Operations (PPO), Sustainability, and Business Strategy & Market Growth (BSM). This grouping allowed the researcher to analyse and compare the findings across functional roles. See Appendix 02 for an extract from ATLAS.ti showing how participant transcripts were grouped.

Step 2: Initial Coding – *Refer to Appendix 4*

The researcher used ATLAS.ti for the coding process, which entailed the researcher creating keywords and phrases that are applied to sections of data to emphasise the main idea and pick possible connections between them (Naeem & Ozuem, 2022). By transforming large amounts of textual data into a simplified phrase, this stage makes it easier to understand the data and helps find components that are relevant to the study questions (Naeem et al., 2023). The coding process was applied in the same manner for each transcript, by working through the transcripts and highlighting key quotations made by participants and attaching a code (2–5 words) assigning meaning or a short phrase to it, referred to as codes. The coding approach followed an inductive, data-driven process.

Step 3: Searching for themes

Once coding was completed, the researcher then assigned each code into a broader theme or category. The researcher grouped similar codes together. When analysing data using a thematic approach, the researcher looked for recurrent themes, response similarities, and response disparities related to the same issue (Bell et al., 2019). To find similar and different comments on the same issue, the researcher went back to the codes that were produced in Step 2. These were then grouped into categories based on similar ideas. This process was supported through the grouping functions within ATLAS.ti.

Step 4: Reviewing themes

The researcher checked how well the themes fit together within themes and across the data set. This is to ensure the accuracy of the data presented. Some themes were removed, separated or added together as needed.

Step 5: Naming and defining themes:

The researcher named, refined and defined each theme by explaining its focus and deciding what data it represented. Each theme was given a summarising label that captured its core meaning.

Step 6: Reporting

Participant quotes and analytical interpretation were used to support the final themes, which were presented in Chapter 5.

4.9 Research quality & rigour

The validity & reliability of research and its assumptions are crucial factors in demonstrating the quality of a study within the organisational field. Internal (logical and systematic flow of theory) and external (ability to replicate) are crucial as it speaks to the quality of qualitative research (Bell et al., 2019). These elements ensure that the research correctly determines what it intends to achieve and produces consistent, trustworthy results, providing a solid footing for the study's credibility and relevance (Hayashi et al., 2019; Gioia, 2021). Four elements speak to the integrity of research, and they can be identified as trustworthiness, credibility, consistency and ability to replicate of transfer findings (Hammarberg et al., 2016).

The researcher applied these elements throughout the research process at different stages. The following elements shows the trustworthiness, credibility, consistency and ability to replicate of transfer findings of this study:

- Semi structured interview guide was used inline with the requirements of a qualitative research study.
- The research process described in 4. 7 was followed.
- A systematic approached by the researcher to ensure trustworthiness and assists with the ability to replicate the study and has potential to be transferred.
- Data recorded was transcribed immediatly after each interview using MS Teams transcription and was later reveiwd by the researcher before the coding process to ensure accuracy.

4.10 Ethical Considerations

To ensure ethical integrity, participants were given a detailed description of the study's objectives, and their permissions was obtained before taking part (Pietilä et al., 2019). This research was conducted in such a way that it caused no harm to the participant or the organisations they work for, and ethical practices were considered throughout the research process (Bell et al., 2019).

Participants' identities were protected through anonymization of the data, ensuring confidentiality for the duration of the research process. Consent was obtained from participants before proceeding with any data collection, and the consent form as well as the researcher, indicated the option to opt out of the research should the participant wish to do so at any point of the interview. Consent was also requested and obtained from participants to record the interview, to use verbatim content from the interview, and to make use of any other information collected during the session. This information was clearly stipulated in the consent form along with the focus of the study. A copy of the consent form is included in Appendix 3. Participants were additionally provided with anonymity and confidentiality, and identifying information for both the company and participants was removed to protect their privacy.

Additionally, the researcher engaged in reflexiveness, identifying and attending to any potential prejudices that may influence the study. This was done by maintaining transparency in the data collection process, allowing for a more accurate and unbiased understanding of the findings (Creswell & Creswell, 2023).

Lastly, the Gordon Institute of Business Science (GIBS) ethical clearance process was followed, and the guidelines adhered to throughout the research process. Data storage as outlined in section 4.8 was adhered to as per the guidelines given by (GIBS). All data were safely stored in password-protected folders that only the researcher could access. It will be preserved or deleted in accordance with institutional guidelines. Transcripts were verified for correctness by comparing against recordings to ensure accuracy.

4.11 Limitations:

This research has several limitations. Due to the nature of qualitative research, the study used a small purposefully selected sample through the purposive sampling method, participants were chosen based on predefined criteria. Although depth of data collection was prioritized, the controlled number of interviews means it restricts the generalizability of the results (Bell et al., 2019), and certain viewpoints may not have been captured. Findings are influenced by the subjectivity of the researcher due to the interpretive trait of thematic analysis and purposive sampling, which may create researcher bias with certain participants. Additionally, the use of semi-structured interviews could lead the researcher to unconsciously sway the participant through prompts and probes.

The data collected reflects the participants lived experience and opinions and on a managerial level, therefore findings may be skewed if the participants did not want to come across as negative, not doing much in terms of sustainability objectives and involvement.

Most of participants were from the vehicle manufacturing sector, with very little representation from other manufacturing industries. This could limit transferability of the research findings to other manufacturing settings with distinct sustainability requirements and structures. Additionally, the study was confined to South African manufacturing contexts, which may affect generalizability to the global manufacturing sector. Due to the differences in organisational culture, findings may not apply to organisations with distinct innovation models and governance structures.

Chapter 5: Presentation of findings

5.1. Introduction

The research study aimed to determine certain formational leadership behaviours and characteristics have an impact on sustainable innovation practices within manufacturing organisations. The following sections are an analysis of the researchers' findings from the data collected as described in chapter 4. The findings are derived from 14 semi-structured interviews conducted with various employees and leaders across multiple manufacturing organisations, twelve vehicle manufacturing and two beverage manufacturing.

Below is a table of the participants Table 3, followed by grouping of the participants to simplify the analysis. The researcher grouped the respondents into key functional areas in Atliis.ti as shown below in Table 3.

Table 3: Participant list:

No.	Participant	Participant group
1	PCS 1	Product Creation & Strategy
2	PCS 1	Product Creation & Strategy
3	PCS 1	Product Creation & Strategy
4	PCS 1	Product Creation & Strategy
5	PCS 1	Product Creation & Strategy
6	PCS 1	Product Creation & Strategy
7	PPO 1	Production, Planning & Operations
8	PPO 2	Production, Planning & Operations
9	SGT 1	Sustainability, Governance and Transformation
10	SGT 2	Sustainability, Governance and Transformation
11	SGT 3	Sustainability, Governance and Transformation
12	BSM 1	Business Strategy & Market Growth
13	BSM 2	Business Strategy & Market Growth
14	BSM 3	Business Strategy & Market Growth

Source: Author's Own

Table 4: Participants Groups

Product Creation & Strategy	Production, Planning & Operations	Sustainability, Governance & Transformation	Business Strategy & Market Growth
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Source: Author's Own

As explained in chapter 4 under section 4.8, the researcher followed a thematic analysis resulting in 402 quotations being created highlighting key commentary from participants and 98 codes (Appendix 4) suggesting themes that are interconnected in relation to Transformational leadership and sustainable innovation practices.

Through the process of data analysis, 13 themes emerged one of which is an emergent theme. Based on the conceptual framework developed at the end of chapter 2, there were 12 themes that occurred from the literature that connect to 5 key constructs also shown in the conceptual framework. The emergent theme “barriers to sustainable innovation” provides a different aspect to the research findings and related to the sustainable innovation practices construct. Below are the themes identified with emergent theme in bold highlighted in purple.

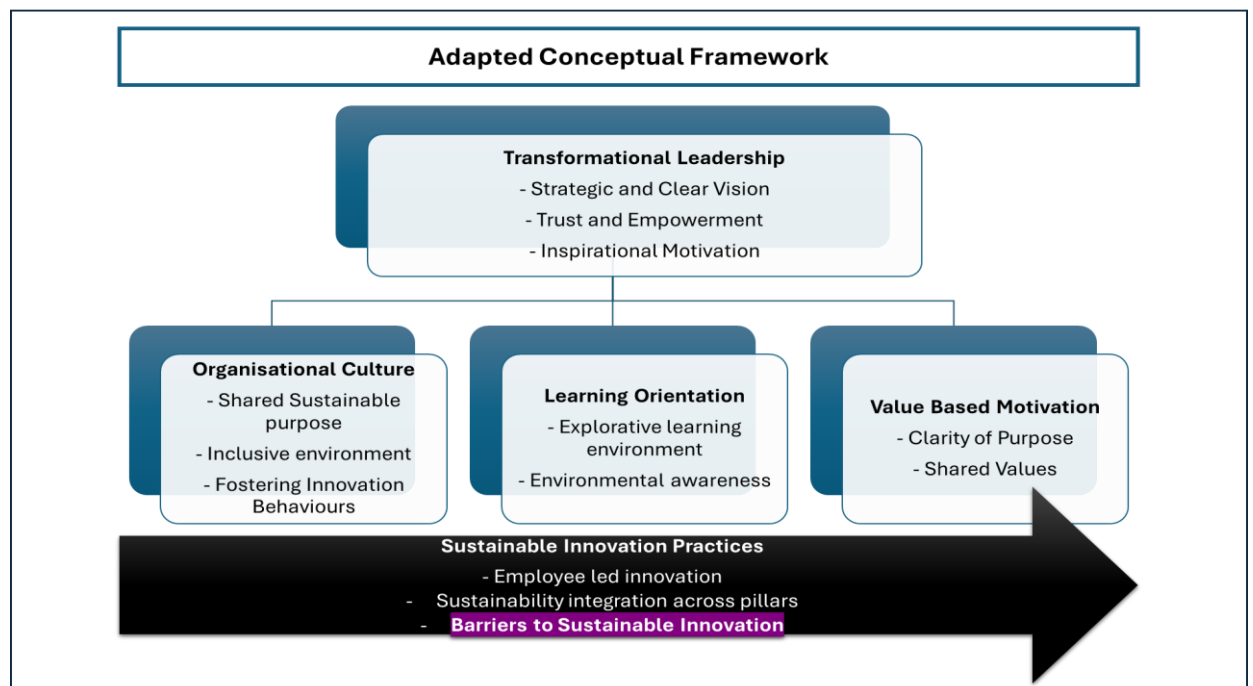


Figure: 4 Adapted Conceptual Framework: Summary of initial framework and new theme identified

Source: Authors Own

The research consists of 4 sub question that aim to answer or provide more context to the main research question initially explained in Chapter 1 and further elaborated on in chapter 3. The findings are presented by Sub-question as explained in chapter 3.

Findings Sub- Question 1(SQ1):

How do employees perceive the influence of transformational leadership on innovation?

The purpose of this question is to examine how employees perceive and interpret the impact of transformational leadership on innovation within their organisations or respective functions. It examines how employees perceive transformational leadership behaviours and how this influences their readiness to participate in or support innovative practices. The aim is to explore how leadership behaviours are experienced, are these behaviours seen as enabling or deterring innovation and to observe how employee's response to leadership efforts.

Participants were asked how leaders influence innovation in their teams/organisation and what behaviours encourages followers to implement or explore new innovations.

Before discussing the findings, the below table represents the key themes that relate to SQ1 as well as the frequency of mentions of the theme by each group. The frequency is using the following rating scale, some (low = 1-7 mentions) mentions by the group, more mentions (8-14 mentions), many(multiple) mentions by the group (15 and above mentions). Please refer to appendix for detailed quotations.

Table 5: SQ1 - Frequency of mentions by participant groups

SQ 1: Themes	Business Strategy & Market Growth	Product Creation & Strategy	Production, Planning & Operations	Sustainability, Governance & Transformation
Employee-Led Innovation	More	Many	Some	More
Explorative Learning Environment	More	More	More	Some
Fostering Innovation Behaviours	More	Many	Many	Many
Inspirational motivation	Some	More	Some	Some
Trust and Empowerment	More	Many	More	More

5.1.1. SQ 1 Theme 1: Employee-led Innovation

Freedom and autonomy were mentioned often by participants, they associated it with having a safe space to be innovative and creative without management interference but

rather guidance, being able to share ideas freely and an ear to listen. This came out strongly and consistently from the below participants.

"Leaders that give me the freedom to do what I need to do", "encourages thinking outside, outside the box". (PCS1)

"Current leadership, they kind of give me quite sufficient or significant level of independence, you know, in terms of, you know, being able to express myself, put my ideas". (PCS 2)

"Triggering that motivational factor within the people, allowing them to explore, be autonomous in what they do, and they'll come up with ideas". (SGT 1)

"Encouraging experimentation and just doing things that are out of the ordinary, right? I don't think she was a creative herself, but I think she had identified that I was a very creative being and she loved that about me". (BSM 1)

Additional elements that emerged from the research was psychological safety and trust of leaders. Employees felt more confident and encouraged by their leaders to take part in discussion around innovation and more willing to share their ideas. When a leader is open to employees experimenting and is approachable it leads to greater confidence amongst those they lead as well as open dialogue. A few examples from participants show this,

"People tend to start thinking out-of-the-box after time because they you're leading them out the box." (PPO 2) and

"I create a space for the team to feel free to be creative" (PSC 3)

"And then also recognition and celebration of innovative ideas. (PSC 4)

Even there is a someone who came with a better idea that is innovative". This indicates that by not shutting down their ideas, walking with them on the journey and encouraging thinking that is outside the box is beneficial to employees being more innovative.

Another aspect that participants experience in their organisations or the functions they work in, and through leadership behaviours is employee motivation. Motivating

employees to do more than the ordinary or what is expected and give recognition. Not just for the organisation but for themselves as well. Participants refer to how having a leader that believes in you and motivates you encourages motivation and willingness to contribute. Participants also highlighted having team level and individualised motivation. The responses across all groups touched on various transformational leadership behaviours that encourage idea creation. For example, idea creation highlighted by PCS 1, PPO 1, SGT 1 and speaking on leaders who encourage the sharing of ideas and creating platforms for creative thinking and experimenting. Having a safe space for innovation and creativity is formed through providing psychological safety- PCS 2, PPO 1. Having a leader that believes in you, makes you feel valued, heard, trusts you and listens to what you have to say, are similarities that were observed and found across all groups.

The only differences were based on which elements were emphasized amongst participants. BSM's focus was mostly on openness and creativity in leadership style, SCT was big on motivation through recognition and belief, whereas PPO's focus was on practical support, and PCS had a strong focus on idea creation and leaders' responsiveness.

5.1.1.1. Conclusion on SQ 1 Theme 1: Employee-led Innovation

The evidence of Employee-led Innovation presented similarities and minimal differences apart from functional focus areas.

Transformational leadership is seen through behaviours that are relational (encouragement and listening) and motivational (recognition and belief) and these came across in the researchers' findings. The importance of these behaviours came across the different groups from various participants. This shows that innovation is not merely a tool for strategy but requires psychological and emotional conditioning that is accepted by employees and created by leaders. The functional focus areas show the difference of how leadership is interpreted and received by looking at each group's operational lens.

5.1.2. SQ 1 Theme 2: Explorative Learning Environment

Participants across the various groups described how their environments consisted of learning that is not just encouraged and supported but also embedded in organisational

processes and leadership behaviours. The participants mentioned various aspects that have enabled explorative learning in their own environments and organisations. A shift in culture and a way of doing things was highlighted by

“Changing for the better and for the best of the company as it becomes more agile”. (PCS 2)

PCS 3 supports this in his statement:

“It’s more of a shift in terms of leadership moving away from how it has always been regarded as a traditionally in the past, to how now you, we tend to lead others by empowering them and creating a room enough for them to be able to grow”.

This speaks to the change in the culture, in addition PPO 1 highlight that his experience is of an environment that encourages learning and is conducive for learning.

Another insight that came through is that of leaders playing the role of teachers and enablers. Participants described them as being adaptable to situations and changes, provided guidance and allowed for growth to happen. An example is below,

“It has to do about vision, empowering your teams, driving innovation and talent development” (PCS 4)

“It encouraged an environment of a culture of learning the business, recognition and support” (BSM 1)

they also mention how mistakes in business are seen as learning opportunities and not punishment which emphasizes being an environment of learning orientated practices.

Two more insights could be shared as it came across in the analysis, namely learning as a shared journey where feedback is given or things are done together in collaboration with others which goes hand in hand with learning by doing and not just observing. SGT 1 speaks on encouraging job rotation to get hands on experience of what others in the team are doing, empowering them and a teachable moment of what others do in the department it also ensures business continuity.

" I ensured that everyone is rotational. Basically, they know how to do the next person's job. So, if tomorrow I'm not available, the next person can take over. So, you give everyone an opportunity to learn from the next one, "(SGT 1)

PCS 1 speaks of his own experiences and referred to how he got first-hand experience by being exposed and part of new technologies it gave him confidence that he can also do it.

" So, my lived experiences are that once I started to get hands on with these technologies, with what the company does from a sustainability perspective, I started to realize that it's actually doable." (PCS 1)

SGT 3 highlights how in their organisation they have discussion on what is happening, they share ideas and as a collective look at possible solutions this show collaborative learning within the organisation.

