Gordon Institute of Business Science
University of Pretoria

Level 5 leadership and employee innovation: the role of employee voice

Student number: 22010735

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

05 March 2024

Abstract

Employee innovation plays a vital role in enhancing the competitiveness of manufacturing firms in South Africa, within the challenges of a turbulent global business landscape. It is essential to identify the factors influencing employee innovation. This study, guided by social exchange theory, aims to examine two perspectives. Firstly, it seeks to analyse the direct relationship between level 5 leadership and employee innovation. Secondly, it aims to investigate whether employee voice acts as a mediating path through which level 5 leadership influences employee innovation.

Survey data based on an online questionnaire was collected from 177 employees in the South African manufacturing industry. The suggested hypotheses were assessed by applying partial least squares structural equation modelling. The findings verify that level 5 leadership positively influences employee innovation. Furthermore, the author argues that employee voice mediates this relationship.

The relationship between level 5 leadership and employee innovation and the position of employee voice in mediating this link has not been studied until now. By assuming leadership behaviour based on the dimensions of personal humility and professional will and facilitating an environment that promotes employees' ability to speak up, management and human resource practitioners can potentially enhance employee innovation and, in turn, firm innovation and success in the South African manufacturing industry.

Keywords

Level 5 leadership, Employee Innovation, Employee Voice, Social Exchange theory, South African manufacturing

Plagiarism 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 Business Administration 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.

05 March 2024

Contents

List of Tables

List of Figures

List of Abbreviations

AVE	Average variance extracted
BCa	Bias-corrected and accelerated
CEO	Chief Executive Officer
CB-SEM	Covariance based structural equation modelling
CI	Confidence interval
CMB	Common method bias
CTA	Confirmatory tetrad analysis
EI	Employee innovation
EV	Employee voice
f^2	Effect sizes of the path coefficients
GDP	Gross domestic product
HTMT	Heterotrait-monotrait ratio of correlations
MAE	Mean absolute error
L5L	Level 5 leadership
LM	Linear regression model
PH	Personal humility
PLS-SEM	Partial least squares structural equation modelling
PW	Professional will
Q^2predict	Predictive relevance measure
R^2	Coefficient of determination
RMSE	Root mean square error
SA	South Africa
SEM	Structural equation modelling
SD	Standard deviation

SEM	Structural equation modelling
SET	Social exchange theory
SMEs	Small and medium sized enterprises
SRMR	Standardized root mean square residual
SSA	Sub-Saharan Africa
US	The United States of America
VIF	Variance inflation factor
VUCA	Volatility, uncertainty, complexity, and ambiguity

1. Chapter One: Introduction to the Research Problem

1.1. The Research Topic

This study is necessitated by an urgent need for leadership that fosters innovation among employees. Businesses currently operate in a dynamic context, characterised by volatility, uncertainty, complexity, and ambiguity (VUCA) (Troise et al., 2022; Zhang-Zhang et al., 2022). This contemporary environment includes disruptive technological advancement, climate change and war, global pandemics, and economic crises (Taskan et al., 2022; Zhang-Zhang et al., 2022). Successful firm responses to fast changing environments can be best realised through innovation (Arranz et al., 2019). In this dynamic setting, the position of employee innovation (EI), creativity and ingenuity as a contributor to organisational success is significant (Zhang-Zhang et al., 2022).

Author, and researcher, Jim Collins in his book “Good to Great,” introduced the construct of the level 5 leader (Collins, 2001a). The qualities of a level 5 leader are that of personal humility (PH) and professional will (PW), that can lead to exceptional company performance during both periods of turbulence and steady states (Collins, 2001a). This opposes the conventional view, particularly the notion that charismatic and big personality leaders, with the ability to inspire and motivate, are needed during transitional and turbulent periods (Collins, 2001a). While the necessity for EI in organisations and the appropriateness of level 5 leadership (L5L) in dynamic business environments has been noted, the relationship between the two constructs has never been studied. This study therefore intends to understand the association between L5L and EI.

The importance of innovation is demonstrated in the case of Apple Inc., ranked the world’s most innovative company in 2023 in a survey conducted by the Boston Consulting Group (Boston Consulting Group, 2023). The survey included over 1 000 executives of which 79% of the company’s rated innovation in their top three priorities. As a global manufacturing and technology leader, Apple Inc. reinvented the personal computer in the 1980s, and has since introduced several innovative products including smartphones, computers and wearables (Li, 2021). With a market capitalisation of over US$ 2 trillion, Apple Inc. is the most valuable company in the

world (Li, 2021). The company's early success was largely believed to be driven by Steve Job's charismatic and transformational leadership style and his ability to inspire and motivate employees to innovate (Umoh, 2023). This is supported by empirical studies which indicate that charismatic and transformational leaders can positively influence employees' abilities to innovate (Alblooshi et al., 2021). However, post the resignation and subsequent passing of Steve Jobs in 2011, Tim Cook assumed the role of Chief Executive Officer (CEO) of Apple Inc. and is believed to lead with a mixture of humility and ambition while being inclined to shun the limelight (Aziz, 2019; Maldonado et al., 2022). These are fundamental traits of a level 5 leader (Collins, 2001a). Despite the contrasting leadership styles, under Cook's leadership which is characterised by L5L traits, the company remains the global leader in innovation, however no empirical evidence exists to validate the relationship between L5L and EI. This study therefore intends to confirm or refute the notion that L5L is a predictor of EI.

The importance of leadership that inspires innovation has been noted, however there are various boundary conditions and mediating factors that can influence this relationship. Effective communication between leaders and employees is critical to create an environment where an employee can communicate ideas and thoughts. The notion of EV is consequently crucial to promote effective organisations, innovation and competitiveness (Guzman & Espejo, 2019). Research on EI should include EV as they are closely related concepts (Carnevale et al., 2017). Consequently, this research also intends to understand whether EV mediates the relationship between L5L and EI.

In view of this research purpose, this chapter offers the identification and context of the research problem, followed by the objectives the study planned to accomplish. The chapter also provides the relevance and motivation of the research from a business and academic standpoint, and thereafter presents the scope and context of the research. In conclusion, a framework of the structure of the research is presented.

1.2. Problem Identification and Background

It is not by coincidence that Apple Inc. disrupted the technology product industry, as in a period of accelerated world economic and technological change, innovation is a crucial element that contributes to an organisation's competitive advantage, organisational success, and long-term survival (Ferreira et al., 2020; Mascareño et al., 2021; Ortiz-Villajos & Sotoca, 2018). Organisational growth is also dependent on an organisation's ability to develop and implement new ideas, and consequently creativity and innovation are vital to a business's long-term sustainability and success (Lee et al., 2020). In a competitive global context, science, technology and innovation are considered enablers that drive social and economic enhancement (Heredia et al., 2017; Lazzarotti et al., 2018; Ullah et al., 2020). Despite the value of innovation having been well studied, the South African context and its manufacturing sector lag behind the rest of the world in innovation.

South Africa (SA) currently lies 61st out of 132 nations, based on the Global Innovation Index (World Intellectual Property Organisation, 2022). The overall score is enhanced by the market sophistication category, while the country performs poorly in the other scored areas, namely business sophistication, creative outputs, infrastructure and human capital and research. SA's manufacturing productivity is also low when compared to international standards (Kreuser & Newman, 2018).

The modern world can be viewed as an outcome of industrialisation, whether it be the industrial revolution in Europe and the United States of America (US) that separated the global economy between wealthy and poor countries, or the rise of a handful of non-Western nations led by the East, that rapidly gained on the Western nations (Rodrik, 2016). The author adds that in countries that continue to be affected by high poverty levels, such as nations in Sub-Saharan African (SSA), many believe that economic prosperity lies in manufacturing. SA is the leading manufacturing country in Africa, with manufacturing contributing 13% to the nation's gross domestic product (GDP) (Sichoongwe, 2023). The manufacturing sector is generally more productive than other sectors and is a driver of job creation and economic growth for developing nations (Kreuser & Newman, 2018; Sichoongwe, 2023). Manufacturing is linked to high quality jobs, a strong working class and many technological solutions are founded in manufacturing (Aiginger & Rodrik, 2020). Crucial, however, is that

Africa's share of the global manufacturing value add is less than 2% (Larsen, 2020). Adding to this concern is that as of 2018, in the previous two decades, manufacturing contribution to GDP in SA has been declining, with the rate of decline faster than other BRICS founding nations (Kreuser & Newman, 2018).

The concept of premature deindustrialisation has become widespread in middle income nations, characterised by manufacturing declining at low levels of industrialisation and GDP per capita (Kruse et al., 2023; Rodrik, 2016). South Africa arguably started to deindustrialise in the 1980s (Andreoni & Tregenna, 2021), and in instances of premature deindustrialisation it is likely to have harsher consequences than deindustrialisation in developed countries, as it blocks of the primary avenue of swift economic convergence (Rodrik, 2016). An analysis by Liu and An (2023), proposes that deindustrialisation worsens poverty via three conduits: low economic growth, reduced standards of employment, and the elimination of traditional manufacturing jobs. The consequences of deindustrialisation on poverty are more marked in countries experiencing premature deindustrialisation. Some 60% of SA's population fall into the category of poverty at the national upper poverty line (The World Bank, 2022). SA needs to guard against potential increases in poverty due to diminishing manufacturing.

The world is segmented into two categories: countries that have prioritised education, science and technology, thereby enhancing innovation and those nations trapped in an economy with limited manufacturing value-add (Ullah et al., 2020). With its latest 2020–2025 Strategic Plan for the Department of Science and Innovation (Department of Science and Innovation, 2020), SA may indicate a commitment to improving science, technology and innovation. However, with a low relative global manufacturing productivity and value-add it is at risk of placing in the second category. In contrast, China has played a substantial part in the knowledge-based economy by forming an advanced generation of innovation enabling the development of business accelerators (Zhao & Lan, 2017). The consequence of this innovation has seen China's leadership create a significant number of jobs and has shown inclusive economic growth (Xiao & North, 2018). Several studies have emphasised the importance of a nation's manufacturing capacities to support economic growth and employment creation and have related a countries strength in manufacturing to its ability to innovate (Kahn et al., 2022; Reynolds & Uygun 2018).

For SA to improve its declining manufacturing productivity it is evident that innovation is a key component.

Businesses require leaders that can inspire motivation that drives organisations towards innovation. In a study on the role of the leader in fostering innovation in organisations, Naqshbandi et al. (2019) indicated that leaders are a central component in influencing the innovative attitudes of followers and should be open to new ideas and innovation from employees, as EI is critical to overall firm innovation performance. In addition to being a facilitator of innovation and idea implementation, leader behaviour was found to have a favourable influence on idea generation and promotion (Mascareño et al., 2021). These studies indicate the significance of leadership in developing an innovative environment and show that the leader is not necessarily the one creating the ideas driving innovation but should be identifying and fostering innovation from employees. For organisations to be innovative, its employees must be innovative.

In the absence of leadership fostering innovation, businesses can become unproductive, uncompetitive, and unsustainable. In a study of South African manufacturing small and medium enterprises (SMEs), it was found that weak leadership is a direct deterrent to innovation in manufacturing organisations (Ngibe & Lekhanya, 2019). Despite the introduction of the construct of the level 5 leader, research done on the combined traits that make up a level 5 leader is scarce (Caldwell et al., 2017; Zhou & Wu, 2018). It is this necessity for leadership that stimulates innovation in organisations that warrants the need for this research.

1.3. Objectives

Simply stating the research problem: In a period of accelerated technological and economic change, South African manufacturing organisations without leadership that inspires innovation, face the risk of being unproductive, uncompetitive and unsustainable which can detrimentally impact economic growth, job creation and poverty levels.

Global manufactured brands that were significantly hampered due to their failure to innovate include General Motors, Hitachi, Blackberry and Kodak, to name a few

(Lagerstedt, 2018). For close to a century Kodak was the leading commercial camera manufacturer (Kremer et al., 2019), yet the organisation's leaders' inability to innovate into digital printing, software and third-party applications caused its share price to fall over 90%. In a similar context, the authors note that Motorola manufactured and distributed the world's first mobile phone and dominated the market into the early 2000s. However, the failure to innovate saw the company lose US$ 4.3bn over a period of three years, as it lost market share to Apple Inc. and Samsung. In this context this research aims to:

- understand whether L5L can have a positive influence on EI.
- understand whether EV mediates the relationship between L5L and EI.

The focus of this study is to offer a theoretical model for increasing EI and to determine the significance of the proposed model. Consequently, the objective of this study is to add to existing theoretical research on the leadership and EI constructs. It also aims to provide practical direction to the South African manufacturing industry and to organisations that have substantial innovation aspirations, as to the value of L5L in fostering an innovative environment.

1.4. Relevance and Motivation

1.4.1. Business Rationale

The study was designed with the objective of obtaining an empirical understanding of the impact of L5L on EI. This is highly relevant in most organisational contexts as innovation lies at the core of business survival and success (Jiang & Chen, 2018; Qingyan et al., 2019,). In doing so, it can directly impact an organisation's financial performance and provide firms with a competitive advantage (Ferreira et al., 2020). Competitive advantage can be accomplished by way of unique products, services and processes that differentiate organisations from their competitors. The ability to inspire EI can therefore substantially advance an organisation's long-term sustainability, competitive advantage and performance, making this research highly relevant in a business context. It can also promote productivity in a manufacturing context and enhance labour productivity and growth (Kahn et al., 2022; Wadho & Chaudry, 2018), which has significant implications for premature deindustrialised

nations such as SA as it supports job creation and economic growth (Kahn et al., 2022; Reynolds & Uygun 2018).

Innovation is important for economic and social development at an organisational and country level, while from an individual perspective it is a necessity that can improve job satisfaction (Grošelj et al., 2021). Workplace innovation was also found to enhance employee career satisfaction (Wipulanusat, 2018). The inclusion of the mediating variable of EV in the study, offers practical solutions on how to bring about individual innovative practice and improve organisational performance.

Employee voice is also a fundamental basis of learning that can enhance firm performance (Ullah et al., 2020; Venkataramani et al., 2016). Contrasting opinions lead to better informed decision making and resolutions (Venkataramani et al., 2016). The silence of employees can lead to inertia and lack of change while EV can enhance the feeling of being respected and reduce stress levels (Ullah et al., 2020).

Additionally, leadership is a key determinant of an organisation's success. The current complex, changing and uncertain business environment requires leaders to become increasingly adaptable (Uhl-Bien & Arena, 2018). The changing pace of the business environment therefore requires leaders to be enablers of both innovation and renewal.

With insight into these relationships, organisations can determine whether they should be recruiting or developing individuals with L5L traits. Individuals have the potential to be developed into level 5 leaders under the right circumstances (Collins, 2001b). Studies in humility, a key characteristic of the level 5 leader, indicate that the trait can be enhanced through coaching and development (Aziz, 2019; Maldonado et al., 2022). Leadership development programmes can be designed to enhance these traits. With an understanding into the relationships, organisations can proactively take steps to foster an innovative environment in the business. Similarly, leaders can identify leadership areas that can be developed to increase the opportunity for innovation.

1.4.2. Theoretical Gap

From a theoretical and academic perspective, over the past 8 to 10 years a vast amount of research has been done on the relationship between leadership and EI. Studies into the effects of transformational, transactional, empowering, authentic, humble and servant leadership on EI have indicated that these leadership styles either directly or indirectly have a positive influence on EI (Alblooshi et al., 2021). Despite the research indicating a favourable influence of leadership on employee behaviour there is a clear inconsistency of results (Grošelj et al., 2021) which necessitates further understanding into the relationship between the constructs, by investigating previously untested leadership styles.