"The more you're able to talk through something, the more ideas or the more people are willing to be like, we can try this, we can look at this and we can it. Encourages more. I want to say collaborative, but more engagement and input from your team members, right? They're able to be more engaged in solution orientation as opposed to. Just doing the work because it's required. " (SGT 3)

Looking at the groupings as a collective, some similarities did appear despite functional focus being different as highlighted earlier. Adaptability was a common phrase and way of reacting to change across all participant groups and this was often linked to innovation, innovative thinking and sustainability objectives. Learning through exposure was also raised amongst participants by referring to how they were brought into settings where they began to understand the bigger picture and how or where they fit, tools and equipment's along with training were also made available to encourage work capabilities and improvement. Lastly a common element fast how leaders would facilitate and encourage growth of the participants or how participants as leaders would approach and encourage their teams to grown, examples are

"It was very clear she was trying to develop me for leadership" (BSM 1)

"Africa divisional vice president a very flexible individual and encourages, you know decision making that's quicker and agile" (PCS 2)

resulting in approaches to achieve that being improved.

Although there are similarities within the groups and across groups, functional approaches or focus on explorative learning differ slightly per group purely based on the insights shared by various participants. PCS group seem to encourage learning through new and improved technologies and exposure, PPO is more concerned with motivation and hands on teaching as a leadership responsibility and SGT is on organisational structure and cultural enablers.

5.1.2.1. Conclusions on SQ 1 Theme 2: Explorative Learning Environment

The findings suggest that explorative learning environments are not necessarily just formal training, however experimental exposure, adaptive cultural behaviours and collaborative learning should also be incorporated. Leaders are seen and expected to be enablers of explorative learning and not just give instructions. These elements highlight key factors under transformational leadership such as openness, collaborative or team level learning and motivation and agility which shows the transformative approaches amongst participants and the organisations they work for. The insights also highlight the contextual nature of learning when looking at the various functional learning approaches or focuses although some groups have an element of overlapping.

5.1.3. SQ 1 Theme 3: Fostering innovative behaviours

When looking at behaviours or elements that foster innovative behaviours participants spoke about leaders being the catalyst for the creation of innovation amongst those they lead and having a safe space to do so, PSC 2 & PSC 4.

" And if you have transformational leadership that that that work towards you know enhancing innovation, independence you create a I guess a room, a room for a whole lot of new ideas that that. That will help the business and ultimately work towards you know offering sustainable solutions to I guess for us to our customers through the products that we have you know in the market you know so and the products which we would like to introduce so creating that kind of space" (PCS 2)

"When you encourage people to and you support new ideas which fosters culture of innovation and colleagues sort of feel safe to challenge their norm and proposed bold solutions" (PCS 4)

These demonstrate same mentions made under the Employee-led innovation which shows some similarities from that perspective. Participants also spoke about innovation being embedded into their day-to-day task and the organisations they work for.

An example is insights shared by BSM 1: Innovation is part of *"everything we did"* showing sustainability and PCS 3: Spoke about how innovation is *"part and parcel of onboarding"* indicating how it's embedded within the organisation they work for.

Participants also spoke about how it requires one to change their mindset to be able to enable innovation or be more innovative BSM 2 & PSC 3.

"I transformed my mind to adapt, however, not to act in the same way, but to adapt to the environment while challenging the status quo and innovating." (BSM 2)

" We've seen a whole lot of changes that you know that has basically have been happening inside the company that has now started encouraging more flexibility, more innovation and you know, people are taking responsibilities of their work and people are taking decisions and actions, you know, faster and quicker than it has ever, ever, ever been since I started working here" (PCS 3)

Participant also made mention of new technologies such as AI that have or are yet to be integrated into processes and how managers were the ones requesting this upskilling and integration.

Some similarities were identified withing the same groups e.g. BSM speaks on innovation that is tied to change in mindset, leadership role modelling and sustainability efforts. In the PCS group transformational leadership and team level openness was emphasized a lot and lastly PPO & SGT spoke about how new innovations are driven or emerges from trust, autonomy, process improvement and openness. Similarities that were consistent across all the groups speaks to leadership being an enabler of innovation through motivation and support. Participants also speak about how the culture within their organisations and function is currently changing toward more innovation integration.

5.1.3.1. Conclusions on SQ 1 Theme 3: Fostering Innovative Behaviour

The evidence shared above shows that fostering innovative behaviours consists of various elements within the process of innovation. It speaks to culture, leadership behaviours, organisational systems and technological process improvements being part of daily activities shaped by mindsets and systems. Even though some approaches differ amongst the various groups, the similarity of fostering innovation is consistent.

5.1.4. SQ 1 Theme 4: Inspirational motivation

Participants refer to inspirational motivation as leadership that inspires through vision and emotion.

BSM 1 speaks of a leader that is

“Inspirational if they lead with heart”.

It's also about giving meaning and giving purpose. They further look at inspirational motivation from leaders as a leader who encourages them, gives them the opportunity to grow and cheer them on. It builds follower confidence. An example of that can be seen through the mentions from

“You want a leader that will cheer you. You want a leader that will create a room for you to learn, a room for you to grow, a room for you to learn. And at the same time, he's honest in his feedback”. PCS 3

Another behaviour that was mentioned is giving guidance without controlling followers, thus allowing them to be with inputs to ensure alignment.

SGT 1 agrees with this by giving the following example

“I think a leader that throws a problem to you and allows you time to process, share your idea and then they just add on to whatever solution you are bringing to the table and, but they help drive you in the right direction”.

It allows followers to have accountability, develop on a personal level and encourages creative thinking.

Similarities that were observed amongst the groups were vision, emotional connection and having purpose amongst group BSM. PCS focused on personal development and empowerment, having support and some form of mentorship from the leader. SGT highlights guidance to develop further and having freedom to grow and explore. All the groups in essence touched on being empowered through leadership motivation and not being controlled or micromanaged. They link inspirational motivation to having trust, visionary thinking and emotional intelligence. Another element that participants often referred to is having space to explore and come up with new ideas while having leadership support.

5.1.4.1. Conclusions on SQ 1 Theme 4: Inspirational motivation

Feedback or insights from participants based on the researcher's analysis on inspirational motivation is for leaders to have faith in their followers, to exhibit emotional intelligence and allow them independence but also be able to give guidance. Thus, participants do encourage leaders to guide within limits and to give support not instructions.

5.1.5. SQ 1 Theme 5: Trust and Empowerment

Feedback from participants is that trust is mostly built through inclusion and listening. Leaders who actively listen and treat others as equal or contributing collaboratively creates a safe and open environment for followers and leaders alike. The evidence suggests that having mentoring sessions, 1:1 discussion gives validation to employees. Providing clarity and giving a clear vision assist with getting buy in from others. Participants also mention that empowerment is given through enablement, shared ownership and freedom to explore.

Mentorship, confidence and allowing to be some of the key aspects that came through analysis of PCS.

"It's basically a leader that also inspires motivation and also empowers the team with a key vision and future of the company and the objectives the company needs to achieve in order for the company to sort of be sustainable and also one who supports the employees through change processes. (PCS 4)

" Even my boss actively supports innovation by sort of removing barriers and allocating resources and also giving you that opportunity to work as a leader and taking responsibility of your decisions and even though the decision. "(PCS 4)

PPO focused on knowledge sharing and having an open-door policy which allows for bouncing of ideas and inclusion in decision making.

"So, we've, you know, we've been brought in, and we've been made confidants, and we've been made part of the process" (PPO 1)

"I'm very open-door kind of person where people are free to come and suggest different things. (PPO 2)

Transformational specific leadership behaviours such as having a vision and sharing that is a form of empowering and this is what came across BSM through analysis of data. Common elements that came across in all groups was listening, motivating and ownership that builds trust and leads to employee empowerment.

5.1.5.1. Conclusions on SQ 1 Theme 5: Trust and Empowerment

Based on the researcher's analysis all groups shared that being heard, listened to, supported and allowed autonomy gave them a sense of empowerment. Through leaders including them in the organisations vision and objectives it made them feel trusted and valued as employees and that they had a better clarity of their purpose in the organisation.

5.2. Findings Sub- Question 2(SQ2):

How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing?

The purpose of this question is to explore how transformational leadership influences behaviours that support sustainability. The aim is to examine how transformational leadership promotes a sustainability-orientated culture, and approach by shaping employees' values and behaviours within manufacturing.

Participants were asked how leaders inspire commitment, encourage employees to prioritize sustainability efforts, and practices, and how it forms part of their function and processes.

The below table represents the key themes that relate to SQ2 as well as the frequency of mentions of the theme by each group. The frequency is using the following rating scale, some (low = 1-7 mentions) mentions by the group, more mentions (8-14 mentions), many(multiple) mentions by the group (15 and above mentions).

Table 6: SQ2 - Frequency of mentions by participant groups

SQ 2: Themes	Business Strategy & Market Growth	Product Creation & Strategy	Production, Planning & Operations	Sustainability, Governance & Transformation
Clairity of Purpose	Some	More	-	More
Shared Sustainable Purpose	Some	Many	More	Some
Shared Values	More	More	More	More

5.2.1. SQ 2 Theme 1: Clarity and Purpose

Participants did not make much reference to this theme. It only appeared amongst a few participants who linked it to sustainability communication and purpose driven leadership behaviour. Thus, through the data analysis done the researcher observed there was limited discussions on how purpose is cascaded.

5.2.1.1. Conclusions on SQ 2 Theme 1: Clarity of Purpose

This theme did not emerge with high frequency, however the limited reference made to it highlights the motivational role it plays.

5.2.2. SQ 2 Theme 2: Shared Sustainable Purpose

Most participants referred to how sustainability is a pillar of the organisation or and part and parcel of their strategies especially from the PPO and PCS groups. Various manufacturing organisations are making incremental (packaging, hybrid vehicles, new platforms for creation etc.) and radical (full electrification or carbon neutral products and manufacturing processes). Participants also highlight the role leadership plays in embedding sustainability into processes, systems and organisational culture. There's

also increased emphasize on having employee buy in and involvement through the creation of innovation desks, KPIs etc. to ensure sustainability beyond leadership influence and direction.

(BSM 1)

"So, I come from a a business that really sustainability played a big role in the business that we were in. And I think the reason for that was because we were always told that companies can't grow in the long term if they are depleting resources and damaging their environment, right. " (BSM 1)

PCS 1

"The company I work for is still committed to being an all electrified company. So, this is less than 10 years from now"" So being fully electrified means that we are targeting a 0 emissions or we want to be a carbon neutral company basically" (PCS 1)

"Sustainability has become the norm in a sense that you have to eat, breathe and and so forth and so forth," (PCS 1)

"We also we embed sustainability in our strategy where we ensure sustainability is part of our brand messaging and dealer engagement plans. Also advocate for sustainability KPIs in performance reviews or projects. Project evaluations" (PCS 4)

There are a big push....to also develop those electric vehicles. So, there's a big push to switch over to hybrids, to electrical vehicles and adjust operations.... You must incorporate sustainable practices because you know one world, we all live in it. We all want to continue to live in it. So, for me, I see, I see it as. That transformational leadership is one of the pillars of sustainability. So, I think it's been, it goes hand in hand, and you don't have the one without the other " (PPO 1)

"I think for me sustainability is key because that's that's the lifeline of our business." (PPO 2)

There's evidence of similarities within the various functional groups. PPO similarities are in terms of leadership placing importance on operational efficiency in the long term and sustainability is tied to agility, speed and being competitive. PCS groups highlight the organisations key strategy to electrification and carbon neutrality. It is outlined as both a technical and brand sub pillar for the organisation. There seems to be a sense of urgency to implement and comply based on insights shared. SGT looks at structural elements and focuses on environmental awareness and BSM highlights moral, employee, community and strategic importance. From an overall perspective all groups spoke about sustainability and its long-term importance, how it needs to be embedded in organisational culture and getting employee buy in. Differences can be distinguished by the degree of sustainability whether its incremental process or raw material changes or radical new product innovation and manufacturing processes.

5.2.2.1. Conclusions on SQ 2 Theme 2: Shared Sustainable Purpose

Sustainability was recognised by all groups as a key driver of innovation. Whether through new product creation, moral and cultural commitments, agile product delivery or strategic targets such as electrification. The researchers' findings allude to transformational leadership be more effective if aligned to strategy and operational task.

5.2.3. SQ 2 Theme 3: Shared Value

Feedback from the participant across the above mentions is that role modelling and ethical behaviours and leadership are an expression of shared value. Though very seldom, integrity and respect were also associated with this theme. Similarities are in line with the key take out from the findings. Acting as a role model "walk the talk", and leaders who display ethical behaviours are described to have a certain level of influence on employees.

"She was very ethical, and values driven. Her values aligned exceptionally with the company values" (BSM 1)

"You know, when leaders walk the talk, it builds trust and it reduces doubt. It's as simple as that." (BSM 1)

"it's a matter of being a role model in terms of ethical behaviours and integrity as well as so that people can follow you. It's critical in my role right now" (BSM 2)

"Consistently demonstrating integrity, also earning deep trust from the team."
(PCS 4)

" So basically, care stands for ethical responsibility for the people and the planet."
(PCS 4)

5.2.3.1. Conclusions on SQ 2 Theme 3: Shared Value

Shared value emerged as not so dominant amongst participants based on the researchers' findings. Employees associated transformational leadership as genuine and true due to leadership displaying ethical and respectful behaviours that contributes to innovation through moral clarity and purpose.

5.3. Findings Sub- Question 3(SQ3):

What transformational-leadership practices influence the integration of sustainability and innovation into manufacturing and organisational culture?

This question sets to explore specific leadership practices and behaviours that assist with embedding sustainability and innovation into organisational culture. The aim is to understand leadership influence on culture, systems and way of working. It also seeks to understand leadership supports integration of sustainability and innovation. Lastly it also explores any resistance that may occur in the process.

Participants were asked to reflect on their experiences and observations with leadership in their manufacturing environments, focusing on how transformational leadership influences innovation and sustainability.

The below table represents the key themes that relate to SQ3 as well as the frequency of mentions of the theme by each group. The frequency is using the following rating scale, some (low = 1-7 mentions) mentions by the group, more mentions (8-14 mentions), many(multiple) mentions by the group (15 and above mentions).

Table 7: SQ3 - Frequency of mentions by participant groups

SQ 3: Themes	Business Strategy & Market Growth	Product Creation & Strategy	Production, Planning & Operations	Sustainability, Governance & Transformation
Inclusive environment	More	Many	More	More
Strategic and Clear Vision	More	Many	More	Some
Sustainability Integration Across Pillars	Some	More	Some	More
Emerging: Barriers to Sustainable Innovation	Some	Some	Some	Some

5.3.1. SQ 3 Theme 1: Inclusive Environment

Participants shared diverse insights around this theme. The value of being included and being part off and allowing for space and autonomy comes across strongly across all participants. PPO 2 mentions giving emotional support and having empathy

"Emotionally, what they need to do their work first". (PPO 2)

PCS 4 highlights the importance of involving others in the initial stages of the process and have them actively participate e.g.

"Team must play an active role in brainstorm sessions". (PCS 4)

"And he took everyone into his confidence when he was working through the vision of the company where he wanted to see the company so" (PCS 1)

"It's a pattern that you've created a culture where they feel they are valued enough that they can just pop out any idea they have and see what happens next." (PCS 3)

"You want a leader that will cheer you. You want a leader that will create a room for you to learn.... He wants me to adapt and he empowers me, gives me as much information as I can so that I can do my work with independence, flexibility and confidence." (PCS 3)

"A leader that's a good listener will always create a platform for innovation. As soon as people feel heard, they are willing to speak." (PCS 5)

Additionally, another element that was mentioned was cross collaboration amongst various teams. Having good relationships amongst various functions can help reduce the burden and is another form of inclusion and team effort of being able to share ideas and solve problems as a collective. Another insight that was mentioned was around sharing the vision for all to see and understand. Not only are employees able to understand how and where they fit in, innovation can also be developed towards achieving the overall goal e.g.

"Whatever information or knowledge that I have, I try to give them so that anytime they have ideas, you know, they can link things to the bigger picture" (PPO 2)

"Leadership cascades the vision... our needs are considered" (PPO 1)

Leadership that is inclusive and links to the empowerment of employees, collaboration and psychological safety came through consistently amongst most groups. A leader who listens, creates space for growth and shares knowledge is seen as promoting an inclusive environment for all.

5.3.1.1. Conclusions on SQ 3 Theme 1: Inclusive Environment

This theme has emerged as a strong theme from the researcher's analysis, it's a theme that enables innovation and employee involvement. This can be seen in mentions from PCS and PPO. Although the way expressions were articulated vary in some instances the main message was consistent and clear, inclusive leadership enables creativity, sustains transformation and builds trust. This theme also supports SQ 1 & 2 that speaks on the behaviours that guide innovation culture and how it's portrayed.

5.3.2. SQ 3 Theme 2: Strategic and Clear Vision

Participants highlighted that a vision that has a greater impact on individuals if it is future orientated, linked to sustainability objectives and innovation and is clearly communicated and shared by leaders.

"A leader must articulate the vision.".... "It would make our lives easier because we know exactly what we're working with" (BSM 1)

"Clear vision set out and then ensuring that innovation is encouraged. So, where innovation is encouraged, there's individualized attention to people and there's focus on inspiring those people and ensuring that there's a clear vision."
(PCS 5)

"Bringing me into the vision and sort of the inspiration for where the company is going, what we're trying to achieve " (PPO 1)

" Vision of the business is communicated effectively throughout the organization itself. " (SGT 3)

They also mention how through sharing what the bigger picture is, connecting organisational goals to key functions and having clear expectations is valued. This shows that vision setting is much deeper than just providing a direction, but it requires employee buy in, inspiration and belief in it and alignment. The concept of articulating a clear vision that inspires and motivates as appreciated and welcomed across all groups. Differences are highlighted in what that vision means for each group.