In the current changing global context with increasing complexity, a more collaborative leadership approach is required (Aziz, 2019). There is therefore an increasing research interest amongst academics and management into the traits of humility (Maldonado et al., 2022) and servant leadership (Iqbal et al., 2020). However, no evidence exists of any research undertaken to understand the relationship between the people-orientated L5L and EI, including the mediating effect of EV on this relationship.

Hughes et al. (2018) indicated that past research focused on broad leadership styles and there is a need for deeper insight into specific leadership traits. The authors also indicated the need to understand the impact of more under researched mediating factors on the leadership variables and EI relationships. Overall, the findings intend to contribute to the prevailing literature as follows. Firstly, the present research extends the standing research on leadership and innovation by understanding the relationship between L5L and EI which has not been studied before. Secondly, it answers the call to include under-researched mediating variables, namely EV in studies on EI. Thirdly, it answers the call to include more specific leadership traits in studies on EI. With these identified research gaps the proposed research topic will support existing theoretical literature.

1.5. Scope

The manufacturing sector has been a significant contributor to technological, product and process innovation (Edwards-Schachter, 2018). Given the importance of the manufacturing industry in SA as a contributor to innovation, job creation and economic growth, the study was undertaken in the context of manufacturing companies in SA, including organisations that comprise part of the primary supply chain of the manufacturing sector. The research findings can also be of value to firms in other industries and countries, which aim to inspire employees towards innovative thinking.

1.6. Structure of the Research

The format of this research is organised as follows:

- Chapter Two: consists of a review of existing literature to build an argument for the requirement for this study
- Chapter Three: shapes the theoretical model and hypotheses established from the literature review and research objectives
- Chapter Four: outlines and defends the methodology and design recommended to test the hypotheses and theoretical model
- Chapter Five: presents the findings and results from the data collected, including the descriptive statistics and assessment of the measurement and structural model
- Chapter Six: discusses the results considering the literature from the previous chapters
- Chapter Seven: presents the principal conclusions of the study, consequences to the relevant stakeholders, limitations and suggestions for future research

Having identified and defined the research problem and objective, the next chapter comprises a review of existing literature relative to this research problem and objective and provides an argument for the need for this research.

2. Chapter Two: Literature review

2.1. Introduction

The South African manufacturing industry is a cornerstone of economic development, technological innovation, and job creation. Its impact extends beyond economic metrics, influencing social development, skills enhancement, and global competitiveness. This review serves as the foundation for a rigorous exploration, poised to uncover nuanced dynamics and pave the way for future advancements in leadership practices within the South African manufacturing industry and for all organisations aiming to develop innovative practices.

Snyder (2019) emphasised that a review of existing literature is the beginning point of all research. Considering the research problem and objective, this chapter offers a critical review of the pertinent academic studies relevant to the research topic, to develop an argument for the need for this research. Firstly, the theoretical model underpinning this research is introduced, namely social exchange theory (SET). The suggested linkages between SET and the defined constructs of L5L, EI and EV are then identified.

The chapter is then structured to offer context on each construct to obtain the insight required to assess the outcomes of the study. The literature review on the EI construct includes a definition of innovation, a discussion of the importance and consequences of innovation at all levels, and a review of the antecedents to innovation. A critical review of leadership theory and relevant styles was then undertaken, including an analysis of the varying relationships of these styles with EI. The place of L5L in the field of leadership and EI studies formed part of this review.

Insights into the construct of EV were then obtained from the literature, to determine how EV could mediate the relationship between L5L and EI. This section provided a definition of and background to EV, a discussion of the importance of EV, and an assessment of the associated relationships between leadership theories, EV, EI and innovation. This was followed by a combined theoretical review of the position of L5L, EV and EI, leading to the research gap identification and conclusion.

2.2. Theoretical Model

Social exchange theory proposes that the collective behaviours and engagement amongst individuals are a result of an exchange process. First posited by George Homans (1958), the author argued based on foundations on psychological and sociological positions, that social exchange can be seen as a reinforcing stimulus. Individuals regulate and obtain learnings from past events, and its cost or reward outcome. These favourable or unfavourable consequences reinforce or change future behaviour to achieve desired outcomes or limit those that are costly. Persons in an exchange relationship, willingly deliver favours to others that offer benefits to them (Ullah et al., 2020).

Meng et al. (2019) defined social exchange as, “an open-ended stream of transactions, with both exchange partners making contributions and receiving benefits” (Kamdar & Van Dyne, 2007, pp. 1288–1289). The researchers noted five variables in social exchange studies, “perceived support, exchange quality, affective commitment, trust, and psychological contract fulfilment.” However, they emphasised that the foundation of the social exchange association is in mutual trust and obligation.

A relationship where a leader and follower trust one another influences the search and affiliation behavioural systems that enhance the followers’ inclination to participate in extra role and riskier behaviour (Bharanitharan et al., 2019). Research has identified EI and EV as specific extra role behaviours (Zare & Flinchbaugh, 2019). In the context of this study, when leaders build this trust with employees it can result in an atmosphere of innovation in organisations (Xie et al., 2018). When leaders display concern for the aspects of the day-to-day life of their followers, and show fairness, self-control and selflessness, employees will tend to exhibit reciprocal behaviour by suggesting ideas to enhance organisational work (Ullah et al., 2020). Through social exchange with high levels of trust, leader-member exchange was found to positively predict follower creativity, innovation and EV (Carnevale et al., 2017).

Level 5 leaders are seen as humble and extremely capable individuals that positively influence the behaviour of followers and can therefore encourage them to commit to

additional effort to attain organisational outcomes (Sarfraz et al., 2022). Level 5 leaders are also known to place their employees' and the organisation's needs before their own (Collins, 2001a; Reid et al., 2014), and to develop their successors for even greater accomplishment in the future (Collins, 2001a). In so doing, it is argued that by placing the needs of followers above their own interests, level 5 leaders can obtain the trust of followers (Do et al., 2018), and employees are likely to believe that such leaders will support and offer them with the chance to be more risk seeking and innovative. Leaders that possess PH, a key characteristic of L5L, look to be taught by employees, contrary to doing all the teaching, place the spotlight on their employees as opposed to themselves and acknowledge their limitations and mistakes (Wang et al., 2018). Followers perceive this as a leader-follower reversal, and it enables a perception of trust and support from their leader (Wang et al., 2018). In support of this Caldwell (2017) was of the view that level 5 leaders are known to engender trust and commitment from their followers. Hence the theory suggests three potential links between L5L, and the social exchange variables as discussed by Meng et al. (2019), namely, trust, affective commitment, and perceived support.

Level 5 leaders are however also highly ambitious and as leaders with a strong professional will, they will go to great efforts to extract long-term favourable results for the organisation albeit at their own personal expense (Collins, 2001b). Collins (2001a) described them as fanatically driven, with a need to produce sustained results, irrespective of how big or difficult the decisions. While Collins emphasised the positive characteristics of PH and PW, the traits of Level 5 leaders can also have a negative effect on followers (Reid et al., 2014). In the presence of these nuances, the part of L5L as a predictor of extra role behaviour is thus the essence of this research.

The current dynamic business environment often requires employees to go beyond formalised job and role specifications and instead engage in discretionary efforts or extra role behaviour (Zare & Flinchbaugh, 2019). The authors note that organisations support employee extra role behaviour, as obtaining competitive advantage in today's environment, is largely dependent on employees' extent of effort over and above their formal job descriptions. This study thus sought to detach the distinctions of the specific extra role behaviours of EI and EV (Zare & Flinchbaugh, 2019). Considering these theoretical underpinnings, this study aims to understand whether

through SET, leaders by way of their behaviour and actions as level 5 leaders, can influence EI and whether EV can serve as a mediator to this relationship. In so doing, SET was evaluated in the context of L5L, EI and EV. The next section introduces the construct of innovation.

2.3. Innovation

2.3.1. Defining Innovation and Employee Innovation

The construct of innovation has a lengthy history in scientific literature with varying interpretations, but is often poorly defined (Guzman & Espejo, 2019). The use of the construct for this study therefore requires clarification. Granstrand and Holgersson (2020) define innovation based on two features, namely, “a degree of newness of a change and a degree of usefulness or success in application of something new” (p. 2). Audretsch et al. (2022) referred to innovation as, “activity as characterised by newness and complexity of knowledge” (p. 976). Dziallas and Blind (2019), premised that the concept of innovation refers to both innovative ideas with the intent to be put into commercial use and ideas that have already successfully been implemented. Closely linked to innovation is creativity and the concepts have regularly been used interchangeably in academic research. Lee et al. (2020) argued against this stance, indicating that creativity and innovation are connected, but different concepts. The authors argued that creativity relates to the formation of novel ideas, while innovation relates to introducing and implementing these new ideas into new products, processes or services. This view is supported by Hughes et al. (2018).

For this research, creativity and innovation will be viewed as interrelated concepts and will be combined as a single construct. This is consistent with previous studies where creativity was seen as part of innovative behaviour and both were included under a single construct (Caniëls & Veld, 2019; Newman, Herman, Schwarz & Nielsen, 2018). Although EI has been most resonated with the notion of creativity, the concept of innovation extends beyond the idea phase into the application of ideas (Bäckström & Bengtsson, 2019).

In recent research on leadership and EI, the researchers defined innovation as consisting of three fundamental phases: idea generation, idea promotion and idea

implementation (Janssen, 2000; Ullah et al., 2020). The authors noted that idea generation necessitates leaders to foster a safe environment for employees to introduce and voice new ideas and thinking. The idea generation phase is the associated creativity element and the first stage of innovation (Amabile & Pratt, 2016; Mascareño et al., 2021). However, leaders need to guard against the idea generation phase minimising the other phases of innovation (Ullah et al., 2020). Here focus is shifted from the creation of ideas to the evaluation of ideas, refining selected ideas to the organisation's objectives and eventual execution of ideas. The promotion of ideas involves employees seeking backing of their ideas from others, including their leaders, whilst idea realisation entails employees developing a sample system that can be tested within the organisation (Carnevale et al., 2017; Janssen, 2000). Mascareño et al. (2021) noted that these three stages of innovation are highly interdependent, creativity is of small value to organisations should ideas not be executed, and innovation as defined is dependent on the availability of creative ideas.

The concept of innovation as defined, can thus potentially play a significant role in promoting organisational outcomes. The next section discusses the significance of innovation and its consequences for organisations.

2.3.2. The Importance of Innovation

The part of innovation in achieving firm strategic success has been widely referred to by academic scholars. Since Schumpeter's (1934) concept, premising continuous innovation as a critical aspect for lasting organisational success, the construct of innovation has subsequently concerned the interest of scholars (Ramadani et al., 2019). A fundamental measurement of business success is the ability to last over a long period of time, and innovation is a vital component for long term business sustainability and survival (Jiang & Chen, 2018; Khosravi et al., 2019; Lee et al., 2020; Ortiz-Villajos & Sotoca, 2018; Škerlavaj et al., 2019). Innovation needs to be a significant aspect in an organisation's strategic plans to maintain a competitive advantage.

Innovation allows leaders to enhance future growth by experimenting with new technologies, knowledge and systems through an exploration orientated innovation

strategy, while by way of an exploitation orientation strategy, leaders can optimally use existing technological assets and innovation capabilities to contribute to current growth (Li et al., 2021). The researchers argue that by balancing the two strategies, organisations can ensure sustainable growth. Lee et al. (2019) indicated that through exploration and exploitation strategies, the synergy effects of product, process, marketing and organisational innovation have favourable effects on firm performance.

The significance of innovation is exacerbated by the volatility of the current global business environment due to economic challenges, technology disrupters and world crises such as COVID-19 and climate change. The economic crisis following the COVID-19 pandemic, indicated the need for organisations to innovate to remain sustainable (Lien & Timmermans, 2023). In a time of growing concern regarding climate change and sustainable growth, green innovation can lead to improved organisational performance and a sustainable competitive advantage by increasing an organisation's green intellectual capital (Rehman et al., 2021). Furthermore, science, technology and innovation are important gears to enable solutions to global issues such as climate change, environmental degradation, water scarcities, energy and food uncertainties and population changes (Soete, 2019).

From a manufacturing perspective, all types of innovation activities were found to increase productivity in firms that innovate, as opposed to organisations that do not innovate (Fazlıoğlu et al., 2019). Chikán et al. (2022) demonstrated that the advancement of the factory area's capacity for transition and adaptability, such as the capability for introducing new approaches, processes and technology can have a substantial effect on the general organisational competitiveness. Current obstacles such as the rapid advancement of technology, limited resources and globalisation, means that manufacturing organisations are faced with a need to adapt and redefine the manufacturing industry to enhance global competitiveness (Zangiacomi et al., 2020). Rodrik (2018) deliberated concerns about the sustainability of economic growth in SSA. This is due to the region showing minimal shift to non-traditional tradables such as manufacturing, which is a key requirement for rapid and sustained economic growth. The researcher discussed the potential for poor prospects of industrialisation in the region. In a South African context, industrialisation has a substantial role to play in the economic growth of developing countries (Haraguchi et

al., 2017), yet the countries manufacturing contribution to GDP and productivity is declining (Kreuser & Newman, 2018). With inadequate research on the drivers of performance in manufacturing, it necessitates a focus on the manufacturing industry. In a turbulent business setting, innovation is required for organisations to develop their manufacturing execution to surpass their competitors (Do et al., 2018). As a driver of organisational performance innovation plays an important role to enable manufacturing organisations to advance productivity and obtain a competitive advantage, which ultimately promotes economic growth, increases employment and reduces poverty.

Given the importance of innovation, researchers have tried to identify ways that it can be promoted. An examination of this literature is covered in the following section.

2.3.3. Fostering Innovation

The previous section presented that innovation is a key antecedent to organisation's productivity, success, competitive advantage and sustainability. Scholars have consequently attempted to find approaches to enhance innovation in organisations. These include:

- Employee engagement: Kwon and Kim (2020) found a direct favourable relationship between employee engagement and innovative behaviour.
- Motivation and job strain: In a study on corporate sustainable innovation, Delma and Pekovic (2018) found a positive influence of intrinsic motivations (by way of employee social interactions), and a negative influence of job strain, on corporate innovation.
- Knowledge sharing: This is how employees obtain the maximum from the accumulated knowledge of a firm, which is another driver of creativity and innovation (Kremer et al., 2019).
- Education: In research on education, Kong et al. (2022) indicated that organisations with higher employee education levels foster enhanced innovation outcomes and corporate innovation, and that technological innovation is an instrument through which higher education influences productivity growth. Supporting this view, Sinaga and Razimi (2019) revealed

that employee education positively influences EI which enhances employee performance.

- Age: Schubert and Andersson (2015) confirmed consistent evidence in past studies showing that an employee's age has a negative relationship with organisational innovation.
- Employee tenure: Although studies on employee tenure and innovation have yielded inconsistent results, Woods et al. (2018) found that employee tenure moderates the effects of specific personality traits with innovation.
- Gender: Lee et al. (2020) discussed that men are more probable to achieve creative success across numerous spheres, and a key explanation is that men regard themselves as being superior at most things when compared to woman, which includes creativity. The authors argued that men's creative abilities are less affected than females are, by feedback and compensation.

A key trend in these studies is the link between the role of employees and organisational innovation. The next section builds on this notion, that for firms to be innovative, they must have employees that engage in the discretionary extra role behaviour of EI.

2.3.4. Employee Innovation

Employee innovation has attained the interest of scholars and practitioners for years and is considered a basic component of a successful organisation (Grošelj et al., 2021). From the previous section, that looked at ways of fostering innovation, a clear trend is that employees being able to innovate is a crucial determinant for an innovative organisation. The study by Kwon and Kim (2020) directly indicates that employee engagement is key driver of innovative behaviour in employees. By way of motivating employees and reducing their job strain, organisations can enhance innovation (Delma & Pekovic, 2018). The analysis by Kremer et al. (2019) also directly indicated that knowledge sharing can enable employees to get the most out of the organisation's knowledge bases and be more innovative. Similarly, education, employee age, gender and tenure are all employee-related aspects that may enhance innovation (Kong et al., 2022; Lee et al, 2020; Schubert & Andersson, 2015; Woods et al., 2018).

In this regard, as a critical source of organisational innovation, individual EI comprises a micro-foundation of firm innovation (Felin et al., 2015; Mokhber et al., 2018 Lukes & Stephan, 2017). Firm innovation originates from new ideas that are created, supported and executed by its people (Coetzer et al., 2018). Of the factors driving innovation, people are considered as one of the primary drivers of organisational success (Do et al., 2018).

Furthermore, EI is not a vital component of an employee's job description, and it is not factored into their performance and reward system (Amankwaa et al., 2019; Janssen, 2000). This may be as EI is a discretionary extra role behaviour, which exceeds the employee's formal job requirements (Coetzer et al., 2018). Leadership is therefore an important determinant for employees to engage in this extra role behaviour, which has been confirmed by past research (Hackett et al., 2018). Despite the many antecedents to foster innovation, leadership is considered as one of the most significant drivers of innovation (Alblooshi et al., 2020; 2016; Mokhber et al., 2018).

Given the favourable consequences of organisational innovation and the specific role of employees in enabling this innovation, it is critical that organisations have leaders that can inspire and motivate employees in innovative behaviour.

2.4. Leadership

2.4.1. Background

The significance of innovation has been underlined; however, leadership is still required to foster innovation (Alblooshi et al., 2021; Hughes et al., 2018). Leadership is one of the most relevant organisational facets, as the success of an organisation is principally determined by the effectiveness of the leadership process (Lin et al., 2018). Leadership has been identified as one of the most critical predictors of innovation (Grošelj et al., 2021). This is as certain leadership styles and characteristics have a positive impact on employee organisational citizenship behaviour and performance (Hassi, 2019; Miao et al., 2018). Leaders therefore by way of influencing employee behaviours can directly influence organisational outcomes.

Leadership is a widely discussed and popular research topic with substantial managerial implications (Zhu et al., 2019). The researchers reveal that over the history of leadership studies, leadership research has seen significant growth with thousands of scientific studies documenting varying leadership-based investigations. This history reveals that the construct of leadership is multifaceted and ever changing, however this hinders the mastery and progression of the concept (Clark & Harrison, 2018). The authors indicated that earlier leadership theories were based on personality and traits, including the Great Man Theory. Post the personality era the influence and behaviour eras explored leadership styles in terms of power dynamics, attitudes and behaviour. As organisations changed contemporary leadership theories focused on leader-employee relations. In this regard, scholars started to observe leadership concepts such as transactional, transformational and charismatic leadership, with focus on leader-member exchange and the effect of these leadership styles on varying employee, organisational and performance outcomes (Lord et al., 2017).

2.4.2. Level 5 Leadership

Level 5 leadership is one such leadership style that can lead to exceptional organisational performance (Collins, 2001a, 2001b). L5L is characterised by PH and PW, and this leads to high performing companies (Collins, 2001a). In his book “Good to Great,” Collins noted that PH is categorised by level 5 leaders that “channel their ego needs away from themselves and into the larger goal of building a great company,” (Collins, 2001a, p. 21). They embody the traits of been “modest, humble, quiet, understated, mild-mannered and self-effacing,” (Collins, 2001a, p. 27). The direction is on the importance of others including employees, in building a successful organisation. The second aspect that makes up the duality of L5L is PW and was described by Collins as unwavering resolve, high ambition and perseverance. The focus is on an obsessive desire to make the company a success, putting the company first at the leaders own personal cost (Collins, 2001a). Much has been documented about other aspects of Collins’ work, however minimal is documented in academic literature on L5L (Caldwell et al., 2017; Zhou & Wu, 2018). This research therefore aims to add to existing leadership studies, by understanding how L5L traits are related to EI in the presence of EV.

2.4.3. Leadership and Innovation

Given the importance of innovation to organisational longevity and success, research has focused on determining the antecedents of organisational innovation (Lee et al., 2020). Leadership is one such antecedent as researchers realised the potential in understanding the leader's capability to motivate employees in innovative behaviour. Consequently, over the last decade a vast amount of research has been done on leadership as a predictor of EI (Hughes et al., 2018; Lee et al., 2020).

A systematic analysis by Hughes et al. (2018) reviewing 195 empirical studies, of which 80% were done over the last 10 years, covered the effects of transformational, transactional, empowering, authentic and servant leadership on innovation concepts. Several gaps in the existing literature were noted by the authors. Firstly, a lack of theoretical clarity exists on which leadership styles have the greatest influence on innovation and consequently the authors call for more focus on leadership traits as opposed to broader leadership styles. Secondly the relationship between the two constructs is highly inconsistent and there is a need to emphasise under researched mediating variables across leadership styles. This view is reinforced by Grošelj et al. (2021) and Mokhber et al. (2018) who all emphasised the inconsistency of findings in leadership and EI studies. The relationship between L5L and its relevant traits was notably missing from the analysis.

In a similar descriptive study by Alblooshi et al. (2021), the authors included several additional leadership styles to their analysis. The authors concluded that the leadership styles directly or indirectly have a significant positive effect on organisational innovation. Leadership styles such as entrepreneurial, strategic, integrative and political directly influence organisational innovation. Styles such as authentic, charismatic, ethical, and servant leadership can indirectly impact organisational innovation. Transformational and transactional leadership styles can both directly and indirectly influence organisational innovation. Again, the construct of L5L and related traits were missing from the literature. The importance of leadership for EI has been noted, however it is of vital importance to consider the most appropriate leadership style to enhance EI (Mokhber et al., 2018). James McGregor Burns, a political scientist and top authority on the study of US presidents, in his 1978 book "Leadership" identified two forms of leadership styles,

transformational and transactional (Burns, 1978; Lord et al., 2017; Raffo & Williams, 2018). Transactional leadership embodies an exchange-based relationship through reward and punishment, whilst transformational leadership considers followers requirements and goals, aiming to motivate them to greater aspirations beyond self-interest. It is often proposed that transformational leadership will have a greater affiliation with EI that transactional leadership (Hughes et al., 2018). This was confirmed in a meta-analytic study where the researchers validated that transactional leadership is not a strong predictor of creativity (Lee et al., 2020).

Transformational leadership is founded on the dimensions of inspirational motivation, idealised influence, intellectual stimulation and individualised consideration (Bass, 1985; Hackett et al., 2018). Amongst a vast array of leadership studies, transformational leadership is believed to be more effectual in advancing innovative behaviour based on the potential of such leaders to motivate and inspire followers to be innovative (Mokhber et al., 2018). The leadership style that has undergone the most extensive examination in studies related to leadership and innovation is transformational leadership (Kark et al., 2018). Several studies support a significant direct or indirect positive influence of transformational leadership on EI and firm innovation. Research by Mokhber et al. (2018) supported a direct and positive influence of transformational leadership on organisational innovation. The positive affiliation between the two constructs is enhanced when psychological empowerment serves as a moderating variable (Grošelj et al., 2021). Kark et al. (2018) contended that transformational leadership partially influences creative behaviour via 'situational promotion self-regulatory focus' and transactional leadership hampers creative behaviour through 'situational prevention self-regulatory focus'. A systematic analysis considering transformational leadership and creativity concluded that the majority of the direct associations between transformational leadership, employee creativity, and selected mediating mechanisms are statistically significant (Koh et al., 2019). However, while the overall impact of transformational leadership as a predictor of creativity is favourable, the direct effect turns negative when considering the mediating variables.

The researchers highlighted the inconsistency of past results with some instances showing insignificant and sometimes negative relationships in transformational leadership and creativity studies (Koh et al., 2019; Miao et al., 2012).

Transformational leaders often impact others through their charismatic personalities and idealised influence (Burns, 1978; Raffo & Williams, 2018). They often use an appealing personality to connect with followers (Bass, 1985; Soomro et al., 2021). Charisma forms a key component of transformational leadership (Lord et al., 2017). This idealised influence dimension denotes the degree to which a leader displays charismatic behaviour to inspire followers to see them as role models (Koh et al., 2019). Appeal and personal attraction enable leaders with charismatic traits to influence others (Raffo & Williams, 2018).

However, there a is a negative side to charisma, as some charismatic leaders are known to shout, ridicule and exploit employees, as evidenced by real business world examples including Steve Jobs and Jeff Bezos (Lee et al., 2018). Steve Jobs often considered a prototype of a transformational leader, has been described to humiliate others, was impulsive, took credit for the work of others, was dishonest and did not believe that the rules were applicable to him (Isaacson, 2011; O'Reilly & Chatman, 2020). Recent research has emphasised the dark side of charisma. Vergauwe et al. (2018) defined charisma using a rating scale. Depending on which point on the scale the leader is situated, it can lead to confidence, risk tolerance, vision and strong presence, but at elevated levels it can show arrogance, recklessness, fantastical achievements and dramatic appeals for attention. The researchers argued that leaders with high levels of charisma give grand visions and plans, however these are frequently unsuccessful due to the failure to consider the operating reality, practical limitations and the required effort and hard work to implement. They often do not take feedback showing that their strategies are not functioning by making excuses, tampering with the outcome measurements and not admitting to being wrong. Raffo and Williams (2018) discussed that this dark side is realised when such leaders engender loyalty and trust from employees and then manipulate them through verbal or emotional abuse. Charismatic leaders can: firstly, communicate an overrepresentation of prospects and an underestimation of resources needed to achieve a business goal, secondly, by virtue of their strong communication skills, detract employees from entirely evaluating challenging or alternate views and thirdly

place their own needs above those of the business (Raffo & Williams, 2018). In view of the inconsistency of results of studies between transformational leadership and innovation concepts and the discussed dark side of charisma, there is a need to investigate other leadership styles as predictors of EI. Alblooshi et al. (2021) support this view and given the wide spectrum of studies on transformational leadership and EI, the researchers called for more research on styles outside of transformational leadership which has sufficient research.

Recent news is proliferated with instances of leaders with the traits of arrogance, overconfidence and narcissism (Kelemen et al., 2023). The authors suggest that they frequently ignore feedback and display a non-existence of empathy. In the current changing and dynamic business environment, the typical top-down leadership is becoming outdated, and researchers have focused more on bottom-up leadership approaches which principally centres around leaders who do not view themselves as the top of the pyramid but instead the base of their followers and place emphasis on developing their employees (Wang et al., 2017). In “Good to Great” the idea that leaders must be charismatic was brought to question (Collins, 2001a). The author revealed that the highest performing organisations, with consistent positive outcomes were led by individuals with the traits of modesty, introversion, calmness and humility (Collins, 2001a; Raffo & Williams, 2018). Additionally, these level 5 leaders were extremely ambitious and set high standards. This perseverance and intense resolve helps them to achieve results and execute plans with a “workmanlike diligence,” (Collins, 2001a, p. 39), which contrasts with the high charisma leaders discussed by Vergauwe et al. (2018). The CEOs identified by Collins (2001a) were far from the charismatic leaders that the author referred to as individuals with big personalities and likened to celebrities.

In addition to Apple Inc’s CEO, Tim Cook, business leaders that were not considered charismatic but led high performing companies include (Raffo & Williams, 2018, p. 31): Bill Gates, founder of Microsoft and one of the most successful and wealthiest individuals in the world, is “considered to be hardworking, passionate and a visionary”, while at the same time he is labelled as “quiet, bookish, selfless and introverted”; Ken Chenault, a former CEO of American Express, was defined as “determined, polished and demanding”. At the same time, “he played a key role in mentoring and inspiring others with a quiet warmth that puts people at ease and an

ability to gain trust through an unmistakable modesty"; Brenda Barnes a former CEO of Pepsi Cola was not charismatic, she was not someone that enjoyed public speaking or the centre of attention, was composed and deemed to be introverted, and yet she was at one point featured by Fortune magazine as one of the top ten most powerful females in the US (Raffo & Williams, 2018, p. 31). In this context, researchers and businesses have shown an increasing interest in developing leaders that place the interests of their followers and organisations ahead of their own (Lapointe & Vandenberghe, 2018).

There is increasing focus amongst researchers and practitioners on the concept of leader-expressed humility and humble leadership (Kelemen et al., 2023). As an interpersonal behaviour characterised by the disposition to observe oneself critically and objectively, appreciate the value and inputs of other individuals and a willingness to be taught, leader humility is known to positively impact employee job satisfaction, creativity and performance (Lehmann et al., 2023). Researchers however acknowledge that there is minimal academic studies on the connection between leader humility and EI (Ye et al., 2020; Zhou and Wu, 2018). A study based on 451 member–leader dyads in China found that leader humility predicts team creativity (Wang et al., 2017). Ye et al. (2020) proved that leader humility positively effects employee creative performance through team humility. With humility emerging as a focus of leadership research, it culminated with the theory of humble leadership (Kelemen et al., 2023). A study on humble leadership by Zhou and Wu (2018) indicated that humble leaders create a learning organisational climate that facilitates EI.

Although previous research has shown that followers, teams and organisations benefit from leader-expressed humility, Zapata and Haynes-Jones (2019) argued that leader humility can have harmful consequences on leader effectiveness and leader-directed behaviour. The authors found that humble leaders can be perceived as less agentic and hence less effective than their equivalents that do not possess the humility quality. It is imperative to recognise this possible downside to leader humility, as even though past investigations have concentrated on the positives of humble leadership on individual and organisational outcomes, a critical omission in these past studies on leader humility, is that they exclude consideration of the trait of leader PW in combination with PH. Collins (2001b) also emphasises that a true level

5 leader must have the combined traits of PH and PW in equal parts. This is consistent with a study on L5L and organisational citizenship where PH and PW were considered with equal weighting in L5L (Sarfraz et al., 2022).

With the need to counter the swift changes in the current global business context and be successful in a knowledge-based economy, with increased dependence on people, scholars have started to review a contemporary leadership style, namely servant leadership and its influence on organisational outcomes (Iqbal et al., 2020). Servant leadership considers leaders as the first amongst equals, it focuses on the development and empowerment of followers and emphasises the significance of generating value external to the organisation by showing interest in the greater community (Newman, Neesham, Manville & Tse, 2018). Current meta-analytic studies have also indicated that relative to other leadership styles (including transformational) servant leadership may have a better predictive validity for various follower outcomes (Hoch et al., 2018). Subsequently, scholars have now begun to study the influence of servant leadership on EI (Newman, Neesham, Manville & Tse, 2018; Zhu & Zhang, 2020).

Iqbal et al. (2020) found that servant leadership has a positive and significant relationship with EI. In a similar study the positive relationship between servant leadership and EI was mediated by knowledge sharing and this relationship can be strengthened by employee organisational identification and learning goal orientation (Zhu & Zhang, 2020). Research in the Russian banking sector found that servant leadership supports creative performance (Karatepe et al., 2019). Servant leadership is a people orientated style, prioritises the interests of others and is characterised by authenticity and humility (Iqbal et al., 2020). Some business leaders and academics have thus recommended that L5L and servant leadership may represent the same construct (Reid et al., 2014). The researchers, however, note that the fundamental attributes of servant leadership more closely align to the PH concept and do not include the trait of PW. This is therefore also inconsistent with the notion of a level 5 leader, which includes equal parts of PH and PW (Collins, 2001a). The author stated that L5L is not just about humility and modesty, but an equal fierce resolve that differentiates it from servant leadership.