5.3.2.1. Conclusions on SQ 3 Theme 1: Inclusive Environment

This is a dominant theme amongst participants. The researcher observes that groups PPO and PCS placed great focus on it. It plays a vital role in the creation of innovation, sustaining transformation and aligning teams within the organisations. A leader that can clearly communicate vision through inclusion, clarity and relevance is deemed more trustworthy and motivating.

This theme also supports SQ 1 & 2 in showing how leadership influences innovation through giving clarity on organisational direction and how it is acknowledged amongst employees.

5.3.3. SQ 3 Theme 3: Sustainability Across Pillars

This theme was barely touched on or referred to by participants in isolation. It was mostly mentioned in conjunction with other conversations on leadership and innovation. Thus, no further analysis was required. Researcher proposes it be combined or be a sub theme of strategic and clear vision.

5.3.3.1. Conclusions on SQ 3 Theme 3: Sustainability Across Pillars

This theme was not shared in silo and was not researched further.

5.3.4. SQ 3 Theme 4(Emergent): Barriers to Sustainable Innovation

Traditional way of doing things is a recurring theme that emerged from participants. Indicating mostly leaders' sentiments towards change initiatives. E.g.

"We've been doing things this way for 30 years", (PCS 3)

"Why fix it if it's not broken". (PCS 4)

Authoritarian management style and being used to having the last say was also considered a barrier for change by participants, here are some key words that were shared by participants e.g.

"Because I said so..." (SGT 3)

"Leaders who frustrate people... think they know everything" (PCS 4),

"Shoot down an idea..." (PCS 3)

"No room for discussion..." (SGT 3)

which sets limitations on idea sharing and proposals also resulting in demotivation of employees and leaders. Fear of change is also mentioned and was also associated with not fully understanding the need for change and why it must change some requiring convincing while others were still set on shutting down ideas

"Technology is scary... might replace their job" (PPO 1)

"Fear of letting go..." (SGT 2)

In addition, infrastructure, resources and financial constraints were also highlighted as a barrier by participants, indicating that it's not necessarily leadership or employees but other circumstances that also hinder innovation.

Resistance to change was common amongst all participants and came up in various ways. Leadership style also played a role in barriers towards change as shared by participants which is considered a big setback and demotivator for others. Innovation is deterred due to leaderships response and lack of support and not necessarily lack of idea creation or thinking from participants.

5.3.4.1. Conclusions on SQ 3 Theme 4(Emergent): Barriers to Sustainable Innovation

This theme emerged during the researchers analyses of the data. It explains why innovation tends fail even though there are positive factors such as strategies and structures in place to enable it. This theme compliments earlier themes discussed such as inclusive environment, strategic vision and empower showing the opposite effect of these elements lacking within organisations. This can also be seen as an enabler of sustainable innovation within manufacturing organisations.

5.4. Findings Sub- Question 4(SQ3):

In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

This question aims to discover how employees in manufacturing organisations interpret, understand and respond to the shift towards sustainability. How it is viewed, received and adopted in their roles and processes.

Participants were asked to reflect on how transformational leadership influences innovation and sustainability in manufacturing environments.

The below table represents the key themes that relate to SQ4 as well as the frequency of mentions of the theme by each group. The frequency is using the following rating scale, some (low = 1-7 mentions) mentions by the group, more mentions (8-14 mentions), many(multiple) mentions by the group (15 and above mentions).

Table 8: SQ2 - Frequency of mentions by participant groups

SQ 4: Themes	Business Strategy & Market Growth	Product Creation & Strategy	Production, Planning & Operations	Sustainability, Governance & Transformation
Environmental Awareness	Some	More	Some	Some

5.4.1. SQ 4 Theme 1: Environmental Awareness

Environmental awareness came through amongst participants as a concept that is not considered an afterthought but is part of current or future strategies by various manufacturing organisations. This speaks to the mindset of leaders where a participant mentions sustainability being a pillar of transformational leadership and not just compliance,

“That transformational leadership is one of the pillars is sustainability. So, I think it's been, it goes hand in hand, and you don't have the one without the other.”
(PPO 1)

Another participant spoke about ground water harvesting improvement projects that the organisation led as a way of giving back to the communities they operate in and looking after the environment from a sustainability element. Those projects were not a once off but is something that is still in use today by those communities,

“It's a groundwater harvesting and treatment projects. So, you build boreholes. They're solar powered boreholes” (BSM 1)

“Things that still benefit communities today”. (BSM 1)

More examples and evidence as shown in above Appendix xx speaks to the various initiatives and mindsets organisations have on this theme. Sustainability that is linked to innovation creation and innovative thinking comes across most groups. Another factor is the growing nature of culture awareness although it did not come through strongly amongst participants.

5.4.1.1. Conclusions on SQ 4 Theme 1: Environmental Awareness

According to the researcher's analysis of evidence, environmental awareness is linked to transformational leadership as sustainability is seen as a strategic requirement and moral obligation. The theme supports the research question as it comes across as part of organisational strategy.

5.5 Summary of Findings

The research explored the influence of transformational leadership on sustainable innovative practices within various functions within manufacturing organisations. Findings from various themes produced insights and observations into the influence or impact transformational leadership has on sustainable innovation practices.

Through the experiences and insights shared by participants, transformational leadership in relation to sustainability and innovation was shown in various ways. Based on the sub questions asked participants were able to share insights on the influence, behaviours and enablers of transformational leadership.

Transformational leadership emerged as an enabler of sustainable innovation. Leaders that display and encourage empowerment and trust, have a clear vision and is visionary orientated and adaptive and receptive of change indicate that they embrace and are able to influence sustainable ideas and innovation amongst those they lead and have embedded it in their strategies, products, processes and communities.

Transformational leadership behaviours such as listening, motivating (team or individual level) , role modelling, mentoring, coaching, guiding, having space to create and autonomy was identified and highlighted in the findings. These behaviours enabled innovation and sustainable practices within the organisation. It fosters innovative behaviours, creates an inclusive and explorative learning environment. It also assist leaders to have shared values across the organisation.

A new theme emerged which speaks to the barriers of innovation that can also be used to enable innovation. In addition, participants highlighted that some leaders and employees resist innovation creation even though strategies and structures are in place to promote sustainable innovation practices. Despite these barriers participants insights still showed a strong focus and drive towards sustainable innovation whether incremental or radical transformations.

The next chapter, chapter 6 discusses the research findings in relation to literature from chapter 2.

Chapter 6: Discussion

6.1. Introduction

In this chapter, the findings discussed in Chapter 5 are compared in relation to the literature review discussed in Chapter 2. The chapter follows the same format as Chapter 5, where each sub-question is discussed by theme and compared to the literature. Each section will follow the same format, beginning with the findings from Chapter 5, followed by literature reviewed in Chapter 2, and concluding with a combined discussion of the findings and the literature to reach a conclusion for each theme.

A new or emerging theme was identified and discussed in chapter 5, which required a different approach from that used for existing themes. The researcher used a systematic process to verify the emerging theme within existing literature. As a starting point, the researcher looked for the theme or words describing the theme in a different manner within the literature in Chapter 2 that might have been overlooked initially. The next step involved reviewing the publications of top three scholars in the theme area from the last 5 years. The final step was to search for the theme or related words within leading academic journals to any additional literature. Where no results emerged, the absence was interpreted as a potential gap. If any new literature emerged from these steps, it was incorporated into Chapter 2.

6.2. Discussion Sub- Question 1(SQ1):

How do employees perceive the influence of transformational leadership on innovation?

6.2.1. (SQ1) Theme 1: Employee-led Innovation

6.2.1.1. Recap of findings on (SQ1) Theme 1: Employee-led Innovation

The findings on this theme indicate that innovation should not be seen as solely a strategic tool but, a process that requires psychological and emotional conditions shaped by leadership. Transformational leaders encourage environments where employees can feel valued, trusted, and motivated. Therefore, promoting innovative thinking and idea creation freely across the various functions in the organisation.

Employee-led innovation grows under conditions where employees are given autonomy and space. Participants highlighted the importance of leaders allowing independence and room to innovate. Thus, freedom was linked to greater creativity, idea creation and

willingness to take the initiative. Leaders who provided guidance without interference created an environment where creativity came freely.

Organisations that promote openness to ask questions and have managers that are approachable to consult with came across as a strong theme. As it promotes confidence in employees and an environment for them to feel safe to share ideas. Participants valued a leader who motivates them and believes in them, which encouraged them to exceed expectations. Motivation and recognition on an individual and team level were both considered important amongst participants and should not just be seen as organisational requirement but that it also gives personal reinforcement and engagement. The key transformational behaviours that were perceived by employees to encourage employee-led innovation across all the groups were motivational (recognition and belief in employees) and relational (listening and encouraging).

6.2.1.2. Recap of literature on Employee-led innovation

The literature review provides a great understanding of what drives Employee-led innovation. Peng et al. (2021) state that transformational leadership provides a key mechanism that formulates the relational and psychological conditions required for employees to lead innovation initiatives. They describe it as having shared passion and vision, which gives employees a sense of purpose and willingness to contribute to ideas (Peng et al., 2021).

Mousa et al. (2025) extend this by showing that transformational leadership motivates employees to perform beyond what is expected, encourages recognition, freedom to create, and personal growth that inspires employee-led innovation. Begum et al. (2022) further argue that intellectual stimulation enables employees to challenge norms and engage in creative solutions, emphasizing the role of leadership in cultivating environments where innovation originates from employees themselves.

6.2.1.3. Discussion of the findings with the literature

The findings on Employee-led innovation highlight that innovation is not a tool for strategy from management rather it's a process that requires emotional and psychological conditions shaped by leadership. This aligns with the literature from Peng et al. (2021), who argue that transformational leadership drives collaborative innovation by giving employees a sense of purpose and willingness, to contribute to idea creation. Similarly,

Mousa et al. (2025) places emphasise on giving recognition being an important motivating factor, that develops into greater employee performance, which relates to the findings and comments from participants stated they need leaders who believe in them.

Another important dimension of transformational leadership is intellectual stimulation. Begum et al. (2022) state that this allows for employees to engage in creative thinking and solutions which is in line with participants sentiments on needed and valuing leaders who encourage autonomy and responsiveness.

Together, these elements confirm that employee-led innovation thrives under leadership behaviours that are motivational in a relational manner, thus creating a space for employees to feel empowered to innovate.

6.2.2. (SQ1) Theme 2: Explorative Learning Environment

6.2.2.1. Recap of findings on (SQ1) Theme 2: Explorative Learning Environment

The findings on this explorative learning environment as a theme came across strongly across all participant groups. Participants stated that learning should not just be supported or encouraged by leaders. It should be embedded in organisational systems and processes as well as behaviours displayed by leaders. A change in leadership culture was also highlighted in the findings, leaders are moving away from traditional leadership styles to a more empowering and creating space for growth approach.

Leaders were seen as giving guidance and being enablers, in addition to being adaptable to the ever-changing environments around them and lastly treating mistakes as opportunities or lessons to do better. Explorative learning was highlighted as a shared effort and journey and learning by doing. Adaptability was a strong element shared across all the groups and was linked to innovation and sustainability goals.

Overall, the key findings suggest that explorative learning environment is one that allows for exposure to experiment, collaborative practices and adaptive cultural behaviours. Leaders are expected to act as enablers of learning and agility which reflects transformational leadership's role in shaping and driving such environments.

6.2.2.2. Recap of literature on Explorative Learning Environment

Kehr et al. (2022) emphasize that situational and follower-dependent nature of transformational leadership calls for agility and empowerment that aligns with follower motivation. Chen et al. (2025) further argue that transformational leadership is specifically effective in the early stages of innovation, where creativity and adaptive learning are critical.

Ali et al. (2025) show that explorative learning combined with transformational leadership encourages innovation in manufacturing organisations, showing how leaders embed learning into processes and culture. Peng et al. (2021) support this by demonstrating just how passion and shared vision foster collaborative innovation, which mirrors the collective and experiential aspects of learning.

Mousa et al. (2025) extend this evaluation by demonstrating that transformational leadership balances personal and organisational outcomes, reinforcing recognition, growth, and motivation as integral to sustaining learning environments.

6.2.2.3. Discussion of the findings with the literature

According to the findings discussed in the previous section, explorative learning should be integrated into organisational processes and leadership styles in addition to support and guidance. This aligns with the literature from Kehr et al. (2022), who highlights transformational leadership should be adapted to follower motivations, thus reflecting the shift in culture described by participants toward empowerment and growth. Leaders' ability to be agile, act as enablers and treating mistakes as opportunities to learn and grow from resonates with Chen et al. (2025), who argue that environments that require adaptive learning and innovation are where transformational leadership is most effective.

Participants reiterated that collaboration and hands on learning is consistent with Peng et al. (2021), who shows that transformational leaders encourage creativity through clear vision and shared passion. Further to this Ali et al. (2025) reiterates that having explorative learning behaviours embedded into manufacturing process, allows employees to experiment and be creative. This highlights the feedback from participants, being exposed to new technologies and hands on teaching. Another element from the findings was on recognition, participants connected that to instilling confidence, and

motivation, this is supported by the literature from Mousa et al. (2025), who shares similar insights in how important sustainable learning environments are for innovation.

In conclusion, we can say that there are similarities between the findings and the literature. Explorative learning environments are promoted through collaboration amongst employees/teams, and it promotes openness and adaptability. To re-emphasize transformational leadership role in influencing innovation and sustainable outcomes, leaders are expected to encourage agility and development by integrating it into the culture of the organisation.

6.2.3. (SQ1) Theme 3: Fostering Innovative Behaviours

6.2.3.1. Recap of findings on (SQ1) Theme 3: Fostering Innovative Behaviours

The findings show that fostering innovative behaviours is identified as a catalyst for innovation, and innovation creation. Transformational leadership poses itself as a great leadership approach to foster innovation amongst individual employees as well as teams. It is closely related to leaders creating a safe space which was discussed in earlier sections.

Participants explained innovation as rooted in everyday organisational tasks and processes, with some participants emphasizing it as part of employee onboarding and sustainability goals. The findings also state that innovation was seen as to require a change in perspective in addition to the inclusion of new technologies like artificial intelligence AI which came up frequently amongst managers who were seeking employee and processes upskilling.

Similarities like leaders being seen as facilitators of innovation and creativity through support, motivation, new ways to improve and embracing innovation is seen across most of the groups. While specific functional approaches differ, the common theme was the integration of innovation into the culture of the organisation, influenced by leadership actions and process improvements.

6.2.3.2. Recap of literature on Fostering Innovative Behaviours

The literature shared in previous sections by Begum et al. (2022), Ali et al. (2025), and Chen et al. (2025) share the same sentiments about fostering innovative behaviours. They highlight the importance of leaders who promote experimentation, can adapt, and

provide a clear vision as behaviours that foster innovation holistically. This aligns with the idea that leaders create intellectual stimulation by allowing employees to explore and adopt innovative behaviours.

Supporting this, Lin (2023) states the importance of employee contribution, recognition and an environment that fosters innovation, while Yang et al. (2025) reveals that transformational leaders improve organisational innovation by shaping processes and dynamic capabilities. According to Mousa et al. (2025), innovation is encountered when leaders link social, financial, and environmental goals with employee growth and recognition.

6.2.3.3. Discussion of the findings with the literature

The findings on fostering innovative behaviours verify that innovation is not an isolated initiative but is part and parcel of organisational processes, daily tasks and sustainability objectives and leaders act as a catalyst by creating an environment that motivates employees and supports process improvements.

This aligns with the literature from Chen et al. (2025) who focuses on highlighting of innovation, adaptive behaviours and experimentation, Begum et al. (2022) and Ali et al. (2025) who emphasize leadership encouraging experimentation which are similar elements thoughts recognised under employee led innovation.

Participants emphasized recognition, support and openness as fostering innovative behaviours which echoes with Lin (2023), as well as incorporating innovation goals into organisational daily tasks Yang et al. (2025). Collectively, the findings and the literature support the idea that promoting innovative behaviour should go hand in hand with organisational culture.

6.2.4. (SQ1) Theme 4: Inspirational motivation

6.2.4.1. Recap of findings on (SQ1) Theme 4: Inspirational motivation

Participants experienced inspirational motivation as leadership that inspires through purpose, vision and motivation. They described leaders as encouraging and “leading with heart” thus giving purpose and meaning and building confidence. Participants also mention actions such as offering honest feedback, creating space for growing and learning as well as cheering employees on.

Inspirational motivation is further connected to leaders allowing employees to contribute and give ideas, encouraging personal growth with managers support, taking accountability and giving guidance without controlling. A few similarities emerged amongst the groups vision, empowerment, mentorship, guidance and freedom to grow.

Participants related inspirational motivation with trust, emotional intelligence and visionary thinking. They placed importance and value on leaders who provide safe spaces for creativity and exploration, encouraged creativity and allows employees to work independently as opposed to being micromanaged.