These research studies indicate the significant interest amongst scholars in the relationship between leadership styles and EI. However, despite the potential value from investigating the relationship between L5L and EI, this was not considered previously. Studies have found that transactional leadership does have a significant association with EI. While servant and humble leadership are similar concepts to PH, they do not include the trait of PW and thus may be lessor leadership approaches than L5L (Reid et al., 2014). Collins (2001a) argued that leaders with just the humility trait may be considered as weak, which was supported empirically by Zapata and Haynes-Jones (2019). Studies on transformational leadership and innovation have been extensive but have yielded inconsistent results and researchers have called for studies outside of transformational leadership. In a critique by Alvesson and Einola (2019) the authors argued against the practical validity of "positive forms" of leadership, including transformational and servant leadership. The authors critique of transformational leadership describes the shortcomings of the concept as follows, "ambiguity about underlying influence processes, overemphasis on dyadic processes, ambiguity about transformational behaviours, insufficient specification of negative effects, and heroic leadership bias" (p. 391-392). With regards to servant leadership, the researchers contended that the practicality of leaders serving all stakeholders is unlikely in the current business context with conflicting stakeholder interests, and different notions of moral understanding and feasibly trying to "make everyone happy."

In view of the above discussion, it is vital to identify the right type of leadership style to enhance innovation. While scholars have placed significant attention on styles such a transformational, transactional, humble and servant leadership and shown positive results, results have also shown inconsistency. Additionally, the critical review of these leadership styles revealed several fundamental concerns. This evaluation paves the way for the current research, which considers the understudied L5L as a predictor of EI. In essence, L5L comprises two basic traits: PH and PW. Hughes et al. (2018) called for studies to move away from investigating broad leadership styles and EI and to focus more on traits.

While innovative leadership is imperative for promoting innovation, EV plays a crucial role in supporting leaders to foster innovation and creativity (Kremer et al., 2019).

2.5. Employee Voice

2.5.1. Background and Definition

The first contributor to EV was Albert Hirschman (1970), in which he argued that employees as an alternative to withdrawal in time of frustration, can exhibit voice behaviour. In principle, he defined voice as the productive effort of employees with the intention of changing an unsatisfactory work environment. Subsequent studies on voice have extended the concept from simply a response to unsatisfactory situations to that of extra role behaviour, namely how EV may be used as a means whereby employees provide constructive suggestions intended to improve instead of criticising (Zare & Flinchbaugh, 2019). Consequently, the concept of EV now means different things to different people (Townsend et al, 2022). “Employee voice is a broad and complex construct, and each discipline has developed different conceptualisations of employee voice” (Park & Nawakitphaitoon, 2018, p. 18).

EV denotes how employees attempt to give their opinions and influence their work (Wilkinson et al., 2020). Research has addressed both promotive voice, employee recommendations on opportunities and actions that will improve future organisational processes and prohibitive voice, communication with the intention to correct problems that could be harmful to the business (Chamberlin et al., 2017; Shin et al., 2022). Carnevale et al. (2017) defined voice as an employee’s communication of helpful ideas and recommendations that could enhance organisational outcomes, instead of just maintaining the status quo. Ng and Lucianetti (2018) defined EV similarly, namely as constructive, modification-focused communication envisioned to enhance the organisation’s outcomes (Barry & Wilkinson, 2022). Existing literature indicates that EV has ambiguous consequences and effects on organisational outcomes (Selvaraj & Joseph, 2020).

2.5.2. Importance of Employee Voice

As a type of discretionary employee extra role behaviour, EV is different to other types due to its challenging nature. It can be disruptive and expensive to organisations as it is change focused and challenges the status quo (Chou & Barron, 2016). An employee can also upset their relationship with others in an organisation by way of their voice (Ullah et al., 2020). This is particularly prevalent in instances of

prohibitive voice, showing concern about an organisation's challenges which can undermine relationships between employees (Shin et al., 2022). In contrast, it can be of significant value to management as it benefits organisational performance (Wilkinson et al., 2020). EV supports continuous improvement in organisational processes, thus enhancing performance and outcomes (Chamberlin et al., 2017). Contrasting views can result in more informed decisions and outcomes (Ullah et al., 2020). It is not only of critical importance to successful organisations, but also for enhancing employee experiences (Townsend et al., 2022). Employees are strategic performers in organisations and EV has a direct impact in improving employee loyalty, commitment, absenteeism and performance (Wilkinson et al., 2018).

In pursuit of achieving high performing and sustainable organisations, interest amongst business leaders in EV as a vital organisational component has grown and researchers have sought to identify the antecedents to EV (Kwon & Farndale, 2020). The researchers note that trust in leadership is a critical underlying determinant of employees' propensity to exhibit voice (Mowbray et al., 2015). It is thus imperative to understand the relationship between EV and leadership.

2.5.3. Employee Voice and Leadership

There are two prominent research streams on EV, the first being that an employee's internal motivation enhances their inclination to speak up and the second that a leader's behaviour influences EV (Soomro et al., 2021). Studies have suggested that factors that facilitate EV include social exchange and employee personality traits (Chou & Barron, 2016). Employees use social cues to evaluate whether to adopt voice behaviour; thus an organisations culture and climate can be viewed as critical variables influencing EV (Chamberlin et al., 2017). The researchers also identified that personal initiative, felt responsibility and engagement are strong predictors of EV. Kwon and Farndale (2020) emphasised the focus on micro-level individual antecedents of voice, including individual centred factors, skill and staffing levels, individual differences, organisational attitudes and perceptions and voice climate (Mowbray et al., 2015). Kremer et al. (2019) noted that EV is positively related to an employee's organisational tenure. These arguments suggest that EV is dependent on various psychological and contextual factors and is consequently relatively independent of leadership.

In contrast, the second stream of research notes that leadership can promote voice behaviour. Chen et al. (2018) recognised that transformational leadership positively effects a followers' promotive and prohibitive voice. In a study on the linkages between servant leadership, organisational commitment, voice and antisocial behaviour, the researchers identified a positive relationship between servant leadership and EV (Lapointe & Vandenberghe, 2018). Chen and Hou (2016) in a study of 191 employees based in research and development institutions in Taiwan found that when followers perceive ethical behaviour from leaders, follower voice is increased. Studies on leader humility and voice have generated inconsistent conclusions. Lin et al. (2019) identified that a followers sense of power acts as a mediator in the relationship between leader humility and EV. In contrast, leader humility affects EV in a contradictory manner through the employees' sense of security (Bharanitharan et al., 2019).

Despite a vast amount of research in the fields of leadership and EV, to the researcher's knowledge no empirical research exists to support the relationship between L5L and EV. The current research therefore aims to understand this association.

Carnevale et al. (2017) indicated that voice behaviour in improving organisational results, altered the status quo and thus voice, innovation and creativity, although each has a different set of characteristics, they are closely related constructs. The researchers suggest that research on innovation should include voice.

2.5.4. Employee Voice and Innovation

Employee voice is a means for driving employees to innovate (Ashiru et al., 2022). The study by Chen and Hou (2016) recognised that EV is an important mechanism for leadership activities to enhance creativity. The researchers noted that EV fosters favourable creativity reviews, as voice behaviours prompt creative ways of thinking. Employees who display a strong voice are generally considered as creative, especially when those views generate positive organisational outcomes. When these employees feel that their opinions and suggestions are considered by managers and have an impact on the organisation, they are more likely to put in the extra effort by providing new innovative ideas or developing creative business resolutions. Zare and

Flinchbaugh (2019) highlighted that voice and creativity are similar behaviours and earlier research demonstrated, like creativity, how individual voice behaviour offers new and valuable ideas to a present scenario.

The position of voice as an extra-role behaviour suggests that employees may exhibit EV even when work circumstances are satisfactory, namely they may use voice to improve, as opposed to highlight and criticise challenges (Ullah et al., 2020). As an extra role behaviour, this implies that EV is not ordinarily in an individual's job description, and it goes beyond a supportive nature as it involves challenging current states or the communication of ideas that can lead to debate. The researchers note that voice and whistle blowing are distinct concepts, and comparatively lesser studies have focused on EV which is understood to enhance organisational performance.

Past studies have confirmed a positive relationship between EV concepts and innovation. At an organisational level, in a longitudinal study on Canadian organisations, researchers found a positive relationship between voice practices and organisational innovation (Shin et al., 2022). At an employee level in a study covering Indian organisations from varying industries, a positive relationship was found between EV and EI (Selvaraj & Joseph, 2020). These findings were consistent with Ashiru et al. (2022), who identified a positive relationship between EV and EI in service organisations.

Although previous research confirms a positive relationship between EV and EI, no existing research exists in the South African context and South African manufacturing context. Research indicates that an employee's inclination to speak up or voice behaviour is influenced by macro-factors or national culture values (Kwon & Farndale, 2020). Studies outside of the developed world and non-Western contexts are particularly infrequent (McKearney et al., 2023). Additionally, the studies on EV and EI discussed did not include the leadership component, that connects to EV.

2.5.5. Level 5 Leadership, Employee Voice and Innovation

In their systematic review of leadership and innovation studies, Hughes et al. (2018), noted that many mediating constructs with sound theoretical rationale were identified. However, the researchers called for future research to diversify from over

emphasis on motivational based meditators and to focus on more understudied mechanisms. The most researched mediating variables in leadership and innovation studies included psychological empowerment, intrinsic motivation and self-efficacy. Critically, of the 76 research papers reviewed that included mediating variables, not one included EV as a mediator.

Subsequent studies have positioned to fill this research gap. Rasheed et al. (2021) confirmed that EV mediates the positive relationship between transformational leadership and both process and product innovation. Ullah et al. (2020) and Jin et al. (2022) found that ethical leadership is a positive predictor of EI, and that EV mediates this relationship. In a study on paternalistic leadership, it was found that EV and leader–member exchange mediate the positive relationship between paternalistic leadership and EI (Nazir et al., 2021).

While interest in EV as a mediating mechanism to the association between leadership styles of EI is growing, the link between L5L, EV and EI remains unexplored.

2.6. Research Gap

The review of existing literature identified several research gaps. Firstly, there is a lack of theoretical clarity on which leadership styles have the greatest influence on innovation and a call for greater focus on specific traits as opposed to styles. Secondly, the influence of L5L on EI remains unknown, and researchers call for more leadership and EI studies outside of transformational leadership, which has adequate research. Thirdly the influence of L5L on EV has not been tested in previous literature. Fourthly, the influence of EV on EI in the South African manufacturing cultural context is untested. Lastly, there is a call to include more under-studied mediating variables such as EV in leadership and innovation research. The mediating role of EV on the relationship between L5L and EI has not been considered in existing literature.

Filling this gap will contribute insights into how specific leadership behaviours influence and drive innovation among employees, providing practical implications for organisational success and competitive advantage in the manufacturing sector.

2.7. Conclusion

The literature review revealed through SET that trust in a leader–member exchange is directly correlated to EI and EV. While the literature may suggest that the PH trait of a level 5 leader may support trust and social exchange, the combined influence of L5L traits including PH and PW, in fostering innovative employee behaviour is not yet understood. The need to understand the nature of this relationship has become particularly important for two fundamental reasons. Firstly, the importance of innovation as a contributor to organisational productivity, success and sustainability, particularly in a turbulent global business environment and the South African manufacturing context. Secondly an increased focus on people-centred leadership styles that focuses on the interest of others is crucial to achieve success in a knowledge-based economy. Apart from the work of Jim Collins, empirical studies on L5L have been limited.

Researchers have also called for studies on leadership and innovation to include under researched mediating variables, such as EV. The literature review indicated that studies on EI should include voice and as an extra role behaviour EV forms a critical part of the proposed social exchange relationship.

This chapter provided the theoretical background and introduced SET that grounded this study and the constructs of L5L, EI and EV. In the next chapter, hypotheses and a theoretical model are developed based on the identified gaps in the literature.

3. Chapter Three: Hypotheses

The hypotheses and theoretical model proposed in this chapter were established from the study's aims identified in Chapter One and reinforced by the literature review presented in Chapter Two.

3.1. Level 5 Leadership and Employee Innovation

Conceptually, the principles of L5L are closely connected to the fundamentals of the innovation process. The literature review revealed that level 5 leaders can positively influence the behaviour of followers and can therefore engender their trust, support and commitment to providing additional effort to attain organisational outcomes (Caldwell et al., 2017; Sarfraz et al., 2022; Wang et al., 2018). It also indicated that EI is a discretionary extra role behaviour, that requires extra effort beyond job specifications (Coetzer et al., 2018; Zare & Flinchbaugh, 2019). In an examination of SET, it is suggested that level 5 leaders, through their behaviour of treating their employees fairly and putting them first, can support their followers and gain their trust and commitment, thus influencing their followers to participate in EI.

Furthermore, while studies on leadership styles and EI are well developed, to date no study has been undertaken to evaluate the influence of L5L on EI (Alblooshi et al., 2021; Hughes et al., 2018; Lee et al., 2020). Alblooshi et al. (2021) suggested that research outside of transformational research, which is well studied is required. A lack of theoretical clarity exists on which leadership style is most effective in fostering EI, and studies have yielded inconsistent results (Grošelj et al., 2021; Hughes et al., 2018; Mokhber et al., 2018). There is a further call to focus on more nuanced leadership traits as opposed to broad styles (Hughes et al., 2018). In recent quantitative research, Sarfraz et al. (2022) identified a positive relationship between L5L and organisational citizenship behaviour. Zare and Flinchbaugh (2019) discussed that the broad concept of organisational citizenship behaviour is well studied and there is limited research on specific types of organisational citizenship or discretionary extra role behaviour such as EI and EV. Outside of this and the work of Jim Collins, very little empirical research has been done on the combined traits of L5L (Caldwell et al., 2017; Zhou & Wu, 2018). The following hypothesis is thus framed:

H1: There is a positive relationship between level 5 leadership and employee innovation.

3.2. Level 5 Leadership and Employee Voice

Employee voice is an extra role behaviour that is indicative of employees going beyond their specified job roles to improve the organisation (Chen & Hou, 2016; Ullah et al., 2020; Zare & Flinchbaugh, 2019). Through the lens of SET, this study suggests that level 5 leaders can influence their followers to participate in voice behaviour. Previous research studies have found a positive relationship between various leadership styles and EV (Chen & Hou, 2016; Chen et al., 2018; Lapointe & Vandenberghe, 2018; Ullah et al., 2020). However, no research exists that evaluates the relationship between L5L and EV. Additionally, studies on humility and voice have yielded inconsistent results (Bharanitharan et al., 2019; Lin et al., 2019), this study aims to further investigate the concept of PH and EV, through the duality of L5L. Given the recommendation by Carnevale et al. (2017) that studies on innovation should include EV, it is therefore hypothesised:

H2: There is a positive relationship between level 5 leadership and employee voice.

3.3. Employee Voice and Employee Innovation

Ullah et al. (2020) highlighted that EV as an extra role behaviour, goes beyond a supportive nature as it involves challenging the status quo or communicating new or novel ideas which others can debate. Past research has shown a positive relationship between EV and innovation (Ashiru et al., 2022; Selvaraj & Joseph, 2020; Shin et al., 2022). EV is, however, influenced by macro-factors or national culture values (Kwon & Farndale, 2020) and studies in the developing world are infrequent (McKearney et al., 2023). Given that no research of this nature has taken place in the South African manufacturing context, the following is hypothesised:

H3: There is a positive relationship between employee voice and employee innovation.

3.4. Mediating Effects of Employee Voice

With an objective of understanding how to increase EI to mitigate the research problem, L5L was identified as a key predictor. However, Hughes et al. (2018) called for future research on leadership styles and EI to include more mediation variables and to particularly break away from overemphasis on motivational process mediators and to focus on more understudied mechanisms. EV has been shown to mediate the relationship between ethical, transformational and paternalistic leadership and EI (Nazir et al., 2021; Rasheed et al., 2021; Ullah et al., 2020). However, EV as a mediator in the relationship between L5L and EI has not been studied previously. It is therefore hypothesised:

H4: Employee voice mediates the relationship between level 5 leadership and employee innovation.

3.5. Hypothesised Theoretical Model

Figure 1 depicts the theoretical model defined considering the studies objective and literature review. The study aimed to evaluate whether L5L positively influences EI and whether EV mediates this relationship. Through the lens of SET, L5L forms the independent variable, EI the dependent variable and EV is the mediator. The model provides a theoretical basis for enhancing EI, thus providing organisations with a tool to mitigate the research problem. It also fills the theoretical gaps identified in the literature review.

The next Chapter defines and defends the research methodology and design to test the hypothesised theoretical model.

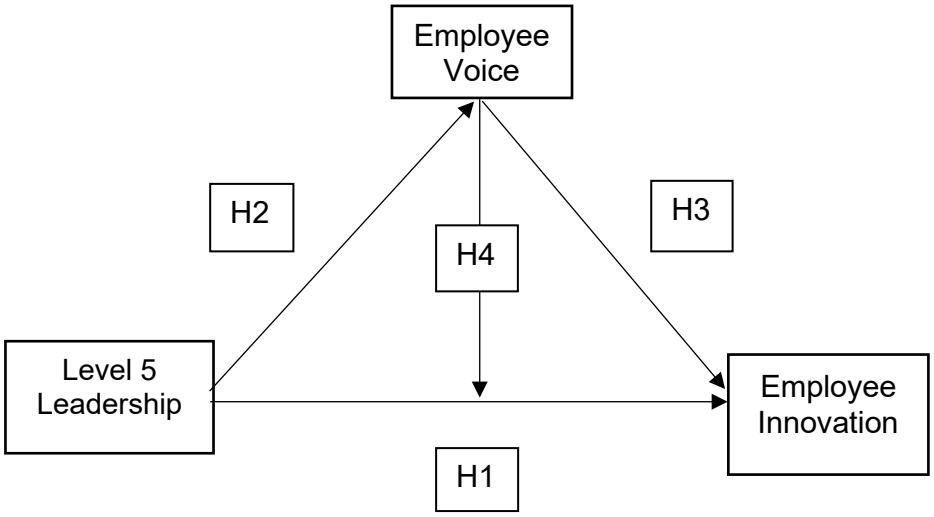


Figure 1: Hypothesised Theoretical Model

Source: Author's own (2024)

4. Chapter Four: Research Methodology and Design

4.1. Introduction

This chapter defines the research process and methodological and statistical choices used to test the hypotheses derived in the preceding chapter. A review of the existing literature was provided in Chapter Two, relating to the constructs of L5L, EI and EV. The outcomes of this examination of past research offered the basis for a structure that depicts the relationships between the concepts recognised. Consequently, hypotheses were determined based on those outcomes. Lastly, a theoretical model was presented and evaluated as part of this research. Based on this review, the study intended to understand whether a positive relationship exists between L5L and EI, and whether EV mediates this relationship. By understanding this relationship, the objective of this research was to establish a framework to support manufacturing organisations to advance innovation. To this end, this chapter presents the choice of research methodology, the population targeted, the unit of analysis and the sampling method and size. Additionally, it focuses on the measurement scale utilised, the data collection procedure undertaken, the data analysis approach and concludes with the limitations of the study.

4.2. Choice of Methodology

4.2.1. Philosophy

As opposed to research being directed by the choice of methodology, it is the philosophy standpoint of the researcher considering the social science occurrence under investigation that should determine the methodology selection (Holden and Lynch, 2004). Consequentially, the philosophy assumed in the present study was in alignment with the methodological choice and research problem. Holden and Lynch (2004) differentiated between subjectivist and objectivist scales for research philosophical perspectives. The former method is based on the notion that knowledge is relative and is unable to be gained through discovery, but instead is subjectively obtained. In comparison, objectivist researchers are realists, of the belief that comprehension of a physical reality is only possible by way of observing and measuring. This study followed an objectivist scale, as the literature review

definitively indicated that the various constructs are well researched. The objectivist scale was thus deemed appropriate for the study.

The authors further expressed that a positivist research philosophy is aligned to the objectivist scale. By undertaking a positivist research philosophical view, the research addressed the objective to understand the relationship between L5L and EI, including the mediating effects of EV on this relationship. This philosophy takes the view of natural sciences, is based on factual proof, and reality and truth are objective and singular (Green, 2017). It focuses on evident and measurable facts that would result in credible data and tests and validates hypotheses that are developed from existing theory (Muij, 2004; Saunders & Lewis, 2012). The choice of a positivist research philosophy has been further substantiated as it has been used in similar studies evaluating other leadership styles and innovation (Chen & Hou, 2016; Iqbal et al., 2020; Jin et al., 2022; Nazir et al., 2021; Zhu & Zhang, 2020). A positivist philosophical research approach is hence aligned with the studied topic.

4.2.2. Approach to Theory Development

Creswell and Creswell (2017), state that in quantitative research, a deductive approach is used for theory, where theory forms the starting point of the study, enabling the theory to be tested instead of developed. The study adopted a deductive approach as it involved developing research questions and testable hypotheses from an existing theoretical framework and the collection, analysis, and testing of data to confirm or revise the theory (Creswell and Creswell 2017; Saunders & Lewis, 2012; Woiceshyn & Daellenbach, 2018). A deductive research approach initiates from a literature review, theoretical grounding, development of hypotheses and clear results and findings (Ullah et al., 2020). Leadership and innovation theory, as well as the relationships between the constructs are well developed (Hughes et al., 2018). A methodology that tests this theory is therefore most appropriate. In this research the theoretical background, namely SET was linked to the theoretical constructs of L5L, EI and EV, from which testable hypotheses and a theoretical model were established to evaluate the relationships between the constructs. Data was collected, tested and analysed to assess the hypotheses developed, thereby adding to existing theory. In a similar study on transformational leadership and EI, the theories on the constructs

were narrowed down into testable hypotheses which were tested to confirm the theories (Sehgal et al., 2021).

4.2.3. Methodological Choice

The research methodological choices are quantitative, qualitative, and mixed methods (Morgan, 2013; Mouton, 2001). The present study applied a quantitative research design within the positivist research philosophy. Such studies involve testing theory by way of identifying variables and relating these to hypotheses and the information can be measured numerically and statistical analysis performed (Creswell & Creswell, 2017). A quantitative research study involves collecting numerical data and using statistical applications to analyse the data (Creswell & Clark, 2011). It entails gathering numerical data through surveys based on questionnaires and analysing the numerical data by way of statistical tools and approaches (Mouton, 2001; Saunders et al., 2009). In quantitative methodology studies the researcher is detached from the individuals under study (Mouton, 2001), implying that the researcher can focus on data measurement and evaluation (Morgan, 2013). The methodology allows the examination of individuals on a large scale (Morgan, 2013; Mouton, 2001).

In contrast, qualitative studies are used to collect data by way of discussion and interviews through wide-ranging questions (Morgan, 2013). The author states that qualitative studies involve close interaction between the researcher and the individuals under research, with the researcher becoming a tool for recording and gathering the data. It is appropriate for assessing individuals on a lesser level (Morgan, 2013; Mouton, 2001). This research necessitated the collection of numerical data from a large population, using a survey based on a questionnaire and statistical tools to evaluate the data. It is clear, given the definitions, that the quantitative methodology as opposed to qualitative is suitable and aligned to objectives of the present study.

Data was gathered using an online survey only, therefore the study was mono-quantitative in nature (Saunders & Lewis, 2012). While multiple or mixed methodological choices may provide richer data, they are anticipated to cover a longer time horizon (Saunders & Lewis, 2012). Due to the constrained timeframe for

this research, a mono quantitative approach was chosen. This method is consistent and appropriate, relative to previous research on the constructs. Additionally, in an analysis of the past ten years of research in the *Leadership Quarterly Journal* it was found that most research in leadership is quantitative based (Gardner et al., 2020). The selected mono-method questionnaire-based survey was further validated due its consistency with similar studies on leadership and EI (Amankwaa et al., 2019; Chen & Hou, 2016; Ullah et al., 2020).

4.2.4. Purpose of Research Design

The study aimed to understand the links between the concepts of L5L, EI and EV, through the lens of SET. Consequently, an explanatory purpose of the research design was primarily used, since the study focused on an identified problem and sought to explain relationships between distinct variables and the impact of the various constructs (Creswell & Creswell, 2017; Kothari, 2004; Saunders & Lewis, 2012).

4.2.5. Research Strategy

The strategy deemed most appropriate to answer the research questions was the survey strategy based on a planned questionnaire. The survey was appropriate for this study as it allowed measurement of the constructs in the research question through standardised questions. Questionnaires are commonly employed in collecting data for a single time frame to evaluate relationships between events or to represent the nature of current conditions (Cohen et al., 2007). Creswell and Creswell (2017) note that studies based on surveys offer a numerical depiction of a category of individuals patterns, attitudes and viewpoints. This can be accomplished by generalising results from a selected sample to the entire population of that sample. This is consistent with the current research that intended to test the associations between constructs for a large population, by surveying a sample of the total population. Oates (2006) stated that positivist philosophy-based research commonly use surveys to measure and test hypotheses. Field surveys remain the most popular data collection tool in leadership and innovation studies (Gardner et al., 2020; Hughes et al., 2018). The research strategy entailed the utilisation of an online survey to collect data because this approach results in a lower bias risk and is time efficient

and cost effective (Morgan & Govender, 2017). The measuring instrument was designed to ensure that all participants answered an identical and standard set of fixed ordered questions (Cohen et al., 2007).

4.2.6. Time Horizon

Due to a constrained time a cross-sectional design was utilised, where the data collection was conducted during a single period (Cohen et al., 2007; Saunders & Lewis, 2012). Hughes et al. (2018) found that most previous research on leadership styles and innovation was cross sectional in nature, meaning that they would produce a result at a specific point in time.

4.3. Research Methodology and Design

4.3.1. Population

The target population for this study was delineated to be supervisors, specialists, managers and executives from perceived innovative manufacturing organisations in South Africa. As the questionnaires were completed from an employee perspective (self-ratings) it was crucial that the participants reported to a leader. Supervisors, specialists, managers and executives therefore constituted a suitable target. Senior level employees were considered appropriate for the study, as including all levels of employees would hinder the legitimacy of the results as moderating influences including less experience at lower levels may have affected EI (Daveri & Parisi, 2015). Managers and professionals are also expected to be more innovative in their respective domains (Daveri & Parisi, 2015), and have close interaction with their leaders, allowing them to provide accurate perceptions of their leader's level of L5L traits. By limiting the population to senior employees, it allows a more homogeneous population with a reduced risk of data variability.

The self-measured approach for the dependent variable, EI is deemed appropriate for the following reasons. Firstly, innovative behaviour is an internal process (Iqbal et al., 2020). Secondly supervisors may take note of only those ideas that impress them and could miss some creative activities (Coetzer et al., 2018; Iqbal et al., 2020; Odoardi et al., 2015). Thirdly, self-measurement has been used in past research (Coetzer et al., 2018; Iqbal et al., 2020; Prieto & Pérez-Santana, 2014). Fourth,

previous studies have shown high convergent validity between employee-measured and leader-measured innovative behaviour (Coetzer et al., 2018; Iqbal et al., 2020; Ng and Feldman, 2013).

In evaluating innovation for this research, the study will focus on innovation that is most pervasive in the manufacturing industry and its primary supply chain. SA saw a 5% decrease in income per capita from 2012 to 2021, and poverty increases resulting in 60% of the nation's population falling in poverty at the national upper poverty line (The World Bank, 2022). The previous chapters discussed that manufacturing plays a key role to support countries with deep poverty to reach economic prosperity (Rodrik, 2016). As SA is a developing nation, manufacturing plays a critical part in driving employment and economic growth, yet the nation's manufacturing sector is underperforming (Kreuser & Newman, 2018). For SA to improve its declining manufacturing productivity, innovation is a critical tool (Kahn et al., 2022). Edwards-Schachter (2018) identified technological, product, process, design, and responsible as critical innovation types. The author also notes that manufacturing entities have been vital in driving these types of innovation through research and development to create new products, embracing fourth industrial revolution technologies to enhance businesses, lean management, manufacturing and business process innovation, and adopting technologies to promote sustainability and green innovation. It is vital to understand the factors that influence EI in SA manufacturing, and the target population thus comprised employees within the South African manufacturing industry.

4.3.2. Unit of Analysis

The unit of analysis is the person or object from which data is collected (Kumar, 2018b). It refers to who or what produces the appropriate data and is being studied (Zikmund et al., 2013; Kumar, 2018b). The individual participants completing the survey make up the unit of analysis, namely the supervisors, specialists, managers and executives.

4.3.3. Sampling Method and Size

4.3.3.1. Sampling Method

The defined population for this study was supervisors, specialists, managers and executives employed in the manufacturing sector in SA. The South African manufacturing sector constitutes approximately 1.5 million employees (Statistics South Africa, 2023). Given that the population is large and impractical to reach, a sample was required that is representative of the population. There were also challenges obtaining a sampling frame. Probability sampling defined as a sampling method to choose a sample randomly from a full population listing (Saunders & Lewis, 2012), was hence not suitable for this study. In cases where there is no complete list, non-probability sampling can be used for sample selection (Cohen et al., 2007; Muijs, 2004; Saunders & Lewis, 2012). In view of this discussion non-probability sampling was considered appropriate for this research.

Purposive sampling, a technique of non-probability sampling whereby units are selected based on the appropriateness of their characteristics for the study (Saunders & Lewis, 2012), was utilised, considering the researcher's judgement, to identify managers within his network that are most likely to support answering the research questions. As an additional sampling tool, snowball sampling was used to increase the sample obtained based on purposive sampling. This is where participants chosen as part of the purposive sample, volunteer others that meet the requirements for completing the questionnaire (Saunders & Lewis, 2012). The use of the technique is in line with prior quantitative research on leadership and EI (Coetzer et al., 2018). Social media and emails were used as a means of snowball sampling, which could result in attracting respondents that did not meet the designated population requirements (Etikan et al., 2016). To mitigate this risk, the survey included a question on the manufacturing sub-sector that the respondents belong to so that unsuitable participants were evaluated and excluded.

4.3.3.2. Sampling Size

Saunders et al. (2019) state that sampling size rules do not apply in the case of non-probability sampling, in contradiction to probability sampling. The authors, however, observe that sample size depends on the research questions and the occurrence

required to be understood. Hence the minimum samples size needs to be evaluated. In terms of the central limit theorem, a sample distribution is assumed normal, if the sample size is sufficiently significant (> thirty) (Creswell & Creswell, 2017; Wegner, 2020). In cases of variability sample sizes would rise (Gorard, 2003). Borg and Gall (1979) noted that greater samples are required in cases of many variables. Section 4.3.6 discusses that structural equation modelling (SEM) was deemed the appropriate statistical analysis method for the study. Ten to twenty participants for each variable would constitute a sufficient sample for statistical analysis using SEM (Kline, 2005). This study consisted of two constructs and a single mediator. The measurement scale used determines the number of indicators and consequent sample size (Oppenheim, 1992). The total number of indicators was limited to 20 to prevent the survey from becoming too lengthy. This comprised 10 dependent variables and 10 independent variables. Considering the threshold suggested by Kline (2005), the optimum number of responses to aim for was 200.

When using partial least squares structural equation modelling (PLS-SEM), a sample size of 10 times the number of independent variables is often deemed appropriate (Hair et al., 2011). The "10-times" rule is widely applied as a common approach for determining sample sizes in PLS-SEM (Kock & Hadaya, 2018). As a variation of this approach, it includes the maximum number of model linkages pointed at an endogenous construct. As the maximum number of arrows directed at any construct is two (L5L on EI and EV on EI), the minimum sample size based on this method was calculated at 20.