6.2.4.2. Recap of literature on Fostering Innovative Behaviours

Oke et al. (2008) define inspirational motivation as the leader's ability to articulate a compelling vision and encourage followers to adopt responsibility for shared goals. This perspective is reinforced by Mousa et al. (2025), who emphasise that inspirational motivation creates environments where employees feel empowered to grow and contribute, linking motivation to both personal and organisational development.

Kehr et al. (2022) notes that the impact of inspirational motivation is depended on leadership actions in conjunction with follower motivation. Peng et al. (2021) demonstrates that it encourages collaborative creativity through shared purpose amongst the team and motivation.

Chen et al. (2025) add that inspirational motivation plays a crucial role in the initial phases of novelty, where flexibility and inspiration are needed to sustain creativity and commitment. Salas-Vallina et al. (2020) further support this by stating that transformational leaders inspire by sharing a vision that is both appealing and encouraging, thereby strengthening follower support and commitment.

6.2.4.3. Discussion of the findings with the literature

Participants highlighted that they valued leaders who inspire through, purpose, emotional connection and vision, while also providing them with space for growth and independence. This is like the transformational leadership dimension explained by Oke et al. (2008), who describe inspirational motivation as the leader's ability to articulate a compelling vision and encourage followers to take responsibility for shared goals.

Participants were quoted as saying a leader who cheers them on and “leads from the heart” displays aspects of building confidence and motivating employees Mousa et al. (2025). This resulting in employees contributing beyond what is expected of them and contributing to personal growth.

Participants also mention that leaders who allow employees and followers to contribute to idea creation and give guidance without control resonates with Kehr et al. (2022), who argue that inspirational motivation is most operative when leadership actions are altered to follower needs. Similarly, Chen et al. (2025) highlight the significance of flexibility and inspiration in the early phases of innovation, which mirrors participants’ descriptions of leaders fostering accountability and creative thinking. The emphasis on vision and emotional appeal is further supported by Salas-Vallina et al. (2020), who show that transformational leaders inspire by sharing visions that are both interesting and encouraging, reinforcing follower confidence and commitment.

Additionally, Peng et al. (2021) contributes to this by stating that inspirational motivation encourages collective innovation through shared purpose and motivation. The findings and the literature have similarities and indicate that inspirational motivation involves emotional motivation as well as visionary leadership in conjunction with empowerment, agility and trust. Leaders that guide without controlling and inspire through emotional intelligence and vision create settings where followers feel inspired, driven, and capable of going above and beyond expectations.

6.2.5. (SQ1) Theme 5: Trust and Empowerment

6.2.5.1. Recap of findings on (SQ1) Theme 5: Trust and Empowerment

The findings indicate that trust is mainly focused through listening, collaborative initiatives and inclusion. Participants highlighted leaders who treat employees as equal, create a safe space and listens actively enable honesty and validation. In addition, participants highlighted the importance of mentoring and having individualised conversations outside the team as actions that builds trust and contribute to a boost in confidence.

Additionally, participants explained that through empowering employees it enables the freedom to explore and be creative in addition to giving a sense of shared ownership. PCS participants stressed mentorship and confidence building, while PPO participants

focused on knowledge sharing and open-door policies that encourage idea exchange and inclusion in decision-making. BSM participants linked empowerment to transformational behaviours such as vision sharing, which provides clarity and purpose.

Common themes that emerged across all groups comprised of motivating and listening. These actions came across consistently and relates to giving employees a sense of value, freedom, belonging and empowerment.

6.2.5.2. Recap of literature on Trust and Empowerment

Salas-Vallina et al. (2020) highlight that empowerment arises when leaders share vision and provide encouragement, linking trust to follower confidence. Peng et al. (2021) show that shared ownership and enthusiasm foster empowerment, reinforcing the role of leaders as enablers. Boies et al. (2015) show that transformational leadership fosters team creativity by creating psychological safety and openness, which builds trust among followers. Lin (2023) highlights recognition and employee input as essential for empowerment, linking inclusion and knowledge sharing to trust.

Additionally, Mousa et al. (2025) argue that empowerment is strengthened when leaders connect organisational goals with employee growth, embedding trust into culture. Peng et al. (2021) demonstrates that transformational leadership encourages shared objectives, contributing to team-level sustainability and innovation focus, which reflects empowerment through shared ownership.

Oke et al. (2008) identify inspirational motivation as a mechanism for building confidence and trust through vision and guidance. Bass & Riggio (2006) emphasise that transformational leadership is rooted in independence, self-motivation, and trust, reinforcing empowerment.

6.2.5.3. Discussion of the findings with the literature

The findings indicate that trust is built through inclusion, collaboration and trust, with leaders who create a safe space and providing mentoring are the actions shared by participants. These resonate with the literature from Boies et al. (2015) demonstrate that transformational leadership builds psychological safety and openness, which mirrors participants' accounts of leaders enabling honesty and validation. Similarly, Lin

(2023) underscores recognition and employee input as central to empowerment, aligning with participants' emphasis on knowledge sharing and open-door policies that encourage idea exchange.

Mentorship and confidence mentioned by participants reflect elements of individualized consideration, where leaders show support and empathy for employee growth (Mousa et al., 2025), the focus placed by participants on decision making and inclusion shares some similarities mentioned in the literature by Salas-Vallina et al. (2020), who highlight that empowerment arises when leaders share vision and provide encouragement, linking trust to follower confidence. The emphases placed on vision sharing corresponds with Peng et al. (2021), who shares that motivation and sharing of vision encourage collaborative innovation and sustainability in addition to promoting empowerment through shared ownership.

Listening and motivation appeared across all groups amongst participants. Key actions or behaviours that is required from leaders are freedom and a sense of belonging. Although current literature focuses on inclusion and a form of shared ownership, earlier work by scholars recognised vision and trust as inspirational motivation, which is still a requirement even today as indicated by participants.

6.3. Discussion Sub- Question 2(SQ2):

How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing.

6.3.1. ((SQ2) Theme 1: Clarity of Purpose

6.3.1.1. Recap of findings on (SQ2) Theme 1: Clarity of Purpose

Participants did not make much reference to this theme. It only occurred amongst a few participants who linked it to sustainability communication and purpose driven leadership behaviour. Thus, there was limited to no discussions on how purpose is cascaded from participants.

6.3.1.2. Recap of literature on Clarity of Purpose

Transformational leaders focus on establishing common objectives and shared vision that focuses on the team (Kim et al., 2021). Transformational leader/leadership that

focuses on environmental objectives influence team-level sustainability behaviours through psychological and emotional mechanisms such as clear vision and objectives and shared purpose (Peng et al., 2021; Nevo et al., 2020). In contrast, Van Knippenberg & Sitkin (2013) caution that shortcomings such as unreliable assessment methods, increased confusion between behaviours of leaders and results and lastly theoretical incoherence hamper the transformational leadership research.

6.3.1.3. Discussion of the findings with the literature

The findings show that clarity of purpose was not a dominate theme amongst the participants, with very little reference made to it. However, this contrast with literature, which highlights clarity of purpose as instrument of transformational leadership. Scholars state that transformational leaders generally cascade vision across the organisation, thereby aligning organisational and individual objectives (Kim et al., 2021). The lack of reference on this theme shows the gap between lived experience and theory.

The reason for this could be because employees are unable to relate the vision shared by leaders on overall sustainable objectives to their daily task. This supports Knippenberg & Sitkin's (2013) critique on transformational leadership studies, where outcomes are often confused with leader behaviours. Which question whether employees absorb clarity of purpose.

In parallel there are a few mentions whereby participants linked clarity of purpose to sustainable communication which aligns to literature from Nevo et al. (2020) and Peng et al. (2021), which indicates that when followers understand how their work fits into the bigger picture, followers show innovation creation. Therefore, the results imply that although purpose of clarity has great theoretical potential, its actual use in manufacturing settings may vary depending on how well leaders convert strategic intent into operational behaviours.

6.3.2. (SQ2) Theme 2: Shared Sustainable Purpose

6.3.2.1. Recap of findings on (SQ1) Theme 2: Shared Sustainable Purpose

Sustainability came across as a strong theme from participants. They explain it as being a core pillar for their organisation and is also seen as an enabler of innovation. Participants further shared how it is part of the organisations strategy and highlighted how it includes incremental changes (e.g., packaging adjustments, hybrid vehicles, new

platforms for creation) and radical innovations (e.g., full electrification, carbon-neutral products, and manufacturing processes)

Leadership was brought up a few times by participants, and they see leaders as being the key drivers responsible for embedding sustainability into organisational culture and processes. In addition, participants also emphasized that this requires buy in and involvement from employees for it to extend beyond leadership influence. Mechanisms such as innovation desks, sustainability-related KPIs, and participatory initiatives were cited as ways to ensure long-term integration and accountability.

Overall, all groups mentioned the importance of sustainability in the long term and the need for it to be incorporated into organisational culture. The differences amongst the groups were in relation to the degree of improvement, radical or incremental.

6.3.2.2. Recap of literature on Shared Sustainable Purpose

Recent studies emphasise that sustainability has become a strategic pillar for organisations, requiring leaders to embed it into culture and long-term objectives. Green transformational leadership specifically utilises shared vision and values to mobilise employees toward collective environmental goals (Çop et al., 2021; Mousa et al., 2025).

Scholars highlight that sustainability initiatives are most effective when cascaded across organisational levels, fostering employee participation and commitment beyond executive direction (Ali et al., 2025).

Furthermore, transformational leadership is shown to influence team-level sustainability behaviours through clear objectives and shared purpose, cultivating a culture of long-term transformation (Peng et al., 2021; Janjua et al., 2024).

6.3.2.3. Discussion of the findings with the literature

The findings reveal that sustainability was constantly recognised by participants as a core organisational pillar and a key enabler of innovation. This supports with recent literature that positions sustainability as central to organisational strategy and culture, requiring leaders to embed it into long-term objectives (Çop et al., 2021; Mousa et al., 2025). Participants highlighted both incremental changes (e.g., packaging adjustments,

hybrid vehicles) and radical innovations (e.g., electrification, carbon-neutral manufacturing), which reflects Ali et al. (2025), who distinguish between incremental and radical green innovation and emphasise the importance of leadership coherence in achieving these outcomes.

Leadership is identified as a key driver for sustainability particularly in embedding it into organisational culture and processes. This resonates with Peng et al. (2021), who show that transformational leadership impacts team-level sustainability behaviours through shared purpose and clear objectives. In addition, employees emphasized the need for employee buy in. This emphasis supports Janjua et al. (2024), which states that shared vision is stimulated through encouraging employee involvement.

Overall, the literature and the findings confirm that sustainability is important for strategy but also important to be part of organisational culture.

6.3.3. ((SQ2) Theme 3: Shared Values

6.3.3.1. Recap of findings on (SQ1) Theme 3: Shared Values

Shared values was not a recurring theme and had limited discussions on it. However, it highlighted important behaviours such as demonstrating ethical behaviours and role modelling as a leader which participants see as building trust. The mention leaders “walking the talk,” where integrity is involved and they see it as a guide for transformational leadership. Although it didn’t come across as a dominant theme this shows that shared value contributes to innovation.

6.3.3.2. Recap of literature on Shared Values

Green transformational leadership specifically concentrates on utilising a common vision and values to inspire and motivate staff members toward group environmental goals (Çop et al., 2021).

Such leaders promote a welcoming and inclusive workplace environment that encourages staff members to actively participate in the company’s sustainability initiatives (Mousa et al., 2025).

Transformational leadership that focuses on environmental objectives influences team-level sustainability behaviours through psychological and emotional mechanisms such as clear vision, objectives, and shared purpose (Peng et al., 2021).

6.3.3.3. Discussion of the findings with the literature

Shared values was not a dominant theme, role modelling and portraying ethical behaviours did however come through from some participants and agrees with some of the literature mentioned that positions values as central to green transformational leadership (Çop et al., 2021). Participants' acknowledgement that integrity and respect build trust aligns with Mousa et al. (2025), who state that encouraging an environment that is inclusive and promotes employee involvement reinforce shared values.

Additionally, Peng et al. (2021), who demonstrate that shared values identified through specific objectives and a common purpose increase team cohesion and sustainable behaviours, are reflected in the connection participants drew between moral clarity and innovation.

6.4. Discussion Sub- Question 3(SQ3):

What transformational-leadership practices influence the integration of sustainability and innovation into manufacturing and organisational culture?

6.4.1. (SQ3) Theme 1: Inclusive environment

6.4.1.1. Recap of findings on (SQ1) Theme 4: Inclusive environment

Participants mention the importance of being included, having space, and autonomy. They also speak on emotional support from leaders and explained how it enables employees to perform better. Cross collaboration and involvement in idea creation and brainstorming are also elements that came across all groups.

Another element of an inclusive environment as mentioned by participants is shared vision, empowerment and safety which helps employees align with organisational objectives and enable creativity

6.4.1.2. Recap of literature on Inclusive environment

Transformational leadership entails developing not only professional but personal growth of followers through fostering deeper levels of motivation and engagement. It assists their followers to think critically and to act with purpose. Collectively, these authors present transformational leadership as a process that blends developmental goals with ethical impact, establishing it as a driving force behind long-lasting organisational transformation. (Siangchokyoo et al., 2020; Bass, 1985; Bass & Riggio, 2006).

Individualized consideration centres personal growth and needs often seeing leaders providing, counselling, mentorship or coaching to support their needs. It also demonstrates that leaders care, support and show empathy for employees' growth and development. (Oke et al., 2008; Mousa et al., 2025) Transformational leaders achieve this by displaying intellectual stimulation and by availing themselves to coaching to further develop personal growth and display individualised consideration. (Bass, 1999; Avolio & Bass, 1995). Transformational leaders focus on establishing common objectives and shared vision that focuses on the team while also offering tailored support to each member based on their needs.

This dual focus demonstrates a leadership approach that supports and encourages followers to achieve company-wide environmental sustainability objectives, ultimately cultivating a culture of sustainable long-term transformation. (Kim et al., 2021; Janjua et al., 2024)

6.4.1.3. Discussion of the findings with the literature

The findings on inclusive environment from participants closely align with the literature on transformational leadership. Important mentions by participants were on empathy from leaders towards employees, creating a space to foster innovation and emotional support. These elements speak to one of the dimensions of transformational leadership, which is individualized consideration, it focuses on coaching and mentoring as well as care for the employees (Oke et al., 2008; Mousa et al., 202).

Participants also spoke about the importance of leaders cascading down the vision of the company and linking it to the individual. Kim et al. (2021) state that transformational leaders inspire followers through shared vision and clear goal thus enabling alignment

and empowerment of employees. This correlate with the sentiments shared by participants. Further to this cross collaboration and involvement was also highlighted by participants which resonates with literature which highlights that inclusion and trust is enabled by transformational leadership through supportive behaviour.

As a result, both literature and the findings view transformational leadership as mechanism that enables inclusion and trust through enabling innovation, providing a safe space and building trust. This reinforces the argument that inclusive environments are an important element through which transformational leadership drives sustainable innovation within manufacturing settings.

6.4.2. (SQ3) Theme 2: Strategic and Clear Vision

6.4.2.1. Recap of findings on (SQ1) Theme 4: Strategic and Clear Vision

This came across as a dominant theme amongst participants, they indicated that they value vision that is future orientated and shows a clear link between innovation and sustainability. Clear communication of organisational direction inspires and motivates employees and builds trust. It plays a vital role in the creation of innovation, sustaining transformation and aligning teams within the organisations.

This theme also supports SQ 1 & 2 in showing how leadership influences innovation through giving clarity on organisational direction and how it is acknowledged amongst employee and portrays similar behaviours that foster transformational leadership.

6.4.2.2. Recap of literature on Strategic and Clear Vision

Vision-setting is not only directional but motivational, requiring employee buy-in and belief (Kim et al., 2021). By linking shared objectives to sustainability and innovation, leaders cultivate trust, empowerment, and long-term transformation (Peng et al., 2021; Janjua et al., 2024).

6.4.2.3. Discussion of the findings with the literature

The findings on this theme are aligned to the literature in chapter 2 around transformational leadership. The importance of cascading vision came through again as also seen in earlier discussions. Participants link it to the leader's ability to inspire belief

and motivation through having common goals and clarity of purpose (Kim et al., 2021). Vision setting is not just about management giving direction but also requires trust in what you say from employees, inclusion in initiatives and alignment.

6.4.3. (SQ3) Theme 3: Sustainability Integration Across

6.4.3.1. Recap of findings on (SQ1) Theme 4: Sustainability Integration Across Pillars

This theme was not as visible as the other in discussion. It was mostly mentioned in conjunction with other conversations on leadership and innovation. Thus, no further analysis was required.

6.4.3.2. Recap of literature on Sustainability Integration Across Pillars

Sustainability extends beyond environmental considerations, it encompasses social and economic dimensions as well, therefore requiring a balance between the three is a requirement when looking at actions to develop and maintain sustainability within organisations. (Silvestre et al., 2022)

Challenges brought by global sustainability call for a new leadership approach and necessitates leaders to develop strategies aimed at achieving and sustaining sustainability. (Sajjad et al., 2023; Çop et al., 2020; Peng et al., 2021; Castellano et al., 2022)

Transformational leader/leadership that focuses on environmental objectives influence team-level sustainability behaviours through psychological and emotional mechanisms such as clear vision and objectives and shared purpose. (Peng et al., 2021)

6.4.3.3. Discussion of the findings with the literature

The literature on this theme is a repetition of from previously discussed themes. Aligning to findings that this theme shows integration of sustainability into a bigger scope of leadership and innovation and should not be a standalone theme.

6.4.4. (SQ3) Theme 4: Emerging: Barriers to Sustainable Innovation

6.4.4.1. Recap of findings on (SQ1) Theme 4: Emerging: Barriers to Sustainable Innovation

Participants also highlighted a few barriers to sustainable innovation. It is an emerging theme and was not part of the initial themes. A recurring concept was participants mentioning comments like this is the traditional way of doing things, why fix what's not broken often showing leaders resistance to change. Authoritarian leadership style was also mentioned amongst a few participants which results in the limitation and demotivation to share new ideas with such leaders.

Fear of change was also mentioned which was linked to lack of understanding of new ideas and technologies and might require convincing for all employees to be on board and buy in to the idea as it is also linked to fear of losing their jobs because of this new technology. Resource and structural constraints were also raised, participants mentioned limited support from external stakeholders, finances as well as infrastructure as.

Overall, the major barriers were identified as leaderships response to innovation and fear of change, which shed some light on why innovation may fail in the presence of structures and strategies including sustainability and innovation.

6.4.4.2. Recap of literature on Emerging: Barriers to Sustainable Innovation

Stornelli et al. (2021) highlights in their study that as much as there are certain drivers there are certain barriers that prevent innovative practices, these barriers include regulatory system gaps, organizational constraints and government initiatives that fail to incentivize change and thus impacting the entire adoption process.

In addition, Durmusoglu et al. (2018) support this and highlights the internal barriers such as organisational culture, finances, and nature of human beings as well as external barriers such as raw materials, and government regulations can impact innovation creation. However, Innovation hurdles do not always stop businesses from delivering innovative services; instead, some barriers can become catalysts that increase the likelihood of adopting new ideas. The findings also show that transformational leadership

helps reduce the negative effects of internal obstacles on process, strategic, and behavioural aspects of internal service innovativeness (Durmusoglu et al., 2018).

6.4.4.3. Discussion of the findings with the literature

The findings on barriers to sustainable innovation resonate with the literature, which agrees that often innovation fails not because of lack of innovation but constraints and resistance. Participants mention the traditional way of doing things and authoritarian leadership styles as barriers which is reflected by Durmusoglu et al. (2018), where entrenched behaviours and hierarchical management limit creativity and demotivate employees. Similarly, the fear of change expressed by participants aligns with the literature's recognition of human factors as obstacles, including hesitation about new technologies and fears over job security.

Resource and structural constraints raised by participants, such as infrastructure, finances and external factors reiterate the sentiments shared by Stornelli et al. (2021) in addition to gaps in government policies. These findings show that systematic factors and employee behaviours are two dimensional barriers. The literature however suggest that transformational leadership can alleviate these barriers through encouraging trust, inclusion and strategy (Durmusoglu et al., 2018).

The findings indicate that despite strategic vision and structures to enable innovation within the organisation, innovation creation can still be deterred. This emphasizes the requirement of leadership approaches that actively address fear, authoritarian leadership style, and resource constraints in addition to fostering vision and inclusivity in order to support sustained innovation.

6.5. Discussion Sub- Question 4(SQ4):

In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

(SQ4) Theme 1: Environmental Awareness

6.5.1.1. Recap of findings on (SQ1) Theme 4: Environmental Awareness

Environmental awareness is considered a strategic requirement by most participants. They mention that it should form part of organisational culture and practices. One participant explained it as a pillar of transformational leadership and presents moral

obligation. Few participants gave examples of environmental awareness projects that are within their organisations, or they are a part of or leading, they also used words like “I am proud” or “I brag” as a sense of feeling good about making a difference.

Across all the groups, sustainability was mentioned and was consistently linked to organisational culture awareness and innovation creation., reiterating the role it plays in leadership mindset and strategy of the organisation.

6.5.1.2. Recap of literature on Environmental Awareness

Environmental transformational leadership was first introduced by Robertson and Barling in 2017 as a recent concept of transformational leadership derived from the transformational leadership theory. They describe it as a form of transformational leadership that focuses on advancing green and pro-environmental efforts. (Robertson & Barling, 2017)

Green transformational leadership... specifically concentrates on utilizing a common vision and values to inspire and motivate staff members toward group environmental goals. (Çop et al., 2021)

Such leader promotes a welcoming and inclusive workplace environment that encourages staff members to actively participate in the company's sustainability initiatives. (Ali et al., 2025)

Transformational leader/leadership that focuses on environmental objectives influence team-level sustainability behaviours through psychological and emotional mechanisms such as clear vision and objectives and shared purpose. (Peng et al., 2021)

6.5.1.3. Discussion of the findings with the literature

The findings on environmental awareness align with the literature especially on green transformational leadership. In the findings participants defined sustainability as a pillar of leadership and gave examples of projects and initiatives within their organisations. This aligns with the literature which encourages leaders to embed environmental goals into organisational strategy and culture (Robertson & Barling, 2017; Çop et al., 2021).

Long-term community advantages and innovation are closely tied to sustainability, which aligns with research on transformational leadership showing that leaders who inspire employees through shared values, inclusivity, and common goals can effectively promote environmental initiatives (Ali et al., 2025; Peng et al., 2021).

Both conclusions indicate that environmental awareness is essential to transformational leadership. It serves as both a strategic requirement and moral obligation, allowing organisations to align sustainability and innovation and promote organisational cultures that support this transformation.

6.6. Conclusion

This chapter compared findings in chapter 5 to the literature in chapter 2. Each sub-research question and theme were reviewed to have a better understanding of the influence transformational leadership has on sustainable innovation practices.

Conclusions from Sub research question 1: How do employees perceive the influence of transformational leadership on innovation?

The observation made regarding transformational leadership, is that it is a catalyst for innovation because it inspires trust, motivation and psychological safety. A leader who recognises employees, encourages innovation of new ideas, listen to and empower employees and embeds innovation into organisational tasks, is considered a transformational leader. Innovation tends to flourish when leadership behaviours are inspiring, supportive and relational.

Conclusions from Sub research question 2: How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing?

Transformational leadership is seen as enabling sustainability by incorporating organisational strategy and culture into it. Leaders who connect sustainability with shared ownership, can get employee buy in and include it into daily operations are seen as a driver of sustainability. Sustainability should not be viewed as a structure but as a pillar that requires both radical and incremental innovation, supported by employee involvement and leadership clarity.

Conclusions from Sub research question 3: What transformational leadership practices influence the integration of sustainability and innovation methods into manufacturing organisations' culture?

Being able to communicate a clear vision, empower employees to contribute, and create an inclusive environment are considered key practices. Leaders who include employees in decision making, share purpose, and can align individual growth requirements with organisational goals are viewed as motivating and more trustworthy. These maintain transformation and make it part of the culture of innovation. Some barriers to innovation exist, but they can also be seen as enablers when buy-in is received and clearly communicated.

Conclusions from Sub research question 4: In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

There's an increase in awareness amongst manufacturing organisations on sustainability, and they view it as an important part of innovation and leadership mindset and behaviours. Environmental awareness is treated as a strategic requirement and a moral responsibility. Manufacturing organisations view sustainability as linked to innovation creation and cultural awareness, although the level of integration varies per organisation.

Overall Answer to the Main Research Question:

Transformational leadership influences manufacturing's adoption of sustainable innovation practices by creating cultural, strategic and relation conditions for change. Leaders within manufacturing organisations inspire employees through empowering them, trust and shared vision. Sustainability is embedded into the culture of the organisation and aligns innovation with long term objectives. Transformational leadership is a key driver behind sustainable innovation in manufacturing because it offers the means to overcome obstacles including resistance to change and resource constraints.

7. Chapter 7: Conclusion

7.1. Introduction

The chapter presents the overall outcome derived from the discussion in chapter 6. It will address the main research question as well as the sub-questions introduced in chapter 1. The themes in the conceptual framework in chapter 2 has been confirmed with addition of 1 new theme which was added to the adapted framework in chapter 5. The chapter will also present the research contribution and limitations for future research.

The study explores the influence of transformational leadership on sustainable innovation practices in manufacturing.

7.2. Principal theoretical conclusions

7.2.1. Principal theoretical conclusions: Sub-research question 1: How do employees perceive the influence of transformational leadership on innovation?

Peng et al. (2021) argue that transformational leadership generates vision and shared purpose, which encourages a sense of eagerness and purpose among employees to contribute to idea creation. This supports Mousa et al. (2025), who emphasize that recognition, freedom to create, and personal growth are key mechanisms through which employees are motivated to perform beyond what is expected. Begum et al. (2022) further highlight intellectual stimulation as a critical dimension, enabling employees to challenge standards and partake in creative problem-solving, thereby embedding innovation into organisational processes.

Collectively, the literature demonstrates that transformational leadership influences innovation by fostering autonomy, trust, and psychological safety. Leaders who articulate compelling visions (Peng et al., 2021), provide recognition (Mousa et al., 2025), and stimulate creative thinking (Begum et al., 2022) establish conditions where employee-led innovation can thrive. The theoretical conclusion is that innovation is not imposed as a strategic tool but arises gradually through leadership behaviours that empower employees, making transformational leadership a catalyst for embedding innovation into organisational culture.

7.2.2. Principal theoretical conclusions - Sub-Research Question 2: How does transformational leadership shape the values and behaviours that encourage sustainability within manufacturing?

Sustainability is regarded as a strategic pillar incorporated through transformational leadership. Green transformational leadership initiatives encourage employees toward collaborative environmental goals by supporting organisational culture, values and shared vision (Çop et al., 2021; Mousa et al., 2025). Peng et al. (2021) and Janjua et al. (2024) show that leaders influence team-level sustainability behaviours through psychological and emotional methods such as shared purpose and clear vision, promoting long-term transformation.

The theoretical conclusion is that transformational leadership shapes sustainability by embedding ethical influence, shared vision, and inclusivity into organisational values and behaviours. By aligning individual motivation with collective environmental objectives, leaders ensure sustainability is understood as a moral obligation and strategic necessity, central to manufacturing's long-term transformation (Çop et al., 2021; Peng et al., 2021; Janjua et al., 2024).

7.2.3. Principal theoretical conclusions - Sub-Research Question 3: What transformational leadership practices influence the integration of sustainability and innovation methods into manufacturing organisations' culture?

The following elements empowerment of employees clearly communicated vision, inclusivity, and collaboration are seen as practices most influential in embedding sustainability and innovation. Oke et al. (2008) and Bass & Riggio (2006) highlight the four dimensions of transformational leadership: idealised influence, inspirational motivation, intellectual stimulation, and individualized consideration as mechanisms that align organisational goals with employee development.

Boies et al. (2015) and Lin (2023) emphasize psychological safety, recognition, and employee contribution as essential for trust and empowerment, reinforcing integration. At the same time, barriers are acknowledged. Durmusoglu et al. (2018) highlight internal obstacles such as organisational culture and finances, while Stornelli et al. (2021) point to external barriers including regulatory gaps and lack of incentives. The theoretical conclusion is that integration of sustainability and innovation depends on consistent application of transformational practices that promote trust, inclusion, and strategic

clarity, while mitigating internal and external barriers through adaptive leadership responses (Oke et al., 2008; Boies et al., 2015; Durmusoglu et al., 2018; Stornelli et al., 2021).

7.2.4. Principal theoretical conclusions Sub-Research Question 4: In what manner do manufacturing companies perceive and comprehend the shift towards sustainable practices?

Environmental awareness is essential to transformational leadership. Robertson & Barling (2017) introduce environmental transformational leadership as a form of leadership focused on developing pro-environmental efforts. Çop et al. (2021) and Ali et al. (2025) show that leaders shift employees toward collective environmental goals through an inclusive work environment and common goal. Peng et al. (2021) emphasize that transformational leaders influence sustainability behaviours through psychological and emotional mechanisms such as clear objectives and shared purpose.

The theoretical conclusion is that manufacturing organisations grasp sustainability as a leadership-driven strategic identity. Sustainability is understood not as compliance but as a moral and strategic commitment embedded into organisational culture, with transformational leadership providing the pathways vision, inclusion, and emotional engagement that make sustainability durable and actionable (Robertson & Barling, 2017; Çop et al., 2021; Ali et al., 2025; Peng et al., 2021).

7.2.5. Principal theoretical conclusions : Main Research Question: What influence does transformational leadership have on manufacturing's adoption of sustainable innovation practices?

Overall, transformational leadership is a central enabler of sustainable innovation adoption. Through its dimensions of vision, intellectual stimulation, individualized consideration, and idealised influence, transformational leadership creates the cultural and psychological conditions necessary for innovation and sustainability to be embedded in manufacturing organisations (Oke et al., 2008; Bass & Riggio, 2006).

Green transformational leadership extends this influence by integrating environmental goals into organisational values and behaviours, initiating employees through shared vision and inclusive practices (Çop et al., 2021; Peng et al., 2021; Mousa et al., 2025).

The theory concludes that transformational leadership influences adoption by aligning organisational purpose with employee motivation, embedding sustainability into culture, and mitigating barriers to change, thereby positioning it as a cornerstone for manufacturing's long-term sustainable innovation.

Final Conceptual framework:

All the themes and constructs have been confirmed in chapter 6. The only theme that was not clear developed was the emerging theme clarity for purpose. The study revealed that vision is shared however how it impacts the individual's contribution was not clearly stated.

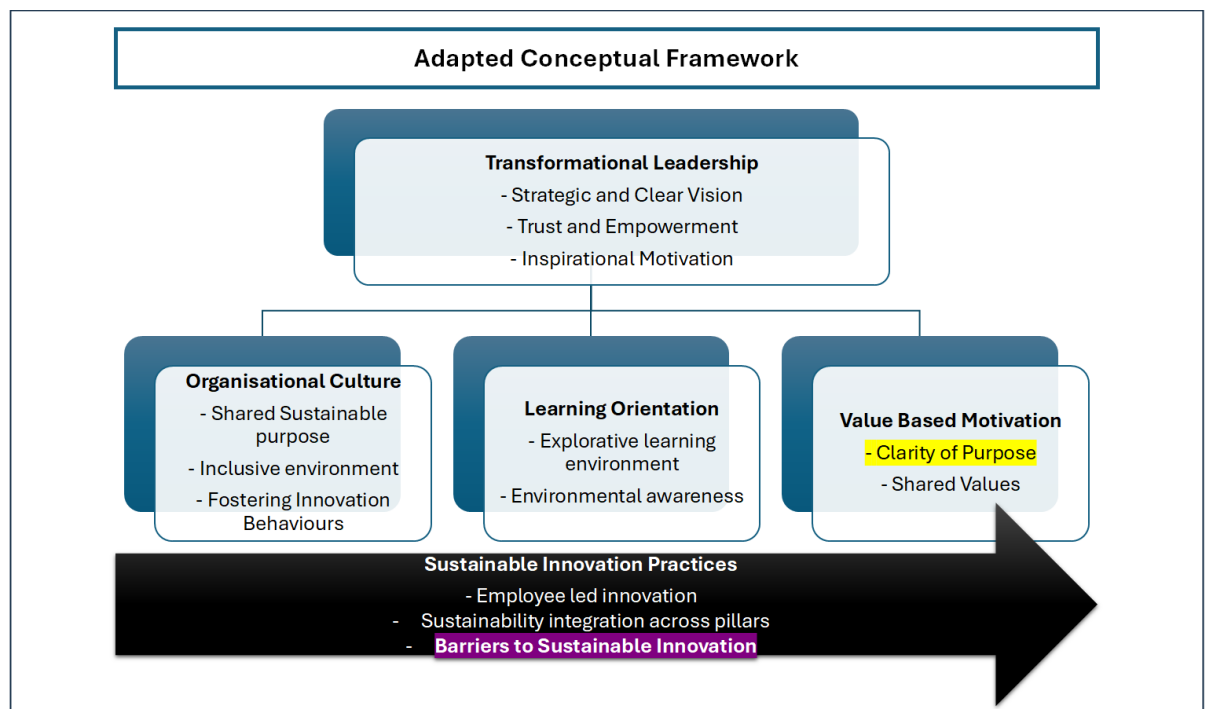


Figure 5: Final Conceptual Framework

7.3. Research contribution

The research aim was to understand the influence transformational leadership has on sustainable innovation practices. This research contributes to transformational leadership theory focusing its role on manufacturing organizations. Transformational leadership encourages sustainable innovation within manufacturing organisations.

tabtable

The study confirms that transformational leadership influences innovation through core dimensions intellectual stimulation, vision sharing, individualised consideration and recognition which create psychologically safe conditions for innovation to take place. The study also shows how transformational leadership goes beyond just innovation creation to be incorporated into organisational culture and long-term leadership practices. These insights contribute to the existing body of work and advances leadership theory even further. It confirms transformational leadership as a driver of sustainable innovation within manufacturing which also assist with positioning employee motivation with organisational culture. Secondly it indicates that transformational leadership can overcome barriers when used as an enabler.

7.4. Recommendations for Management and Stakeholders

Leadership should increasingly focus on embedding transformational leadership practices into organisational culture to strengthen innovation and sustainability goals. Leaders are encouraged to articulate clear visions, foster trust and empowerment, and create inclusive environments that motivate employees to contribute ideas (Peng et al., 2021).

For sustainability, green transformational leadership is shown to mobilise employees toward collective environmental goals through shared vision and values (Çop et al., 2021; Ali et al., 2025). Leaders promote inclusive environments that encourage participation in sustainability initiatives, while clear objectives and shared purpose cultivate long-term transformation (Peng et al., 2021; Janjua et al., 2024).