A substitute for the above approach, the minimum R^2 method was derived by Hair, Hult, Ringle and Sarstedt (2014). This method relies on the maximum number of arrow heads pointed at a construct in the model, the statistical significance and the minimum R^2 (Kock & Hadaya, 2018). Based on table 1 below, this approach results in a conservative sample size of 110 at the lowest minimum R^2.

Table 1: Minimum R-square Sample Size at 80% Statistical Power

Maximum number of arrows pointing at a construct	Minimum R^2 in the model			
	0.1	0.25	0.5	0.75
2	110	52	33	26
3	124	59	38	30
4	137	65	42	33
5	147	70	45	36
6	157	75	48	39
7	166	80	51	41
8	174	84	54	44
9	181	88	57	46
10	189	91	59	48

Source: Kock and Hadaya (2018)

A third alternative to estimate PLS-SEM sample size proposed by Kock and Hadaya (2018) is that of the inverse square root technique. The researchers suggest that this method provides more appropriate samples sizes than the two previous approaches. Applying this method, based on the 5% significance level and 80% statistical power, the minimum sample size is calculated as follows:

$N_{min} > (2.486 / P_{min})^2$

Where, N_{min} = minimum sample size and P_{min} = minimum path coefficient

Kock and Hadaya (2018) suggest that minimum samples sizes calculated before data collection are preferred over calculations after data collection, and that as a guideline, a minimum path coefficient of 0.197 should be applied, provided the model is free from collinearity. This results in a minimum required sample size of 160.

Consultation of similar studies using PLS-SEM was done to further corroborate the sample size. In research evaluating the mediating influence of EV on the relationship between transformational leadership and process and product innovation, a sample size of 169 responses was tested using PLS-SEM (Rasheed et al., 2021).

Considering the three minimum sample size approaches and similar studies discussed, a target minimum sample size of 160 was set.

4.3.4. Measurement Instrument

Surveys using questionnaires provide for the systematic classification of perspectives, experiences, patterns, and practices within a specific group (Cohen et al., 2007). The authors state that this numerical categorisation facilitates the extension of findings from a representative subset to the entire population, enabling broader generalisation. In this study, an anonymous online questionnaire was utilised through the Qualtrics platform. This self-administered survey served as the primary tool for measuring and examining the connection between L5L and EI and the mediating effects of EV on this relationship.

The questionnaire comprised four sections, as reflected in Appendix A.

Section 1: This part contained a brief introduction into the research, its objectives, and its intended value. It also indicated that responses would be confidential and anonymous.

Section 2: This section included questions to obtain details of the participant, namely nationality, age, gender, years of service at current company, highest level of education, job level and manufacturing sub-sector that the respondent belongs to. This aided in assessing the appropriateness of participants for the research and in managing variables that could influence or impact the study outcomes.

Section 3: The third section consisted of questions to support the participant's view of their leader. Reid et al's (2014) 10-point scale was adapted to measure L5L. The scale comprised five dimensions relating to PH and five dimensions relating to PW. This is consistent with Collin's (2001a) notion that L5L should comprise equal parts of PH and PW. The scale was used in previous research (Sarfraz et al., 2022), where the 10 items collectively measured L5L.

Section 4: The final part included questions to determine the participant's innovative behaviour and employee voice. EI was measured by adapting the scale developed by Janssen (2000) into a 6-point scale. The 6-point scale was split into equal components of idea creation, idea promotion and idea realisation which were defined as the stages of innovation. The scale was adopted in previous studies (Amankwaa et al., 2019; Ullah et al., 2020).

By adapting the scale established by Liang et al. (2012) into a 4-point measured scale, this was used to measure EV. Two items represent promotive voice, and two items represent prohibitive voice, which are the components of EV (Shin et al., 2022). This scale was used in a previous study by Ullah et al. (2020).

The accuracy in testing hypothesised relationships between constructs relies on the robust establishment and measurement of these constructs (Lambert & Newman, 2023). The authors characterise constructs as conceptual and abstract ideas that support researchers in comprehending the dynamics and functioning of the world or a given environment. The scales employed in both section 3 and section 4 were sourced from past studies where their reliability and validity had been established. However, adjustments were made to the specific items to align with the objectives of this research. This approach is recommended by Zikmund et al. (2013) who recommend that researchers should use questionnaires from past studies to ensure reliability and validity. Lambert and Newman (2023) propose that a construct should be measured using a minimum of three indicators, as this is the minimum requirement to mathematically classify a measurement model when assessing for construct validity through SEM. All scales therefore had more than 3 indicators.

The variables listed in the questionnaire were assessed using a 5-point Likert scale that spanned from expressing strong disagreement to indicating strong agreement. Likert scales consisting of 5 to 10 values are considered appropriate for questionnaire respondents to complete (Kline, 2011) and these scales are considered the simplest scale to construct, as compared to other scales (Kumar, 2018a).

4.3.5. Data Gathering Process

The structured questionnaire served as the sole data gathering method for this research. Ethical clearance for this research was obtained on the 20th September 2023 (Appendix B). Before distributing the official questionnaire, a pilot questionnaire was distributed to ten individuals that met the profile of research participants. In accordance with the guidance from Saunders and Lewis (2012), piloting the questionnaire is a crucial aspect to ensure that it is reliable, it works, that the participants do not have any difficulty in answering the questions and finally that the responses will be recorded accurately. Thereafter, meetings and discussions were held with these individuals to obtain feedback from them. Feedback prompts included whether the questions were easy to understand and if they answered the research questions. The timing to complete the questionnaire was also evaluated. Data screening tests crucial to the study were implemented following the pilot test outcomes. These tests involved addressing missing data and anomalies while also evaluating the normal distribution of the data (Tabachnick & Fidell, 2013).

Once the pilot study was completed, using purposive sampling the final questionnaire link was emailed to participants. Participants were notified in advance that they would receive the email with the survey link. This communication in advance assisted in improving the response rate, and entailed an in-person meeting, email, or telephone call to notify the participant to expect the email with the survey link. At this point confidentiality was highlighted, as well as the potential benefit of the research. Participants were advised that the results of the research would be made available to them at their request.

When the final questionnaire was distributed, the due date was indicated. The researchers contacts were encouraged to nominate further potential respondents,

using a form of snowball sampling. The survey was closed once the response rate declined substantially.

4.3.6. Analysis Approach

4.3.6.1. Background

The statistical analysis is a critical instrument for social science studies to develop, investigate and validate research outcomes. Multivariate analysis tools cover two generations of techniques that are used by researchers to evaluate hypothesised associations between items of concern. The first generation methods (Fornell, 1982), comprise techniques including multiple regression, logistic regression and analysis of variance, and have been widely applied in past research. However, these methods have significant limitations (Haenlein & Kaplan, 2004), which has resulted in researchers shifting to second generation techniques, otherwise called SEM (Hair Jr et al., 2021). The authors indicate that SEM permits researchers to concurrently create and estimate intricate relationships involving numerous dependent and independent variables. The constructs that are been observed, are usually latent and evaluated indirectly using many indicators. Finally SEM allows researchers to evaluate theoretical concepts, which is common in social science research. By overcoming these shortcomings of first generation methods, SEM results in a more accurate evaluation of the theoretical phenomenon of concern (Cole & Preacher, 2014). The present study thus used SEM to develop, investigate and confirm the research outcomes, as the model structure is complex, not all the variables are observable, and the concepts are theoretical and abstract.

Two methods exist in SEM, namely covariance based structural equation modelling (CB-SEM) and PLS-SEM. The selection on which tool to apply relies on the features and intent of the study (Hair et al., 2012). Over the years, CB-SEM has been the most widely used method for evaluating complex relationships between observed and unobserved variables (Hair, Risher, Sarstedt & Ringle, 2019). In recent years, there has been a growing trend in utilising PLS-SEM instead of CB-SEM and the former is widely employed in multiple social science areas (Hair, Risher, Sarstedt & Ringle, 2019). The proposed model was validated and tested based on PLS-SEM by employing SmartPLS 4.0 software (Ringle et al., 2024).

The rationale for using PLS-SEM was based on the following. Firstly, PLS-SEM offers more flexibility for sample size and model fit requirements compared to CB-SEM and proves effective with smaller sample sizes and complex models. (Hair Jr et al., 2014). Secondly, multivariate normality is not a requirement for PLS-SEM, unlike CB-SEM (Garson, 2016; Hair Jr et al., 2014) and it uses non-parametric evaluation criteria to test the studies theoretical models (Hair, Risher, Sarstedt & Ringle, 2019). This was appropriate as the preliminary analysis of the data (see 5.2.5) did not meet the normality requirement. Thirdly, researchers indicate that PLS-SEM is an acceptable method to evaluate causal mechanisms and confirmatory research, including mediation tests (Hair, Risher, Sarstedt & Ringle, 2019). Composite based SEM techniques which include PLS-SEM overcome the limits of factor-based SEM models when evaluating complex mediation models and are the preferable and superior technique when evaluating mediation models (Sarstedt, Hair Jr, Nitzl, Ringle & Howard, 2020). Fourthly, similar and recent studies that aimed to explain relationships between leadership styles and innovation, effectively used PLS-SEM to estimate theoretical models (Amankwaa et al., 2019; Rasheed et al., 2021; Sarfraz et al., 2022). Finally, PLS-SEM allows users to measure the models out of sample predictive power using PLSpredict, this is highly relevant in business and management research (Hair, 2020; Hair, Risher, Sarstedt & Ringle, 2019). While the primary objective of the study was theory testing, PLS-SEM's predictive capacity was also employed to facilitate management decisions by providing a basis for predictability (Becker et al., 2023).

In an analysis of 107 articles in business management studies that used PLS-SEM it was found that the most cited reasons for selecting PLS-SEM were small sample size and non-normal data which is in line with the current research (Magno et al., 2022). Other valid reasons include the requirement for theory testing and predictive studies. The use of PLS-SEM is thus aligned to the studies objectives and data characteristics.

The data was analysed on PLS-SEM following the stepwise guidelines outlined by Hair, Risher, Sarstedt & Ringle (2019). Initially, the focus was on examining the measurement model, and subsequently, the structural model was estimated. This approach aligns with the dual methodology proposed by Anderson and Gerbing (1988) and Chin (1998), emphasising the confirmation of measures before

hypothesis testing. Before proceeding with this two-step analysis, the data was first coded, screened and validated, tested for the potential common method bias (CMB) and multicollinearity, descriptive statistics were calculated, and normality was assessed.

4.3.6.2. Data Coding

After the Qualtrics survey was closed, the dataset was downloaded into Microsoft Excel. The dataset was coded based on the measurement scales, ensuring uniformity by codifying all respondent choices in a single direction (Saunders & Lewis, 2012). The coded dataset was uploaded onto the statistical software for further analysis. This final coded structure is depicted in Appendix C.

4.3.6.3. Missing Data

A total of 218 responses were obtained after closure of the survey. Thereafter, screening tests were conducted on the sample dataset, encompassing examinations for missing data, outliers, and assessing data distribution (Tabachnick & Fidell, 2013). Missing data is a statistical issue characterised by incomplete data, where individuals do not respond to one or more survey items (Newman, 2014). The author indicates that the two key problems with missing data are bias and error. To minimise the risk of missing data, the survey was set up in such a way to force the respondent to respond to a question before progressing to the subsequent one. This prevented respondents from skipping items, however with the risk of respondents abandoning or dropping out of the survey, the data was screened for incomplete responses. The guidance of Hair Jr et al. (2021) was used, in which the authors stated that limits within reason (lower than 5% values missing per variable) mostly result in small variability in PLS-SEM results or alternatively the researcher can choose to delete the missing values from the dataset.

4.3.6.4. Outliers

While PLS-SEM offers robust model estimations, consideration must be given to multicollinearity and outliers as these can affect the regressions in PLS-SEM; thus research data should be assessed for these risks (Hair Jr et al., 2021). Outliers exist as data points highly isolated from the collective grouping of other data points and could thus influence explanations between variables (Leys et al., 2019). After

removing missing values, the adjusted dataset was assessed through the detection and management of univariate and multivariate outliers. Although Aminu and Shariff (2014) state that evaluating for multivariate outliers simultaneously considers univariate outliers, the present study included an assessment of both. To assess for univariate outliers a z-score analysis was employed based on a cut off threshold between -3.29 and +3.29 (Tabachnick & Fidell, 2013).

In the case of SEM it is especially important to identify multivariate outliers as they can influence model fit (Kline, 2011). Multivariate outliers can significantly alter population parameter estimations (Leys et al., 2018). These outliers were recognised by applying Mahalanobis distance *d*-squared, a distance technique recommended and often used in identifying multivariate outliers (Aguinis et al., 2013; Leys et al., 2018). This method is appropriate for the present research as it involves the analysis of multiple variables simultaneously. Mahalanobis distance *d*-squared is defined as "the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all the variables" (Tabachnick & Fidell, 2013, p. 74). The authors indicate that the threshold for Mahalanobis distance *d*-squared is at a *p*-value less than 0.001. SPSS Amos 29 was used to compute the Mahalanobis distance *d*-squared.

Once univariate and multivariate outliers were detected a strategy was taken on whether to keep, remove or recode the outlier (Aguinis et al., 2013; Leys et al., 2019). The authors recommended that should the outliers correctly belong to the distribution group of concern and not impact the robustness of the findings and assumptions of parametric analysis; they should be retained. The findings from the detection and treatment of outliers is contained in section 5.2.3.

4.3.6.5. Common Method Bias

A risk of self-measured survey responses is CMB (Amankwaa et al., 2019). To address this, the suggestions of Podsakoff et al. (2003) were considered. Firstly, participants were provided assurance that their identities would remain anonymous, and their responses would be confidential and exclusively used for research objectives. Secondly, through temporal psychological separation, a short preamble

for each section of the questionnaire was done to minimise potential carry over effects.

The collinearity approach was used as a second mechanism to deal with the issue of CMB, which is consistent with previous researchers (Kock, 2015). Multicollinearity is where independent variables display a minimal correlation with dependent variables (Hair, Black, Babin & Sarstedt, 2014) and problems occur when independent variables have a high correlation with each other (Pallant, 2010; Tabachnick & Fidell, 2013). To test for collinearity, the variance inflation factor (VIF) of each variable was computed in PLS-SEM. VIF is employed to evaluate multicollinearity in variables (Fornell & Bookstein, 1982). Individual values did not exceed the threshold of 5 (Hair Jr et al., 2021) and thus it was determined that the dataset was free from CMB.

4.3.6.6. Data Distribution

The assumption of normal distribution is fundamental in statistical analysis and SEM, as noted by Hair, Black, Babin & Sarstedt (2014). The authors state that it pertains to the characteristic shape of the distribution of datasets of singular variables and its alignment with the established standards of a normal distribution. Although PLS-SEM does not require normally distributed data (Hair, Risher, Sarstedt & Ringle, 2019), the data was assessed for normality to motivate the use of PLS-SEM (Vaithilingam et al., 2024). To measure the normal distribution of data, researchers suggest reporting the data's skewness and kurtosis (Byrne & Van de Vijver, 2010; Kline, 2011; Hair Jr et al. 2021), and it the most used method to assess for normality in business research (Vaithilingam et al.,2024). Hair Jr et al. (2021) suggested an acceptable skewness and kurtosis threshold for normality of between -2 and 2. Kline (2011), however opined for data to be normally distributed, skewness must be within a threshold of +-3 and kurtosis +-10 with values greater than 20 indicating highly non-normal data. Byrne & Van de Vijver (2010) indicated that for normality these thresholds should be +-2 and +-7, respectively. Vaithilingam et al. (2024) support the skewness and kurtosis method to assess for normality but recommend that the complementary technique of the Shapiro-Wilk test be used (Shapiro & Wilk, 1965). Since the data displayed a relatively high skewness and kurtosis, a Shapiro-Wilk test was performed to corroborate the non-normal data distribution. A *p*-value of > 0.05

is indicative of normal distribution, and parametric tests can be employed (Shapiro & Wilk, 1965). The data in the present research did not exhibit a normal distribution, affirming the appropriateness of employing PLS-SEM.