Stakeholders should support these efforts by providing resources, infrastructure, and incentives that enable sustainable innovation to thrive. Collaboration between leadership and employees, combined with external stakeholder engagement, will ensure sustainability objectives are integrated into long-term strategies not just for organisations but communities.

7.5. Limitations of research

The limitations were discussed in chapter 4. Please see a summary that is applicable to overall research.

This study has several limitations. The qualitative design relied on a small, purposively selected sample, which restricts generalisability (Bell et al., 2019).

Researcher subjectivity in thematic analysis and semi-structured interviews may have introduced bias.

Data reflects managerial perspectives and may be skewed if participants avoided negative portrayals of sustainability involvement.

Most participants were from the vehicle manufacturing sector, limiting transferability to other industries.

The study was confined to South African manufacturing, which may reduce applicability to global contexts with different organisational cultures, innovation models, and governance structures

7.6. Suggestions for further research

Future studies should expand to larger and more diverse samples across different manufacturing industries to improve generalisability.

Comparative research across countries would help assess how cultural and structural differences influence the relationship between transformational leadership, innovation, and sustainability.

Further exploration of emerging and underdeveloped themes, such as barriers to sustainable innovation, clarity for purpose would deepen understanding of how leadership responses mitigate resistance and resource constraints.

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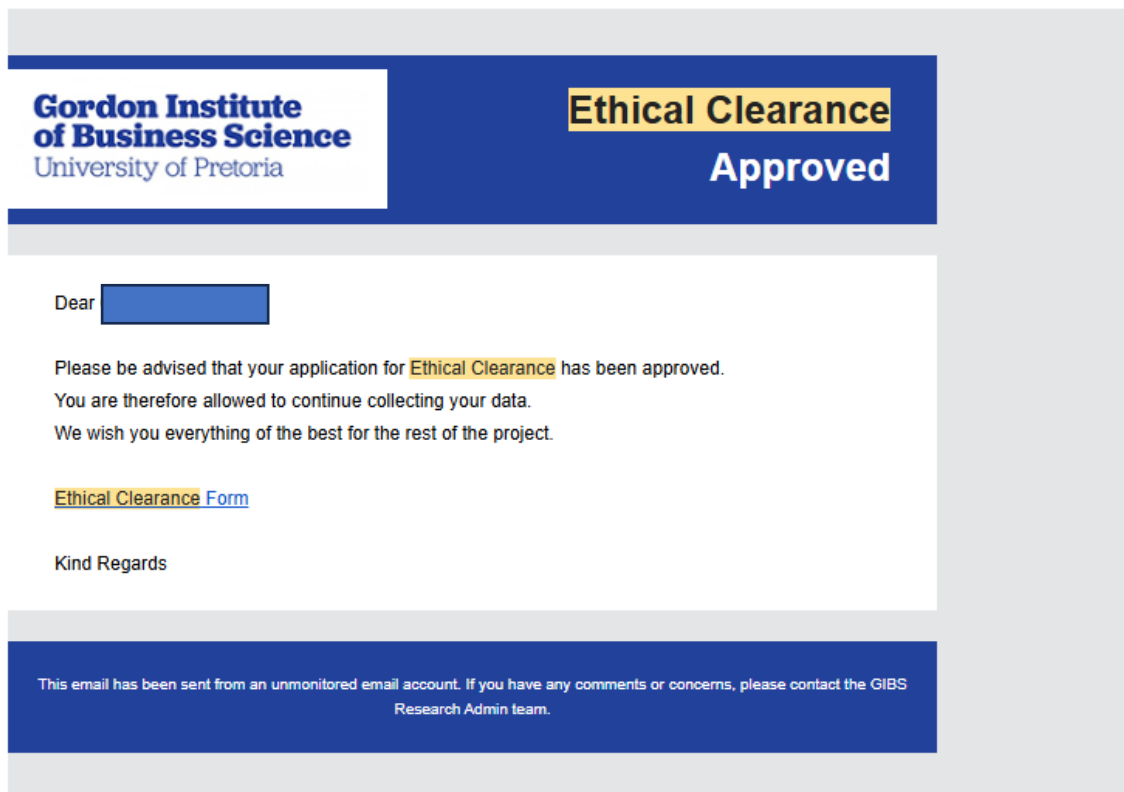
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Appendix 1: Ethical clearance approval



Interview Guide for Semi-Structured Interviews

1. Brief Introduction (5min)

- Welcoming, Introduction and thanking participant for their time
- Explain purpose of the interview and any clarity required
- Ensure confidentiality of the interview.
- Explain interview process and request permission to record (Although this would have been shared upfront as well).
- Remind interviewee there are no right or wrong answers

■

2. Background of the interview (5 min)

- Please state your role and describe what it involves?
- How long have you been in this role?
- What is your understanding of transformational leadership?
- In your opinion, how have leaders in your work environment approached sustainability and innovation practices?

■ —

3. Understanding Leadership style (For lower managers) (15 min)

- How would you describe/characterize your own leadership style in your current role?
- How would you describe the leadership style of senior managers you've worked with.
- Please give an example of a leader you consider to be transformational and why?
- What leadership characteristics have you observed that have a positive impact on innovation creation?

Or

4. Understanding Leadership style (For senior managers & above) (15 min)

- How would you describe/characterize your own leadership style in your current role?
- How would you describe your leadership style in your work environment?
- Please give an example of transformational leadership qualities or behaviours you display.

- In your experience, how have these leadership characteristics influenced innovation creation among those you lead?

■

5. Leadership and Sustainable innovation (15 min)

- How has your own lived experience influenced or shaped approaches to sustainability and innovation in your work?
- Can you give examples of how you or other leaders you've observed support or deter sustainable innovation?
- Can you share an example of an innovation project you worked on and how leadership affected it?
- What kinds of support is provided or do you provide to promote sustainability in your role?

6. Culture of the organisation & Barriers (5 min)

- How would you describe the culture of innovation you've experienced in your work environment?
- What challenges have you faced when implementing sustainable innovations?
- How do you as a leader/ other leaders respond to resistance and challenges towards change?

7. Impact of Transformational leadership (10 min)

- Based on your observation and experience, how have you or your colleagues responded to leadership efforts?
- How in your opinion, what impact does transformational leadership have on initiatives aimed at sustainable innovation?

8. Closing and thank you

- Do you have any further thoughts about sustainable innovation or leadership based on your experiences?
- Do you have any questions for me?
- Re-assure interviewee of the confidentiality of the interview
- Closing remarks and thank you

-----END-----

Appendix 3: Informed Consent Form

Informed consent for interviews

I am conducting research on **The influence of transformational leadership on sustainable innovation practices in manufacturing**. Our interview is expected to last 45 minutes and will help us understand: *What impact does transformational leadership have on manufacturing's adoption of sustainable innovation practices?*

Your participation is voluntary and you can withdraw at any time without penalty. By signing this letter, you are indicating that you have given permission for:

- The interview to be recorded;
- Verbatim quotations from the interview may be used in the report, provided they are not identified with your name or that of your organisation;
- The data to be used as part of a report that will be publicly available once the examination process has been completed; and
- All data to be reported and stored without identifiers.

If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name: Cathrine Mehlape

Email: 04310985@mygibs.co.za

Phone: 073 063 9239

Research Supervisor name: Prof Kerrin Myres

Email: Myresk@gibs.co.za

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

Appendix 4: Participants grouping

Code-Document Analysis

Code Group Manager

Document Group Manager

Code-Document Analysis

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Environmental Awareness

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Explorative Learning Environment

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Fostering Innovative Behaviours

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Inclusive environment

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Inspirational Motivation

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(BSM) Business Strategy & Market Growth

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(PCS) Product Creation and Strategy

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(PPO) Production, Planning & Operations Execution

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(SGT) Sustainability, Governance & Transformation

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			(BSM) Busin... □ 3 ⓘ 77	(PCS) Produ... □ 6 ⓘ 202	(PPO) Prod... □ 2 ⓘ 54	(SGT) Sustai... □ 3 ⓘ 69	Totals
Trust a...	11 ⓘ 78	12	38	9	19	78	
Totals		12	38	9	19	78	

Appendix 4: Code Book list and Themes

Code book from Attila T1	Categories	Theme	Constructs
◦ Inspires belief in the vision ◦ Gives hope and creates belief ◦ Influential leadership ◦ Shifting from directing to inspiring ◦ Clear vision and motivation ◦ Forward Looking ◦ Future orientation leadership ◦ Future planning & Technology adoption ◦ Give a clear vision ◦ If there no vision or clarity acceptance is low	- Influence that Inspires - Purpose & Belief - Influence that Inspires - Influence that Inspires - Clarity of Vision & Direction - Clarity of Vision & Direction - Clarity of Vision & Direction - Clarity of Vision & Direction - Clarity of Vision & Direction - Clarity of Vision & Direction	- Inspirational motivation - Strategic and Clear Vision	Transformational Leadership
◦ A leader that coaches ◦ A leader that is approachable ◦ Acknowledging the employees ◦ Empowering your employees ◦ Getting employees/leaders buy in ◦ Great listener and pays attention ◦ Great support & opportunity ◦ Greater work performance through leadership influence ◦ Improve employee confidence ◦ Individualised motivation ◦ Leadership approval and belief ◦ Adaptive leadership behaviour ◦ Building relationships to get things done ◦ Creating an environment for improvement ◦ Embracing innovation ◦ Encouraged sustainable innovation ◦ Focus on Innovation ◦ Looking at ways to improve ◦ Mentoring and giving feedback ◦ Motivates employees ◦ Team motivation and collaboration	- A leader that provides support - A leader that provides support - Empowerment of employees and Building Trust - Empowerment of employees and Building Trust - Empowerment of employees and Building Trust - Leader that provides support - Leader that provides support - Empowerment of employees and Building Trust - Empowerment of employees and Building Trust - Empowerment of employees and Building Trust - Empowerment of employees and Building Trust - Environment that supports - Cross-functional collaboration - Environment that supports - Environment that supports - Environment that supports - Environment that supports - Encouragement and feedback - Encouragement and feedback - Cross-functional collaboration	- Trust and Empowerment - Fostering Innovation Behaviours	
◦ A culture of sharing ideas ◦ Authoritarian management style/culture ◦ Caring for employees ◦ Consistent approach to leadership ◦ Democratic leadership style ◦ Focus on people ◦ Inclusive motivational leadership ◦ Leadership style displayed ◦ Positive attitude towards Transformational leadership ◦ Relationship building ◦ Top down leadership approach ◦ Transformational leadership style ◦ Transformative & Visionary leader ◦ Visionary leadership style	- Culture of inclusion - Hierarchical leadership - Culture of inclusion - Leadership style and influence - Leadership style and influence - Culture of inclusion - Leadership style and influence - Leadership style and influence - Leadership style and influence - Relationship Building - Hierarchical leadership - Leadership style and influence - Leadership style and influence - Leadership style and influence	Inclusive environment	

51	= Embracing sustainability	Cultural and organisational mindset	Environmental Awareness	Learning Orientation
52	= Environmental conscious innovation	Cultural and organisational mindset		
53	= pro-environmental initiatives	Cultural and organisational mindset		
54	= Sustainable behaviours and mindset	Cultural and organisational mindset	Explorative Learning Environment	
55	= Ability to adapt	Readiness for change and adaptability		
56	= Adaptive mindset and behaviours_moves constantly	Readiness for change and adaptability		
57	= Change is good	Readiness for change and adaptability		
58	= Employee development and growth	Learning & Growth Orientation		
59	= Encourages learning	Learning & Growth Orientation		
60	= Importance of exposure	Learning & Growth Orientation		
61	= Learning and development	Learning & Growth Orientation		
62	= Reshaping and transforming	Readiness for change and adaptability	Clarity of purpose	
63	= Teachinich or learning behaviour	Learning & Growth Orientation		
64	= TL is the key to sustainable innovation practices	Learning & Growth Orientation		
65	= Making a difference and contributing	Purpose-Driven Motivation		
66	= Passion and belief in what you say	Purpose-Driven Motivation		
67	= Purpose driven leadership	Purpose-Driven Motivation		
68	= Dedicated and committed	Alignment of Values		Shared Values
69	= Displays ethical behaviour/values	Alignment of Values		
70	= Inclusive leadership_holistic view	Inclusion as a value		
71	= Leading by example	Alignment of Values		
72	= Open and honest leader	Transparency and Trust	Employee-Led Innovation	
73	= Respecting others	Alignment of Values		
74	= A leader that creates space for autonomy	Autonomy and ownership		
75	= Allowing employees to grow	Autonomy and ownership		
76	= Creation of innovation	Creativity and initiative		
77	= Encourage to be creative	Creativity and initiative		
78	= Freedom in the workplace	Autonomy and ownership		
79	= Innovative ideas reward and recognition	Recognition and motivation		
80	= New or better ways of doing things	Creativity and initiative		Sustainability Integration Across Pillars
81	= Showing employees you trust them	Autonomy and ownership		
82	= Valuing employee input	Recognition and motivation		
83	= Balance between economic and environmental and social	Balance between sustainability initiatives - Triple Bottom Line	Sustainability Integration Across Pillars	Emergent
84	= Strategic continuity in the business	Strategic Priority		
85	= Long term thinking and solutions	Strategic Priority		
86	= Sustainability - Triple bottom line	Balance between sustainability initiatives - Triple Bottom Line		
87	= Cost of Innovation challenge	Infrastructucture Barriers of change	Barriers to Sustainable Innovation	
88	= Denial about change	Barriers of change		
89	= Deterance of Sustainability	Barriers of change		
90	= Fearful behaviour	Fear and resistance		
91	= Infrastructure challenges	Infrastructucture Barriers of change		
92	= Lack of influence/input	Barriers of change		
93	= Lack of understanding	Barriers of change		
94	= Limited resources	Infrastructucture Barriers of change		
95	= Non beleivers of sustainability	Barriers of change		
96	= Not being open to new ideas	Lack of openness to new ideas		
97	= Resistance towards change	Fear and resistance		
98	= Traditional way of doing things	Lack of openness to new ideas		

Appendix 6: Evidence of Employee-led Innovation

Evidence of Employee-led Innovation

BSM 1: "Yeah, she inspired us to be creative, so she was very open to new ideas. Encouraging experimentation and just doing things that are out of the ordinary, right? I don't think she was a creative herself, but I think she had identified that I was a very creative being and she loved that about me" 7:19 ¶ 18 in BSM 1
BSM 2: "stimulate people to be innovative, right with the work that they do, that it's not about what is in front of you, but how can you make it different? How can you make it an impact with what you have? 18:8 ¶ 19 in BSM 2
PCS 1: "leaders that give me the freedom to do what I need to do." 2:11 ¶ 18 in PCS 1
PCS 1: "encourages thinking outside, outside the box, right. So it's about, changing how I guess, we think about, how we run our businesses or our products and, you know, implementing new ideas and new innovative, you know, processes to basically achieve our goals." 11:1 ¶ 9 in PCS 2
PCS 2: "So the current leadership, they kind of give me quite sufficient or significant level of independence, you know, in terms of, you know, being able to express myself, put my ideas." 11:4 ¶ 15 in PCS 2:
PCS 3: "That's my perspective, autonomy where you can have enough trust knowing that the team that you have, you have empowered them enough. They're capable enough to lead themselves to carry out what they're supposed to carry out on their best potential." 12:3 ¶ 10 in PCS 3
PCS 3: "So, I think my style has always been autonomous when I create a space for the team to feel free to be creative, you will understand that when people are not given enough space, you sort of limit their creative mind because they feel you're always looking and checking on them and pushing them and never give them enough space for them to become creative." 12:9 ¶ 14 in PCS 3
PCS 3: So you sort of create a space enough that they feel valued and they don't see you as being there to post them around." 12:14 ¶ 18 in PCS 3
PSC 4: "I think the most important thing that one needs to do is to empower sustainable decision making, how does that happen? Um, encourage the team to choose. And make decisions they think are best for the for the for the business based on their experience and their vision." 13:16 ¶ 24 in PCS
PSC 4: "I think one is to is for allow people to. And encourage people to come with new ideas." 13:21 ¶ 36 in PCS 4
PSC 4: "when you encourage people to and you support new ideas which fosters culture of innovation and colleagues sort of feel safe to challenge their norm and proposed bold solutions" 13:39 ¶ 48 in PCS 4
PSC 4: "And then also recognition and celebration of innovative ideas. Even there is a someone who came with a better idea that is innovative. And then it was. Successfully experimented. You need to award/reward them, even if it's a matter of giving them a recognition in front of top management, taking them out for lunch. Those small things, they make people sort of. Feel the ownership of the of their projects who say 'I'm the owner'" 13:29 ¶ 38 in PCS 4
PSC 5: "clear vision set out and then and ensuring that innovation is encouraged. So where innovation is encouraged, there's individualized attention to people and there's focus on inspiring those people and ensuring that there's a clear vision. So I think that" 17:3 ¶ 9 in PCS 5
PSC 5: "A leader that's a good listener will always create a platform for innovation. As soon as people feel heard, they are willing to speak." 17:13 ¶ 24 in PCS 5
PSC 5: "when you've got a leader that is an enabler, someone who's able to allow for people to thrive, create an environment for people to do what they need to do. So a listener. A good listen and an abler and a trustworthy leader because some of the things that lead to innovation are things that challenge the status quo." 17:14 ¶ 24 in PCS 5
PSC 5: "Then it it allows for people who would create ideas to bring the ideas to the fore, have the ideas discussed, evaluated, and if it's something that's worth doing, it's then implemented. 17:15 ¶ 28 in PCS 5
PPO 2: "People tend to start thinking out-of-the-box after time because they you're leading them out the box." 19:7 ¶ 38
SGT 1: "I think leader that encourages transformation already. They're a motivator. They have an instinct of pushing people to think out-of-the-box 14:1 ¶ 12 in SGT 1
SGT 1: So, it's just a matter of triggering that motivational factor within the people, allowing them to explore, be autonomous in what they do, and they'll come up with ideas..." 14:3 ¶ 14 in SGT 1
SGT 2: "My leadership style is that of creating a space for people to express themselves and express their ability to deliver certain things and I prefer chartering in territories that I don't know much about 16:5 ¶ 13 in SGT 2.
SGT 3: "The more you're able to talk through something, the more ideas or the more people are willing to be like, we can try this, we can look at this and we can it. Encourages more. I want to say collaborative, but more engagement and input from your team members, right? They're able to be more engaged in solution orientation as opposed to. Just doing the work because it's required." 20:10 ¶ 31 in SGT 3

Appendix 7: Evidence of Employee-led Innovation

Evidence of Explorative Learning Environment

BSM 1: "it was very clear in a sense that she was trying to develop me for leadership" 7:21 ¶ 18 in BSM 1
BSM 1: "We embrace change. She embraced change." 7:25 ¶ 18 in BSM 1
BSM 1: "I'm going to say that she was also adaptable because while she encouraged us to be creative, certain things were really outside of the box, right? 7:26 ¶ 18
BSM 1: "It encouraged me to actually think about ways in which I am contributing towards my environment. So, for example, how much energy consumption I'm actually consuming because of the digital consumption, how much I'm consuming, what I can actually do to reduce the wastage in my own home even" 7:40 ¶ 26 in BSM 1
BSM 1: "Being learning oriented, you know in that business mistakes are were seen as learning opportunities are not necessarily punishment. And I think that was very important, right? It encouraged an environment or a culture of learning in the business, recognition and support, for example." 7:48 ¶ 46 in BSM 1
PCS 1: "it moves with systems and it moves with technology. So it's transformational in a sense that it's not stagnant." 2:4 ¶ 9 in PCS 1
PCS 1: " So my lived experiences are that once I started to get hands on with these technologies, with what the company does from a sustainability perspective, I started to realize that it's actually doable.: 2:39 ¶ 29 in PCS 1
PCS 2 : " Africa Divisional Vice president is very, very flexible individual and encourages, you know, decision making that's quicker and more agile." 11:19 ¶ 32 in PCS 2
PCS 2 : Changing for the better and for the best for the for the company as it becomes more agile, more leaner, more agile and decisions are starting to come through much faster. 11:20 ¶ 32 in PCS 2
PCS 3: So we are basically it's more about a shift in terms of the approach when leadership moving away from how it has always been regarded as traditionally in the past in the past years to how now you, we tend to lead others by empowering them and creating a room enough, for them to be able to grow, avoiding micro management and all this other stuff of running around people, but empowering and teaching people to bring them on to a setup of an autonomy" 12:53 ¶ 10 in PCS 3
PCS 3: "So, open-mindedness. I mean, I do believe that transformational leaders should be learners every day I mean, despite the fact that you've got extensive experience, you keep on learning." 12:13 ¶ 18 in PCS 3
PCS 4: " I think transformational leadership is 1 type of leadership that requires people to drive innovation and transfer skill to your subordinates, maybe your colleagues." 13:1 ¶ 9 in PCS 4
PCS 4: "It has to do about vision settings, empowering your teams, driving innovation and talent development." 13:3 ¶ 11 in PCS 4
PCS 4: "Demonstrating openness, adaptability and positivity towards change. And also, it's important while you're in the process to share my own or your own journey." 13:37 ¶ 45 in PCS 4"
PCS 5: " So it's an an environment that encourages learning. So an environment that is conducive for learning or is conducive to learning is an environment that will encourage sustainable innovation because innovation deals with continuous improvement and continuous improvement is built on what exists" 17:18 ¶ 28 in PCS 5
PPO 1: " Emotionally, what they need to do their work 1st and then I'll see opportunities to mentor them into, you know, growth, whether it's upskilling them in the work, taking them. To training program" 15:7 ¶ 15 in PPO 1
PPO 1: " So, one of the things that I've seen recently is this whole strategy of being faster, not letting bureaucracy hold us back, so bringing products to market much quicker. We're no longer playing in that field where we've got the traditional players and we have time to, you know, develop products, Test them. It's a five-year cycle plan. Now we're trying to do things much quicker. So just in terms of sustainability " 15:3 ¶ 11
PPO 1: " Another shift that I saw is that I'm seeing now is our product innovation. So we are being requested to be more agile. You know, these are words I never heard being used in the corridors before. But you know, now you have things like let's be more agile, let's be more flexible" 15:24 ¶ 34 in PPO 1
PPO 2: " Being hands on, on the ground, listening and extending yourself over and beyond what you should be doing to add value to the brand." 19:10 ¶ 41 in PPO 2
PPO 2: So the job is to teach. Before you then request for approval. So that teaching process and that will come over time." 19:15 ¶ 54 in PPO 2
SGT 1: "Leaders, allow new ideas they can adopt to whatever changes are there within the environment. " 14:11 ¶ 20 in SGT 1
SGT 1: " I ensured that everyone is rotational. Basically, they know how to do the next person's job. So, if tomorrow I'm not available, the next person can take over. So you give everyone an opportunity to learn from the next one, yes. 14:16 ¶ 27 in SGT 1
SGT 2: " Personally, it's, I think it's at the core of the success of sustainable innovation. If you know that we have a transformational leadership, which is a leadership that is open to new ways and new methods of doing things" 16:29 ¶ 41 in SGT 2
SGT 3: "Where they're giving them training, giving them whatever the tools and equipment that they need to execute to the base of their ability." 20:9 ¶ 28 in SGT 3
SGT 3: The more you're able to talk through something, the more ideas or the more people are willing to be like, we can try this, we can look at this and we can it. Encourages more. I want to say collaborative, but more engagement and input from your team members, right? They're able to be more engaged in solution orientation as opposed to. Just doing the work because it's required. " 20:10 ¶ 31 in SGT 3

Appendix 8: Fostering Innovative Behaviour

1. Fostering Innovative Behaviour

BSM 1: "So it became like a very normal thing for us to encourage employees to bring forth sustainable ideas and how we did business the right way. So in everything that we did in " 7:41 ¶ 28 in BSM 1
BSM 2: "I transformed my mind to adapt, however, not to act in the same way, but to adapt to the environment while challenging the status quo and innovating." 18:4 ¶ 13 in BSM 2
PCS 2: " And if you have transformational leadership that that that work towards you know enhancing innovation, independence you create a I guess a room, a room for a whole lot of new ideas that that. That will help the business and ultimately work towards you know offering sustainable solutions to I guess for us to our customers through the products that we have you know in the market you know so and the products which we would like to introduce so creating that kind of space" 11:28 ¶ 42 in PCS 2
PCS 3: " We've seen a whole lot of changes that you know that has basically have been happening inside the company that has now started encouraging more flexibility, more innovation and you know, people are taking responsibilities of their work and people are taking decisions and actions, you know, faster and quicker than it has ever, ever, ever been since I started working here" 11:18 ¶ 32 in PCS 3
PCS 3: " So open mindedness creates a space also for the team to be able to voice their opinions or their ideas because sometimes great ideas don't always lie with great minds." 12:25 ¶ 18 in PCS 3
PCS 3: " Knowing who you are, when you start to have those conversations, you realize that innovation actually it's part and parcel of your onboarding. Your onboarding process is part of it. You are told straight away that. Here, how we work is not about how we used to work. It's about how best can we improve what we are doing every day. So innovation is incorporated into the principles." 12:39 ¶ 34 in PCS 3
PCS 4: "when you encourage people to and you support new ideas which fosters culture of innovation and colleagues sort of feel safe to challenge their norm and proposed bold solutions" 13:39 ¶ 48 in PCS 4
PPO 1: "One of the things that has been coming across is the management has been pushing for AI integration into our processing, our daily planning, which I found interesting. So just in terms of innovation, it's kind of like we're not we're not being left behind even though we're not in that space. So, I find it interesting that they are looking at beyond our scope at integrating things like AI and then in terms of sustainability." 15:2 ¶ 11 in PPO 1
PPO 1: " So, we try for keeping up to date with the latest technology. We go for training whenever we need to upskill. If there's anything new that we can bring to a process that can make it more efficient, then we try to do that. 15:10 ¶ 19 in PPO 1
PPO 2: " People tend to start thinking out-of-the-box after time because they you're leading them out the box.PPO 1: " So, we try for keeping up to date with the latest technology. We go for training whenever we need to upskill. If there's anything
SGT 1: They allow new ideas they can adopt to whatever changes are there within the environment. then more often than not, if you basically leave them, particularly the younger guys, they can explore quite heavily and then they can basically come up with solutions that you can never think of."14:11 ¶ 20 in SGT 1
SGT 2: then more often than not, if you basically leave them, particularly the younger guys, they can explore quite heavily and then they can basically come up with solutions that you can never think of. 16:6 ¶ 13 in SGT 2

Appendix 8: Inspirational Motivation

Inspirational Motivation

BSM 1: " I said, visionary, inspirational, creative, empowering. Leaders that really inspire & motivate. " 7:2 ¶ 8 in BSM 1
BSM 1: " transformation is very important and its key, right? It literally changes leadership by shifting the role from directing people to inspiring and empowering them 7:59 ¶ 60 in BSM 1
BSM 1: " We need leaders who are visionaries, leaders who know why they are in positions that they are in, and leaders who know that they can be influential if they lead with heart more than anything 7:61 ¶ 60 in BSM 1
PCS 3: " You want a leader that will cheer you. You want a leader that will create a room for you to learn, a room for you to grow, a room for you to learn. And at the same time, he's honest in his feedback when he when he talks to him. And that's exactly what. I always desire to have to have someone who will cheer me up as someone who struggle away will show that he trusts me. He wants me to adapt and he empowers me, gives me as much information as I can so that I can do my work
PCS 4: "It's basically a leader that also inspires motivation, and also empowers the team with a key vision and future of the company and the objectives the company needs to achieve in order for the company to sort of be sustainable and also one who supports the employees through change processes.13:2 ¶ 10 in PCS 4
PCS 5: "It gives, gives people hope." 17:25 ¶ 44 in PCS 5
SGT 1: " I think a leader that throws a problem to you and allows you time to process, share your idea and then they just add on to whatever solution you are bringing to the table and but they help drive you in the right direction if you are steering away as opposed to giving you a step-by-step guide on how to achieve your goals. " 14:10 ¶ 20 in SGT 1

Appendix 9: Trust and Empowerment

1. Trust and Empowerment

BSM 1: "So she made it easy for us as well to adapt or easily adapt to, you know, some of the challenges and opportunities more than anything, really." 7:27 ¶ 18 in BSM 1
BSM 1 : " So, I think that the best characteristics really displayed was mentoring and coachingSo she made it easy for us as well to adapt or easily adapt to, you know, some of the challenges and opportunities more than anything, really. " 7:27 ¶ 18 in BSM 1
PCS 4: "It's basically a leader that also inspires motivation, and also empowers the team with a key vision and future of the company and the objectives the company needs to achieve in order for the company to sort of be sustainable and also one who supports the employees through change processes. 13:2 ¶ 10 in PCS 4
PCS 4: " even my boss actively supports innovation by sort of removing barriers and allocating resources and also giving you that opportunity to work as a leader and taking responsibility of your decisions and even though the decision. " 13:30 ¶ 38 in PCS 4
PCS 4: " I think the most important thing that one needs to do is to empower sustainable decision making, how does that happen? Um, encourage the team to choose. And make decisions they think are best for the for the for the business based on their experience and their vision." 13:21 ¶ 36 in PCS 4
PCS 4: " I think something that I did well in my previous role was to make sure that I treat everyone in the region as part of a family, and I was not the aristocrats that is sitting on top of a podium and giving direction And expecting people to give you work. But I found myself immersing myself into each market, learning each market and working on the solutions with the teams and listening to what they were saying. 13:17 ¶ 27 in PCS 4
PCS 5: "A leader that's a good listener will always create a platform for innovation. As soon as people feel heard, they are willing to speak." 17:13 ¶ 24 in PCS 5
PPO 1: So we've, you know, we've been brought in, and we've been made confidants, and we've been made part of the process" 15:30 ¶ 42 in PPO 1
PPO 1: "I try expose them to things I try. Whatever information or knowledge that I have, I try to give them so that anytime they have ideas, you know, they can link things to the bigger picture. 15:23 ¶ 31 in PPO 1
PPO 2: "I'm very open-door kind of person where people are free to come and suggest different things. 19:6 ¶ 37 in PPO 2
SGT 2: "so for me it's more like an empowering approach and trying to give them the freedom to express themselves in whatever solution they come up with. " 16:7 ¶ 13 in SGT 2
SGT 2: " I give the people the latitude to say how do you start moving towards the direction of achieving that which you're trying to achieve and. That that freedom and the creativity to do that is just for me is most is important because that's where you go into spaces that have not been explored and that's where you learn the mos." 16:9 ¶ 16 in SGT 2
SGT 2: And once you add, you know you help people to understand their thinking and to show them their thoughts and Solutions that are out there in the market and also to provide a support mechanism where is when someone wants to try something then you say to them like go ahead and they understand that they doing that in a safe space in a supported space then they." 16:19 ¶ 34 in SGT 2
SGT 3: "I think once you paint the picture of what they're doing, how they fit into the overall objective, and what the desired outcome from them is, it's a lot easier to get buy-in. 20:5 ¶ 21 in SGT 3

Appendix 10: Clarity of Purpose

Clarity of Purpose

BSM 1: But I think what he did a lot was basically reinforce purpose-driven leadership. You know, especially with sustainability, I think he made it very clear that leaders need to link business goals to environmental and social value.

7:56 ¶ 55 in BSM 1

PCS 1 : " you have to have the passion and and the drive for for what you believe in." 2:51 ¶ 27 in PCS 1

PCS 1: "So for me that's my lived experience and bringing in these products for. For the South African consumer actually fills me with with pride and a sense of achievement in that we can now partake and start talking about sustainability in South Africa." 2:40 ¶ 29 in PCS 1

PCS 4: "I want to personally, I want to work in an environment where all of us come and contribute meaningfully and management sort of pushes the agenda of transformation and making sure that it's not only their weight or their agenda that sort of wins over and clouds., The input of employee" 13:42 ¶ 52 in PCS 4

Appendix 11: Shared Sustainable Purpose

Shared Sustainable Purpose

BSM 1 : "I come from an environment where sustainability was a big, big." 7:8 ¶ 10 in BSM 1 BSM 1 : "So I come from a a business that really sustainability played a big role in the business that we were in. And I think the reason for that was because we were always told that companies can't grow in the long term if they are depleting resources and damaging their environment, right. " 7:9 ¶ 11 in BSM 1 BSM 1 : "keeping their environment clean and replenished was a very important aspect of our business. So, sustainability was always big. Ideas were always welcome in terms of how we can contribute to the sustainability of the environment or rather areas, communities in which we were visible in" 7:12 ¶ 11 in BSM 1
BSM 2 : "As a group (company group), we take sustainability very seriously." 18:2 ¶ 10 in BSM 2
PCS 1 : " So one of our key pillars is is is to be a fully electrified company. 2:8 ¶ 11 in PCS 1 The company I work for is still committed to being an all electrified company . So this is less than 10 years from now and when you look at the products that they have been releasing in the market, they are hellbent on pushing forward with their strategy" 2:48 ¶ 31 in PCS 1 PCS 1 : " So being fully electricified means that we are targeting a 0 emissions or we want to be a carbon neutral company basically 2:9 ¶ 11 in PCS 1 PCS 1 : "sustainability has become the norm in a sense that you have to eat, breathe and and so forth and so forth," 2:23 ¶ 40 in PCS 1
PCS 2 : "He's quite big and he's quite big on again, especially in the future of making available to even the African market technologies or products that are that are a bit more advanced and you know that works towards 0 emissions and electrification and the likes, right. " 11:12 ¶ 24 in PCS 2
PCS 4 : if you also look at what and I can say this because it's something that has been in the public domain, our company is investing heavily in electrification and in battery innovation like all other OEMs are doing globally. So we have a platform, which is more like a multi-energy platform. It's supports hybrid electric and internal combustion vehicles, and they've also sort of invested heavily in battery R&D." 13:8 ¶ 14 in PCS 4 PCS 4 : "We also we embed sustainability in our strategy where we ensure sustainability is part of our brand messaging and dealer engagement plans. Also advocate for sustainability KPIs in performance reviews or projects. Project evaluations 13:23 ¶ 36 in PCS 4
PCS 4 : I think transformative leadership, it's basically for me about transferring the skills and making sure that you know sustainability even when the leader leaves the organization, right" 13:40 ¶ 50 in PCS 4
PCS 5 : "Both today and going into the future that there are plans to ensure that we move towards new energy solutions. We use alternative energy within the organization and in the workplace. And also just ensuring that we reduce the carbon footprint overall. So I think that's that's one of the things that I that I've seen in organisations where I've worked where even in cases as little as trying to deal with issues of inconsistent power supply we find. Modes that are not necessarily fossil fuel driven so that we we drive sustainability" 17:6 ¶ 11 in PCS 5
PCS 5 : "But I think those are some some of the steps that there's a dedicated sustainability and innovation desk that exists that aims to ensure that the organization tries to ensure it is sustainable and contributes to the sustainability of of the environment firstly" 17:9 ¶ 11 in PCS 5
PPO 1 : "leadership is looking at, you know, just speeding things up so that we're able to compete and remain profitable and have a sustainable roadmap basically for the future. " 15:4 ¶ 11 in PPO 1
PPO 1 : There are a big push....to also develop those electric vehicles. So, there's a big push to switch over to hybrids, to electrical vehicles and adjust operations 15:5 ¶ 12 in PPO 1
PPO 1 : You must incorporate sustainable practices because you know one world, we all live in it. We all want to continue to live in it. So, for me, I see, I see it as. That transformational leadership is one of the pillars of sustainability. So, I think it's been, it goes hand in hand, and you don't have the one without the other " 15:32 ¶ 44 in PPO 1
PPO 2 : "I think for me sustainability is key because that's that's the lifeline of our business." 19:9 ¶ 41 in PPO 2
PPO 2 : " So, so I think in my opinion, I think it's crucial that a business understands where the market is going, understands what competition is doing. And should have strategies in keeping up to ensure sustainability. So, it's a crucial part that business leaders must take in making sure you stay in the game." 19:19 ¶ 58 in PPO 2
SGT 1 : " the company I work for is one of the companies that does invest in sustainability, especially when it comes to packaging improvements. Some of the projects that we did, we had to do Away with one way packaging. Packaging to assist with protecting the environment. 14:19 ¶ 28 in SGT 1