4.3.6.7. Descriptive Statistics

Descriptive statistical analyses were performed to support the process of understanding and interpreting the data (Wegner, 2020; Zikmund, 2013). Such descriptive statistics arrange the dataset into profiles, categories and associations to determine patterns and trends (Wegner, 2020). For the purposes of this study the sample data was organised into the categories of age, gender, years of service at current company, highest level of education and job level and evaluated using frequency and cross tabulation tables and graphs, respectively. Additionally, measures such as location, spread and shape can be used to characterise the data profile of a random variable (Wegner, 2020). This study analysed the variables based on the measures of mean, standard deviation (SD) and correlations.

4.3.6.8. Measurement Model Assessment

The measurement model comprised three constructs, namely L5L, EI and EV. Measurement theory outlines the methodology for estimating the constructs in the structural model, primarily through two approaches: reflective measured constructs and formative measured constructs (Hair, Black, Babin & Sarstedt, 2014). A reflective measured construct is where a variation in the construct results in an anticipated shift in an indicator, while a formative measured construct is where the indicators affect the construct (Bollen & Ting, 2000). Social science research ordinarily study latent variables thought to cause indicators (reflective constructs), however in certain instances the causal relationship may be inverted (formative constructs), and incorrect classification of constructs can lead to inaccurate research outcomes (Hair, Black, Babin & Sarstedt, 2014). In establishing the measurement method specification for constructs for the current study the following steps were undertaken. Firstly, past theory was consulted to assess the measurement method for each construct based on a theoretical approach (Hair, Risher, Sarstedt & Ringle, 2019). Secondly if the construct had high internal consistency reliability and convergent validity than it is likely a reflective construct (Hair, Black, Babin & Sarstedt, 2014). Finally confirmatory tetrad analysis (CTA) was used to empirically

corroborate the specification of the construct measurement method (Hair, Risher, Sarstedt & Ringle, 2019). The researchers state that should tetrads disappear (namely, become 0), then the construct is reflective (Bollen & Ting, 2000). If the value of any single construct's tetrads substantially deviates from 0, it leads to rejecting the null hypothesis and adopting a formative measurement model specification. In this regard if the confidence interval (CI) low and CI high comprises a 0 value (i.e. moves from – to +), then the construct in reflective. A change from – to – or + to + implies a formative construct. Based on the outcomes of this analysis in section 5.3.2.1 all constructs were specified as reflective.

The estimation of a reflective assessment model comprises assessing the models reliability and validity relative to the unobservable variables (Amankwaa et al., 2019; Chin, 2009; Hair et al., 2017). This involves evaluating the link between the unobservable constructs and observable indicators. The reflective measurement model in PLS-SEM was evaluated following the four-step procedure recommended by Hair, Risher, Sarstedt & Ringle (2019).

The first step comprised an assessment of factor or indicator loadings. This is supported by Lambert and Newman (2023), who propose factor analysis to validate construct validity of the models measures. The degree to which every individual indicator from the correlation matrix aligns to the designated main component is measured by indicator loading (Pett et al., 2003). Indicator loading values fall within the range of -1 to +1, with higher amounts confirming a greater correlation. Factor analysis was performed which provides loadings and cross loadings. Outer loadings within the range 0.61 to 0.9 were considered acceptable (Hair, Black, Babin & Sarstedt, 2014; Hair, Hult, Ringle & Sarstedt, 2014).

Evaluating internal consistency reliability is the second step in estimating the measurement model. It refers to “the extent to which indicators measuring the same construct are associated with each other” (Hair Jr et al, 2021, p. 77). Cronbach’s Alpha and Composite Reliability are the most widely applied statistics for determining reliability. These measures were used in this study and validated against the threshold of 0.7 or higher that is required for confirmatory study purposes (Hair et al., 2017; Hair, Risher, Sarstedt & Ringle, 2019).

The next step accounts for the convergent validity of the studies individual constructs. “Convergent validity is the degree to which multiple attempts to measure the same concept are in agreement. The idea is that two or more measures of the same thing should covary highly if they are valid measures of the concept” (Bagozzi et al., 1991, p. 425). The statistic used to measure convergent validity of a construct was average variance extracted (AVE) for all the constructs (Hair Jr et al., 2021) Convergent validity was confirmed by evaluating AVE against the appropriate threshold of 0.5 (Chin, 2009; Fornell & Larcker, 1981; Hair, Risher, Sarstedt & Ringle, 2019).

The last step is the assessment of discriminant validity. “Discriminant validity is the degree to which measures of different concepts are distinct. The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly” (Bagozzi et al., 1991, p. 425). It represents how distinct a construct is from other constructs within the measurement model. Despite the historical use of the Fornell and Larcker (1981) criterion for confirming discriminant validity, recent research indicates its inadequacy for this purpose (Hair, Risher, Sarstedt & Ringle, 2019; Henseler et al., 2015). The Heterotrait-monotrait ratio of correlations (HTMT) has been recently proposed as a more suitable metric to evaluate discriminant validity (Henseler et al., 2015). “HTMT is defined as the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct.” (Hair, Risher, Sarstedt & Ringle, 2019, p. 9). Discriminant validity is a concern in the presence of high HTMT values. In instances where constructs are conceptually alike, an HTMT threshold of 0.9 is proposed (Franke & Sarstedt, 2019; Henseler et al., 2015). For constructs that are conceptually separate, it is advised to consider a threshold of 0.85 (Henseler et al., 2015; Kline 2011). HTMT was computed to assess discriminant validity.

4.3.6.9. Structural Model Assessment

After establishing the validity and reliability of the measurement model, the evaluation of the structural model followed, adhering to the guidelines outlined by Hair, Risher, Sarstedt & Ringle (2019). Firstly, structural model multicollinearity was reviewed. Secondly, the path coefficients were evaluated to test the hypotheses. Thirdly, the model was evaluated by explaining the variance of the endogenous variables (R^2), explaining the effect sizes of the path coefficients (f^2) and measuring

the dependent variable predictive significance using PLSpredict (Q^2predict). Fourthly the standardised root mean square residual (SRMR) was computed to determine model fit. This was followed by robustness checks of the findings. Finally, the test for the mediation hypothesis was completed.

Prior to assessing the hypothesised relationships, multicollinearity was evaluated to ensure that the results were not biased. This constituted using the unobservable variables scores of the predictor constructs in the model to compute VIF metrics (Hair, Risher, Sarstedt & Ringle, 2019). The VIF amounts were measured against the threshold of <5 and the conservative lower bound threshold of <3 (Hair, Risher, Sarstedt & Ringle, 2019).

The significance of path coefficients were then assessed in PLS-SEM to test the hypothesis, *t*-statistics were obtained by way of bootstrapping with 5 000 resamples (Hair et al., 2020). At *t*-value > 1.96 (two tailed) and *p*-value < 0.005, the hypothesis was substantiated (Hair, Black, Babin & Sarstedt, 2014; Hair, Hult, Ringle & Sarstedt, 2014).

The assessment of the structural model in PLS-SEM involves assessing both its capability to explain and predict. Hence the models R^2, f^2, and Q^2predict were evaluated. R^2 refers to the models explanatory capability and evaluates the in-samples model goodness-of-fit of the dependent construct component scores, by employing model estimations to calculate the scores of the complete sample (Shmueli et al., 2016). Hair Jr et al. (2021) states that adequate R^2 values are dependent on the area of study. Hair et al. (2011), propose thresholds of 0.25 (small), 0.5 (medium) and 0.75 (large) for marketing research. Falk and Miller (1992) suggest an acceptable cut off 0.10. For social science studies, Ozili (2023) recommends a threshold of between 0.10 to 0.50, provided that some of the explanatory variables are statistically significant. For this study, an R^2 threshold of >=0.10 was used.

In this research the effect on EI was measured through two predictor variables and it is therefore necessary to present f^2 effect size (Hair Jr et al., 2021). The f^2 effect size value indicates that the exclusion of a predictor variable can significantly impact

the dependent variable (Hair Jr et al., 2021). Considering the guidelines, f^2 >= 0.02 is small, >= 0.15 is medium and >= 0.35 is large (Cohen, 1988).

The predictive capability of the model was further evaluated by applying the Q^2predict statistic in SmartPLS4.0 (Shmueli et al., 2019). The Q^2 predict statistic evaluates how well a model can predict outcomes beyond the initial training data. It involves evaluating the model's predictive capability by first analysing a training sample and then testing its effectiveness on data that was not part of the training set (Shmueli et al., 2016). By measuring the out-of-sample predictive capability it adds to the in-sample explanatory power determined through R^2. Evaluating the predictive power of a model is a vital aspect of any study (Hair Jr et al., 2021; Shmueli et al., 2016). The guidelines provided by (Shmueli et al., 2019) were applied to evaluate the model's predictive capability. Firstly a Q^2predict statistic > 0 suggests that the prediction error associated with the PLS-SEM outcome is lower than the prediction error linked to the mean value of the training samples. Secondly a linear regression model (LM) was computed that offers prediction errors and metrics separate to the PLS-SEM model. This entails running a regression of the exogenous items on the independent constructs to produce a prediction. A comparison of the theoretically generated path model and the PLS-SEM results was then done utilising the mean absolute error (MAE). If the PLS-SEM model is < LM: for all indicators it suggests high predictive power, for most indicators it suggest medium predictive power and for a minority of indicators it suggests low predictive power.

While CB-SEM places significant emphasis on the models goodness of fit, its relevance is diminished in PLS-SEM, as highlighted by Hair, Risher, Sarstedt and Ringle (2019) . Nevertheless, PLS-SEM remains highly suitable for theory testing and confirmatory studies (Hair, Sarstedt & Ringle, 2019). The authors suggest that, despite PLS-SEM's effectiveness in prediction, researchers are continuously enhancing its potential for theory testing through the creation of measures that assess the goodness of model fit. To evaluate model fit SRMR was computed. It "measures the difference between the observed correlation and the model implied correlation matrix" (Henseler et al., 2014, p. 192). The authors evaluated the SRMR as an effective model fit measurement for PLS-SEM.

When using PLS-SEM it is proposed that researchers check the robustness of results (Hair, Risher, Sarstedt & Ringle, 2019; Vaithilingam et al., 2024). However, in a review of 1 228 articles from top rated journals, Vaithilingam et al. (2024) found that only 14.9% of the papers reported on at least one recommended robustness check. The current study evaluated the risks of endogeneity and nonlinearity on the estimated results. Endogeneity is when the independent variable in a regression model has a correlation with the error term of the endogenous variable and could result in imprecise PLS-SEM path coefficients (Vaithilingam et al., 2024). The researchers state that this is especially problematic when testing hypothesised associations, particularly in explanatory research (Hult et al., 2018). While the current study does consider the predictive capability of PLS-SEM, the main purpose is to test the hypothesised relationships between L5L, EV and EI and it is thus primarily explanatory is nature. Such a setting requires the consideration of endogeneity (Hult et al., 2018). In this context the researchers suggest applying the Gaussian copula approach in PLS-SEM (Park and Gupta, 2012), and if the results do not indicate an issue the research can use the original model estimations. If the results do show endogeneity issues this needs to be investigated and controlled for. The Gaussian copula approach was applied as the preferred test for endogeneity considering the recommendation of Vaithilingam et al. (2024).

Nonlinearities in a structural model can result in the incorrect estimations of relationships or even incorrectly concluding that they are not significant (Basco et al., 2022). Past studies using PLS-SEM have assumed positive linearity (Sarstedt, Ringle, Nitzl, Cheah, Ting, Moisescu & Radomir, 2020; Vaithilingam et al., 2024), however the association between constructs may become nonlinear and as a result negative with an increase in the independent variable (Pierce & Aguinis, 2013). This study assumed a monotonic positive linear relationship between constructs, and this was validated by evaluating the quadratic effect significance (Ringle, 2024), which is in line with previous studies (Vaithilingam et al., 2024).

Mediation analysis was performed to evaluate the indirect effects within the research model, employing the criteria outlined by Hayes (2013) and MacKinnon et al. (2004), consistent with earlier research studies (Amankwaa et al., 2019; Rasheed et al., 2021). In SmartPLS4.0 (Ringle et al., 2024), the results of the bootstrapping procedure include the direct, indirect and total effects based on the structural model

evaluation. Researchers regularly supplement factor-based SEM assessments with process macros to test for mediation (Sarstedt, Hair Jr, Nitzl, Ringle & Howard, 2020). The researchers found that this approach has its limitations, and that PLS-SEM overcomes the limits of factor-based SEM models when evaluating complex mediation models and is the preferable and superior method when evaluating mediation models. Hair et al. (2017) also argue that mediation in PLS-SEM overcomes the shortcomings of the Baron and Kenny (1986) mediation approach proposed by Zhao et al. (2010).

Figure 2 shows the process applied for PLS-SEM.

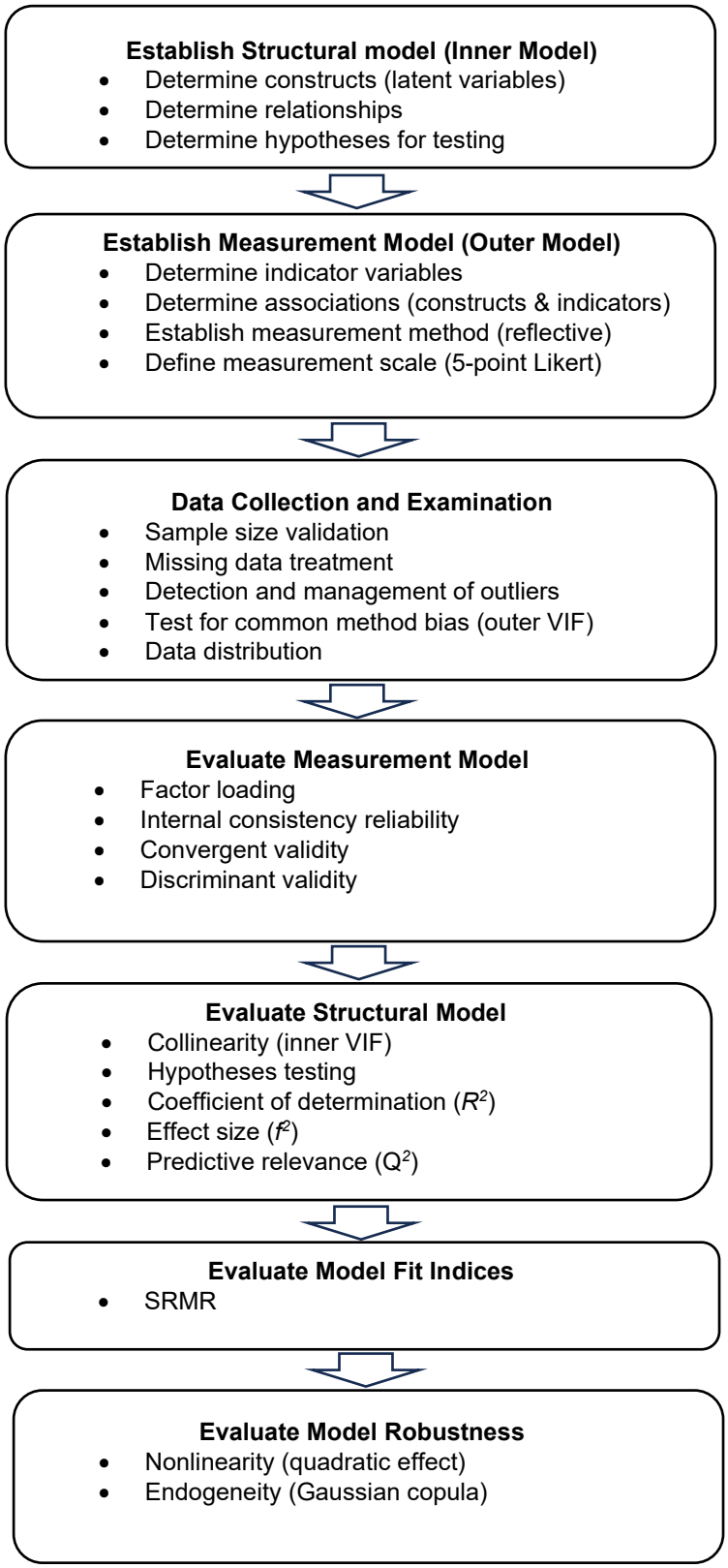


Figure 2: PLS-SEM Process

Source: Author's own (2024)

4.4. Limitations

The research was static, based on a cross-sectional strategy. This means that a respondents' circumstances and mindset when completing the questionnaire may have influenced their answers, which may result in differing answers if completed at different points in time. A longitudinal study would be more appropriate; however, this would not have been feasible considering the time constraints.