Appendix 11a: Shared Sustainable Purpose

BSM 1: "She was very ethical, and values driven. Her values aligned exceptionally with the company values" 7:24 ¶ 18 in BSM 1
BSM 1: "You know, when leaders walk the talk, it builds trust and it reduces doubt. It's as simple as that." 7:55 ¶ 52 in BSM 1
BSM 2: "it's a matter of being a role model in terms of ethical behaviours and integrity as well as so that people can follow you. It's critical in my role right now" 18:6 ¶ 19 in BSM 2
BSM 2: "So it's quite critical that if when you talk about work ethics, you talk about role modelling. 18:12 ¶ 19 in BSM 2
PCS 4: "consistently demonstrating integrity, also earning deep trust from the team. 13:4 ¶ 12 in PCS 4
PCS 4: "So basically, care stands for ethical responsibility for the people and the planet." 13:7 ¶ 14 in PCS 4
PCS 4: Yeah, I like to influence people through trust and respect in that position. So, you will see in my team, I don't believe that people need to know who's the manager or who's the head of department unless they look at the organogram structure.13:11 ¶ 16 in PCS 4
SGT 2: "He's quite open and have what I call that healthy scepticism where he will talk in terms of understanding you're thinking or questioning your idea and asking the relevant questions to probe and see if you have really well thought out sustainable approach to whatever you're doing" 16:21 ¶ 34 in SGT 2

Appendix 12: Inclusive Environment

BSM 1: I come from a very transformational leadership style and that's why I've inherited that as a leader.7:14 ¶ 16 in BSM 1
BSM 1 : " just reflecting on my previous MD. He also had the same. The same qualities, you know, like I said, visionary, inspirational, creative, empowering" 7:62 ¶ 20 in BSM 1
BSM 1: "For example, leaders must show empathy. He highlighted that a lot and where leaders didn't. He would have one-on-one sessions, obviously, to encourage that, right? To encourage empathy,." 7:58 ¶ 55 in BSM 1
PCS 1: "I am more interested in the person, the human, and not so much on the work that they have to do. I am of the firm belief, well, belief that when you take care of of the person, the person then in turn takes care of the business. If you get to know that person better, the person can actually get to perform better for the business" 2:49 ¶ 18 in PCS 1
PCS 1: " I think nothing is more important than the health and the safety and the happiness of of your people. " 2:13 ¶ 18 in PCS 1
PCS 1: "And he took everyone into his confidence when he was working through the vision of the company where he wanted to see the company so. 2:47 ¶ 23 in PCS 1
PCS 2: "So, you build that relationship first and then you'll see how fast the barriers and the borders could get broken, you know, then people listen to you. 11:24 ¶ 36 in PCS 2
PCS 2: "I think I've responded positively and that's mainly I think it's because the kind of transformational leadership I'm experiencing suits me as a, I guess as an employee or as a worker or whatever. I it suits my character, it suits me. My style of work or style of operating right. So, I've welcomed it with open arms and I think I'm flourishing with it because of that you know because there's not that typical rigidity of management micromanaging and." 11:25 ¶ 40 in PCS 2
PCS 3: " I've always believed in autonomous, and this is also based on the on the kind of work that I do. I don't like to micromanage the people. " 12:52 ¶ 14 in PCS 3
PCS 3: "It's a pattern that you've created a culture where they feel they are valued enough that they can just pop out any idea they have and see what happens next." 12:20 ¶ 20 in PCS 3
PCS 3: " There's someone that listens to the ideas and it's not a one man show or a chief and commander in the army with the soldiers. They are only waiting for you to keep a command and then they fall on. So, in this kind of transformation leadership, really you're not dealing with robots, you're dealing with people and creating that kind of a culture, it's what contributes to the sustainable innovation and best practices in the manufacturing sector" 12:23 ¶ 22 in PCS 3
PCS 3: "You want a leader that will cheer you. You want a leader that will create a room for you to learn....He wants me to adapt and he empowers me, gives me as much information as I can so that I can do my work with independence, flexibility and confidence." 12:51 ¶ 47 in PCS 3
PCS 4: "Employees first, people are most important.13:5 ¶ 14 in PCS 4
PCS 4: "So, you need to make sure that you look after your your employees. You need to be sure that you also contribute to your employee's well-being and develop them to be prepared for the future" 13:6 ¶ 14 in PCS 4
PCS 4: "I want to personally, I want to work in an environment where all of us come and contribute meaningfully and management sort of pushes the agenda of transformation and making sure that it's not only their weight or their agenda that sort of wins over and clouds...The input of employee" 13:42 ¶ 52 in PCS 4
PCS 4: We have brainstorm sessions on innovations and the team must play an active role in those sessions," 13:28 ¶ 38 in PCS 4
PCS 5: "though implementation in some instances is not at the level at which you would like to see, however, there is a there is a platform created to say how can we, how can we change things, how can we do things better? 17:7 ¶ 11 in PCS 5
PCS 5: "To manage and see how it is that the the the organisation can can continue to be sustainable and can contribute to the environmental sustainability and this being driven through innovation and the acceptance of innovative ideas being brought about by people within the organisation. 17:10 ¶ 12 in PCS 5
PCS 5: "A leader that's a good listener will always create a platform for innovation. As soon as people feel heard, they are willing to speak." 17:13 ¶ 24 in PCS 5
PPO 1: "Emotionally, what they need to do their work 1st and then I'll see opportunities to mentor them into, you know, growth, whether it's upskilling them in the work, taking them. To training program." 15:7 ¶ 15 in PPO 1
PPO 1: "So leadership style, I think collaborative. I try, I really try get a sense of what the other teams need, a sense of what my stakeholders need. I think I'm a very good team player" 15:8 ¶ 17 in PPO 1
PPO 1: "Having leadership communicates, cascade the vision for the company, you know, it's it, it feels empowering, and it feels like, OK, our needs are being taken into consideration and then for myself." 15:21 ¶ 31 in PPO 1
PPO 2: "I try expose them to things I try. Whatever information or knowledge that I have, I try to give them so that anytime they have ideas, you know, they can link things to the bigger picture"19:16 ¶ 56 in PPO 2
SGT 1: " They allow new ideas they can adopt to whatever changes are there within the environment. 14:11 ¶ 20 in SGT 1
SGT 2: " there's other groups that are very open to, you know, the culture of innovation, the culture of change, the embracing of new ways of doing things, even when they don't understand them. And they're open to try and learn as much as possible" 16:23 ¶ 35 in SGT 2
SGT 2: "I think it's at the core of the success of sustainable innovation. If you know that we have a transformational leadership, which is a leadership that is open to new ways and new methods of doing things and are not scared of changes" 16:28 ¶ 41 in SGT 2

Appendix 13 Strategic and Clear Vision

BSM 1: "I mean, she would create and share a clear, inspiring picture of what the business actually requires from us." 7:15 ¶ 18 in BSM 1
BSM 1: "It would make our lives easier because we know exactly what we're working with" 7:34 ¶ 20 in BSM 1
BSM 2: "a leader must articulate the vision.." 18:5 ¶ 19 in BSM 2
PCS 1: " it looks at the past, looks at the present, but the focus for me is, is the future in a sense that it moves with times " 2:7 ¶ 9 in PCS 1
PCS 5: "clear vision set out and then and ensuring that innovation is encouraged. So where innovation is encouraged, there's individualized attention to people and there's focus on inspiring those people and ensuring that there's a clear vision." 17:3 ¶ 9 in PCS 5
PCS 5: "Clearly outlining the vision and end goal" 17:21 ¶ 38 in PCS 5
PCS 5: " What I've observed is that when people are uncertain, there's uncertainty and there's rumours. And there's no clear vision. And then change is brought about. These transformational leadership efforts try to change things. When people don't understand what needs to be done, then those efforts are met with the resistance." 17:22 ¶ 40 – 41 in PCS 5
PPO 1: "bringing me into the vision and sort of the inspiration for where the company is going, what we're trying to achieve " 15:20 ¶ 31
SGT 2: The first thing that I do is to help them understand the framework that I'm going to use, so they understand what is that I'm trying to achieve #2 understand the parameters that I have within that framework that I have #3 is to say. Based on those parameters, what are the deliverables that I expect?" 16:8 ¶ 16 in SGT 2
SGT 3: " Vision of the business is communicated effectively throughout the organization itself.. 20:2 ¶ 16 in SGT 3
SGT 3: " You need to be able to understand to an extent the company position in a sense of how to be able to understand and explain their position, how it fits into the overall bigger picture. 20:7 ¶ 28 in SGT 3:

Appendix 14: Sustainability Across Pillars

BSM 1: "Long term thinking. Um. I think leaders that are not only focused on like quick wins, but also the future impact right of certain things"7:36 ¶ 24 in BSM 1
PCS 5: " So I'd say from firstly let's let me break it down sustainability ensuring that we are able to continue to exist today." 17:4 ¶ 11 in PCS 5

Appendix 15: Emerging: Barriers to Sustainable Innovation

BSM 1: " Then, you know, there was a bit of resistance from people because. " 7:45 ¶ 39 in BSM 1
BSM 1: "employees or or leaders just cling on the traditional ways of doing things." 7:50 ¶ 48 in BSM 1
BSM 1: " Financial restraints mentioned 7:52 ¶ 48 in BSM 1
BSM 1: "limited resources in terms of having partners that could help with a certain project as well"7:52 ¶ 48 in BSM 1
BSM 2: " "they're just immune to change" 18:16 ¶ 46 in BSM 2
PCS 1: " you have leaders that don't believe in the strategy, in in in sustainability going forward. 2:20 ¶ 31 in PCS 1
PCS 1: "Infrastructure is very bad locally and I had a first hand experience as well yesterday, well actually yesterday and Saturday of what the customers are actually facing so. The biggest challenge we have is infrastructure." 2:29 ¶ 45 in PCS 1
PCS 2: "People are afraid and at the highest level, right? People are do not like to take decisions, right? 11:21 ¶ 34 in PCS 2
PCS 3: " And because you're not willing to accommodate change, the best way they do is to shoot down an idea once it's proposed. And that's why it's some environments that you don't see a lot of innovation or sustainable innovation happening is because most of these people don't want to change. And so, the best way to do it is to shoot down the idea.12:29 ¶ 25 in PCS 3
PCS 3: " Somebody told me I'm an old oak, so don't just bring too many ideas I don't want. So already up, I'm being told, yeah, even if it's going to take you two days and the new process was going to take us half a day, we don't want it. 12:42 ¶ 36 in PCS 3
PCS 3: " They just want to keep doing things the way they've been for the previous 30 years." 12:45 ¶ 39 in PCS 3
PCS 4: " Look, there there are common challenges that we we generally face where people fear the unknown, you know? People um fear the unknown, and people feel like someone might want to take their jobs, and people are comfortable to the status quo. 13:33 ¶ 45 in PCS 4
PCS 4: " Where they feel that current methods work fine and see no reason for change. You know that all saying if it's not broken 13:34 ¶ 45 in PCS 4
PCS 4: " I know of leaders who do not want to listen and they frustrate people because they all know almost everything in their own thinking, in their own minds" 13:19 ¶ 31 in PCS 4
PCS 5: "It's it's this thing of being stuck to old ways. So you find people that say this it has been done this way and we can continue being done this way because you don't need to fix it if it's not broken. " 17:16 ¶ 28 in PCS 5
PPO 1: "One of the big things is obviously the technology is fairly new and it's sometimes scary for people to think that, OK, technology is going to replace their job" 15:13 ¶ 25 in PPO 1
PPO 1: "So, one of the big things has been a resistance to moving towards the new systems Or having trust in the outputs of those systems 15:14 ¶ 25 in PPO 1
PPO 2: " I think that we are governed by a traditionally conservative culture, people that don't want to change that often" 19:1 ¶ 28 in PPO 2
SGT 2: " leaders are afraid of technology and changes. Because they are afraid to delve in the what we call the unknown spaces and it takes so much of convincing to get them to be in that" 16:2 ¶ 10 in SGT 2
SGT 2: " So, they were more afraid to try new things unless you really, really must maybe show them the case or the business case. Even that you still must basically demonstrate it and in an environment that you know is not open to change. So it was much more heavier to try and do and to try and to persuade them to find new ways of doing things." 16:16 ¶ 30 in SGT 2
SGT 3: " When it's a thing of because I said so kind of thing, they they lay down the law. This is what is being done, This is what it is, and there's no room for discussions or anything like that." 20:11 ¶ 41 in SGT 3

Appendix 16 Environmental Awareness

BSM 1: They prioritized it. And yeah, almost all of the campaigns and what do you call this, all of the campaigns? And basically everything that we did was really centered around sustainability." 7:10 ¶ 11 in BSM 1
BSM 1: "It's a groundwater harvesting and treatment projects. So, you build boreholes. They're solar powered boreholes. In communities, and we did this in communities that were really struggling with water. Most of them were launched in Limpopo and then I think Eastern Cape as well. For the most part, I was responsible for Limpopo at the time, so I know most of the projects were in there and there's a lot of money that was really invested in these things. Things that still benefit communities today." 7:43 ¶ 33 in BSM 1
BSM 1: "sustainability was a big thing, all right? I think we got to a point where it wasn't even. Like a second thought to leaders, whatever idea that was brought forth, whatever initiative that basically meant as saving, meant as contributing to the sustainability of the business was super welcome." 7:44 ¶ 36 in BSM 1
PCS 1: "One of my fun facts that I love to share with people on sustainability is that we actually go to the oceans and literally take out all of the trash, especially plastic bottles and so forth, and actually melt those. And make those into our own products or build build our products with them" 2:46 ¶ 13 in PCS 1
PCS 1: "you can actually take the car to your Kruger National Parks and so forth to watch the animals. And the benefit of that to the animal is that when you consider the fact that an electric car is quiet, you won't startle animals. The way you usually do when you drive a diesel vehicle. So the car is quiet, the car actually blends in with nature and you are adding to the well-being of the animals by not having a very loud car that drives around and scaring them away. So that's the. That's a project that I am actually proud of " 2:22 ¶ 36 in PCS 1
PCS 4: "So, we also have something called secular economy in our company. I don't know if you heard about secular economy. So yeah, secular economy is mainly about reducing manufacturing carbon footprint, promoting responsible supply chain practices and sustainable product design and then we are also aligning with the EU taxonomy and corporate sustainability." 13:9 ¶ 14 in PCS 4
PCS 4: Both today and going into the future that there are plans to ensure that we move towards new energy solutions. We use alternative energy within the organization and in the workplace. And also just ensuring that we reduce the carbon footprint overall. So I think that's that's one of the things that I that I've seen in organisations where I've worked where even in cases as little as trying to deal with issues of inconsistent power supply we find. Modes that are not necessarily fossil fuel driven so that we we drive sustainability" 17:6 ¶ 11 in PCS 5
PPO 1: "You must incorporate sustainable practices because you know one world, we all live in it. We all want to continue to live in it. So, for me, I see, I see it as. That transformational leadership is one of the pillars is sustainability. So, I think it's been, it goes hand in hand, and you don't have the one without the other." 15:32 ¶ 44 in PPO 1
SGT 2: " Number one, how do you do things in a way that understand that there's future generations after us? #2, how do you do them such that? You do not degrade the current or future, you know, opportunities or possibilities while trying to achieve things. " 16:13 ¶ 26 in SGT 2
SGT 2: " So, I do a lot of online fishing. I can put it that way. There's LinkedIn, people post every day, innovative things. Every day and it's trends that are going on within the industry for example. So it's always important to keep your ear on the ground so that you know what changes are happening. So how do you then use that to promote sustainability? 14:25 ¶ 43 in SGT 1