Having collected self-rated data to test the structural model there is risk of CMB (Podsakoff et al., 2003). The respondents were employees recording their own perceptions of their employee innovation willingness and ability. There is therefore a risk of self-bias. However, given that respondents were managers and at a professional level, the emphasis on confidentiality, and the use of validated scales, this risk will be mitigated. Additionally, the tests for CMB did not reveal any issues.

The sample method would not have resulted in a random sample that is representative of the population. The purposive sample choice means that part of the population did not have the chance to be chosen. The sample selected is however believed to be suitable for the research objectives to be met. The snowball sampling method aimed to increase the scope of the sample, but the risk is that participants may have referred individuals that are similar to themselves. With the snowball sampling method there is also a risk that the questionnaire might have been distributed to individuals who were not within the required population.

The study was restricted to leadership and innovation in the manufacturing industry and a specific country. This may question the generalisability of the findings to other industries and countries.

The next chapter presents the detailed findings and results based on the research carried out.

5. Chapter Five: Data Collection, Analysis and Findings

5.1. Introduction

This chapter presents in detail the findings from the analysis of the data collected. It includes a section on the data collection and examination which comprises a final sample size review, value of missing data, test for outliers, data distribution evaluation, descriptive statistics and tests for CMB. This is followed by the PLS-SEM evaluation which consists of the assessment of the measurement and structural model. The measurement model assessment determines the validity and reliability of the constructs. The structural model assessment establishes the significance of the hypotheses developed.

5.2. Data Collection and Examination

5.2.1. Sample Size

Among all the participants, 177 useable responses were obtained. The advantage of PLS-SEM is that it can generate a solution with reasonably small sample sizes (Hair Jr et al., 2021). However, larger samples sizes lead to greater precision and consistency of results. Small sample sizes are regularly an abused justification for using PLS-SEM with certain studies finding model outcomes with unreasonably low sample sizes (Goodhue et al., 2012; Hair Jr et al., 2021; Marcoulides & Saunders, 2006). Therefore, adherence to the minimum sample size rules warrants that the outcomes of the PLS-SEM approach exhibit sufficient statistical power and are generalisable in the same population. As per section 4.3.3, the following minimum sample sizes were computed:

Table 2: Minimum Sample Size By Method

Method	Model	Minimum sample size
10 to 20 times the number of variables (Kline, 2005)	SEM	200
10 times rule (Hair et al., 2011)	PLS-SEM	20
Minimum R-square (Hair, Hult, Ringle & Sarstedt, 2014)	PLS-SEM	110
Inverse root square (Kock & Hadaya, 2018)	PLS-SEM	160

Source: Author's own (2024)

Although the final sample size of 177 is less than the 200 based on the recommendations of Kline (2005), it is adequate considering the minimum thresholds required for PLS-SEM. Additionally when using the actual model R^2 (0.204) and minimum path coefficients (0.276) as opposed to the rules of thumb, the minimum81,ample sizes using the minimum $R^{2,}$ and inverse root square were 52 and 81 respectively. Therefore, based on prospective and retrospective minimum sample size calculation (Kock & Hadaya, 2018), the usable data of the 177 respondents obtained is sufficient to proceed with PLS-SEM.

5.2.2. Missing Data

As is the case with any statistical analysis, missing values must be evaluated when using PLS-SEM as it can result in bias and error (Newman, 2014) . For incomplete data with lower than 5% values missing per variable, Hair Jr et al. (2021) suggests that missing value treatment results in only slight variability in PLS-SEM outcomes. Otherwise, the authors suggest that researchers can choose to omit responses with missing values which reduces variability in the dataset.

In this study, 218 responses were obtained. However, 41 responses had more than 50% missing values, implying that the respondents started the questionnaire but then dropped out. Based on the recommendation, these 41 responses were deleted from the dataset resulting in a total number of 177 usable responses.

5.2.3. Test for Outliers

Despite the robust model estimation potential of PLS-SEM, the data was still assessed for outliers as recommended by Hair Jr et al. (2021). The case of outliers in a regression-based estimation, can severely impact the assessment of regression coefficients and lead to inaccurate findings (Verardi & Croux, 2009).

The assessment of z-scores at a construct level, to identify univariate outliers, revealed four significant observations outside the threshold of -3.29 and +3.29 (Tabachnick & Fidell, 2013). This included observations 49, 97, 139 and 171.

Using Mahalanobis distance *d*-squared, multivariate outliers were identified for observations with a *p*-value less than 0.001 (Tabachnick & Fidell, 2013). Based on the findings contained in Table 3, six observations exceeded the Mahalanobis distance d-squared.

Table 3: Observations Outside the Acceptable Mahalanobis Threshold

Observation number	Mahalanobis *d*-squared	*p*-value
164	52.349	0.000
170	51.423	0.000
133	50.205	0.000
49	49.628	0.000
171	48.309	0.000
97	48.215	0.000

Source: Author's own based on survey responses (2024)

The researcher opted not to remove any outliers from the dataset for the following reasons. The use of robust non-parametric bootstrapping methods resulted in the outliers not significantly affecting the results of the hypothesis testing, model robustness and model fit (Leys et al., 2019). Bakker and Wicherts (2014) support this view and the researchers propose that outliers should be kept by default, as their presence does not severely influence the statistical results and alternative tests can be done. Furthermore, by inspection of the outliers' observations, they appear to correctly belong to the distribution and their removal would result in falsely reducing the error estimate. Removal of the outliers would result in the loss of a significant number of observations. Outliers can be due to a variation of measure or an error (Churchill & Iacobacci, 2004). Outliers due to errors are excluded from the dataset (Aminu & Shariff, 2014).

For transparency, the results are presented with and without the identified outliers in section 5.3.3.

5.2.4. Test for Common Method Bias

Collinearity is another factor that affects ordinary lease squares regressions in PLS-SEM and data should be evaluated for issues (Hair, Risher, Sarstedt & Ringle, 2019; Hair Jr et al., 2021). The collinearity method was used as a mechanism to deal with the concern of CMB, which is consistent with previous researchers (Kock, 2015). To test for collinearity, the VIF of each variable was computed in PLS-SEM (Fornell & Bookstein, 1982). Values ranged between 1.207 and 4.720, however individual values did not exceed the threshold of 5 (Hair, Risher, Sarstedt & Ringle, 2019). A total of 65% of the variables were below the conservative lower bound threshold of <3 (Hair, Risher, Sarstedt & Ringle, 2019) and thus it was concluded that the data was free from CMB (see Table 4).

Table 4: Collinearity Results – Outer Model

Variable	VIF
EI1	1.368
EI2	1.320
EI3	1.750
EI4	1.289
EI5	1.207
EI6	1.653
EV1	1.622
EV2	1.892
EV3	2.074
EV4	1.847
L5L1	3.011
L5L2	3.850
L5L3	4.720
L5L4	3.564
L5L5	2.108
L5L6	2.205
L5L7	2.745
L5L8	3.127
L5L9	3.279
L5L10	3.100

Source: Author's own based on survey responses (2024)

5.2.5. Data Distribution

The dataset used for this research is non-parametric (non-normal), which is reflected in table 5. Normality was assessed using skewness and kurtosis (Byrne and Van de Vijver, 2010; Hair Jr et al., 2021; Kline, 2011). Based on these rules of thumb the data for this study was deemed to be non-normal.

Table 5: Skewness and Kurtosis of Indicators

Indicator	N	Skewness	Kurtosis
L5L1	177	-1.561	1.961
L5L2	177	-1.183	0.305
L5L3	177	-1.216	0.489
L5L4	177	-1.431	1.408
L5L5	177	-0.971	-0.447
L5L6	177	-1.287	1.320
L5L7	177	-2.362	5.572
L5L8	177	-1.786	3.014
L5L9	177	-2.103	3.864
L5L10	177	-2.524	7.226
EI1	177	-1.034	1.028
EI2	177	-1.925	3.754
EI3	177	-1.033	0.082
EI4	177	-1.051	0.797
EI5	177	-1.604	3.444
EI6	177	-0.921	-0.156
EV1	177	-1.034	0.907
EV2	177	-1.187	0.829
EV3	177	-1.074	0.638
EV4	177	-0.820	-0.100

Source: Author's own based on survey responses (2024)

Results of the Shapiro and Wilk normality test contained in Table 6 indicate a *p*-value of < 0.05, confirming a non-normal distribution.

Table 6: Shapiro Wilks Test of Normality

Construct	Statistic	df	*p*-value
L5L	0.816	177	<0.001
EI	0.895	177	<0.001
EV	0.872	177	<0.001

Source: Author's own based on survey responses (2024)

PLS-SEM makes no assumptions about data distributions, while CB-SEM usually requires data have a normal distribution (Hair, Risher, Sarstedt & Ringle, 2019). In instances where CB-SEM may be robust against non-normal data, it would need a greater sample size (Boomsma & Hoogland, 2001). If sample sizes are small, it produces inaccurate results in the presence of non-parametric data (Reinartz et al., 2009). PLS-SEM, by contrast, exhibits higher robustness when using non-normal data (Sarstedt et al., 2016). Non-normal data should not be the sole reason for using PLS-SEM (Hair, Risher, Sarstedt & Ringle, 2019). In addition to the other reasons for selecting PLS-SEM highlighted in section 4.3.6. the advantage of producing accurate results in the presence of non-normal data made PLS-SEM appropriate for estimating the structural model.

In certain cases, the estimations in PLS-SEM may be affected by non-normality, as discussed by Sarstedt et al. (2017). However, a solution to this issue is the application of bias-corrected and accelerated (BCa) bootstrapping, which helps mitigate the influence of data skewness on confidence intervals (Efron, 1987). To address potential concerns about data normality, the current study opted for the use of BCa in SmartPLS (Ringle et al., 2024).

5.2.6. Demographic Statistics

This section provides a descriptive analysis of the demographics of the respondents in the sample. The analysis of demographic data ensures that the results of the survey are contextualised to avoid the generalisation of outcomes to inappropriate groups (Wegner, 2020). The following demographic data are reported on below based on the final sample of 177:

- Gender

- Age
- Highest level of education
- Job level
- Years of service at current company
- Manufacturing sub-sector

5.2.6.1. Gender

A frequency table was produced to describe the distribution of gender in the sample. Most of the sample was male (N = 102, 57.6%), while 75 respondents were female (42.4%). The findings of the gender distribution of the participants are depicted in Table 7.

Table 7: Frequency Distribution of Gender

Gender	Frequency	Percentage
Female	75	42,4%
Male	102	57,6%

Source: Authors own based on survey responses (2024)

5.2.6.2. Age

Descriptive statistics were computed to review the distribution of the age group in the sample. As shown in Table 8, the largest age group was 28 to 37 years (N = 68, 38.4%). The smallest age group was 58 years or older (N = 8, 4.5%). Figure 3 shows that the sample is slightly skewed to the left with most respondents being under the age of 47 years.

Table 8: Frequency Distribution of Age

Age	Frequency	Percentage
18–27 years	16	9%
28–37 years	68	38.4%
38–47 years	57	32.2%
48–57 years	28	15.8%
58 years or older	8	4.5%

Source: Author's own based on survey responses (2024)

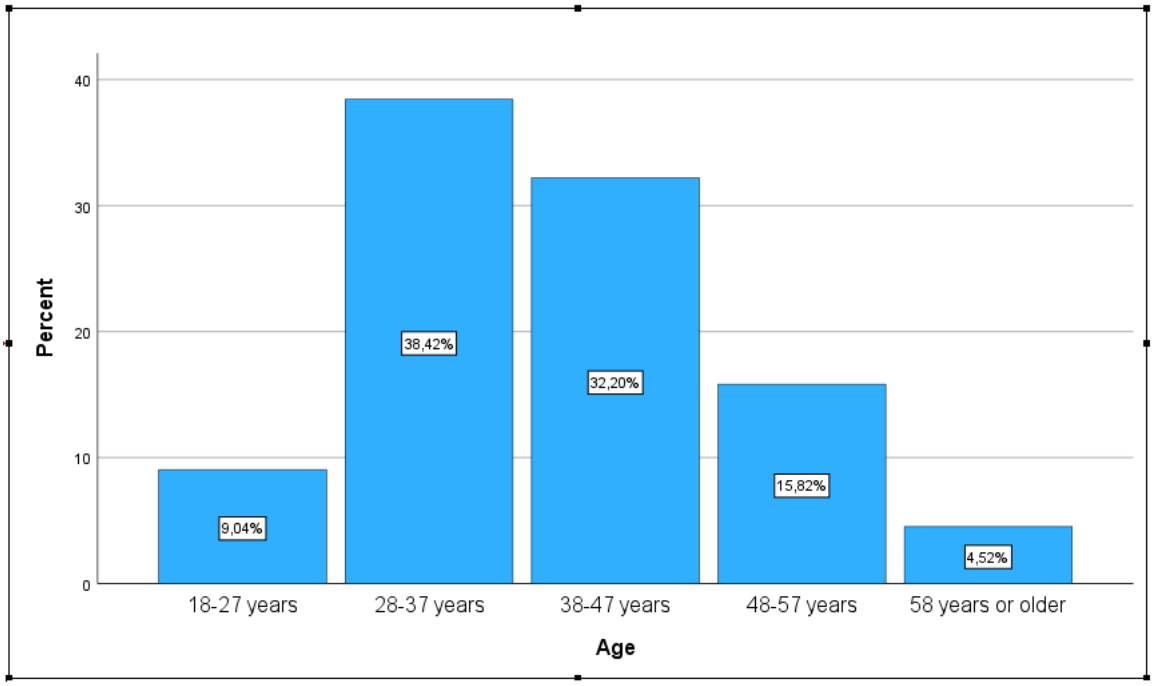


Figure 3: Age Distribution of Respondents

Source: Author's own based on survey responses (2024)

5.2.6.3. Education Level

The frequency distribution for education contained in Table 9 indicates that the education level with the greatest number of respondents is postgraduates (N = 69, 39%), followed by bachelor's degree (N = 46, 26%) and diploma or advanced certificate (N = 39, 22%). The smallest distribution was respondents with high school education (N = 23, 13%). The results are indicative of the intent of the researcher to focus on a sample based on manager and specialist levels. The distribution is further depicted in Figure 4.

Table 9: Frequency Distribution of Education level

Education level	Frequency	Percentage
High school	23	13.0%
Diploma or advanced certificate	39	22.0%
Bachelor's degree	46	26.0%
Postgraduate	69	39.0%

Source: Author's own based on survey responses (2024)

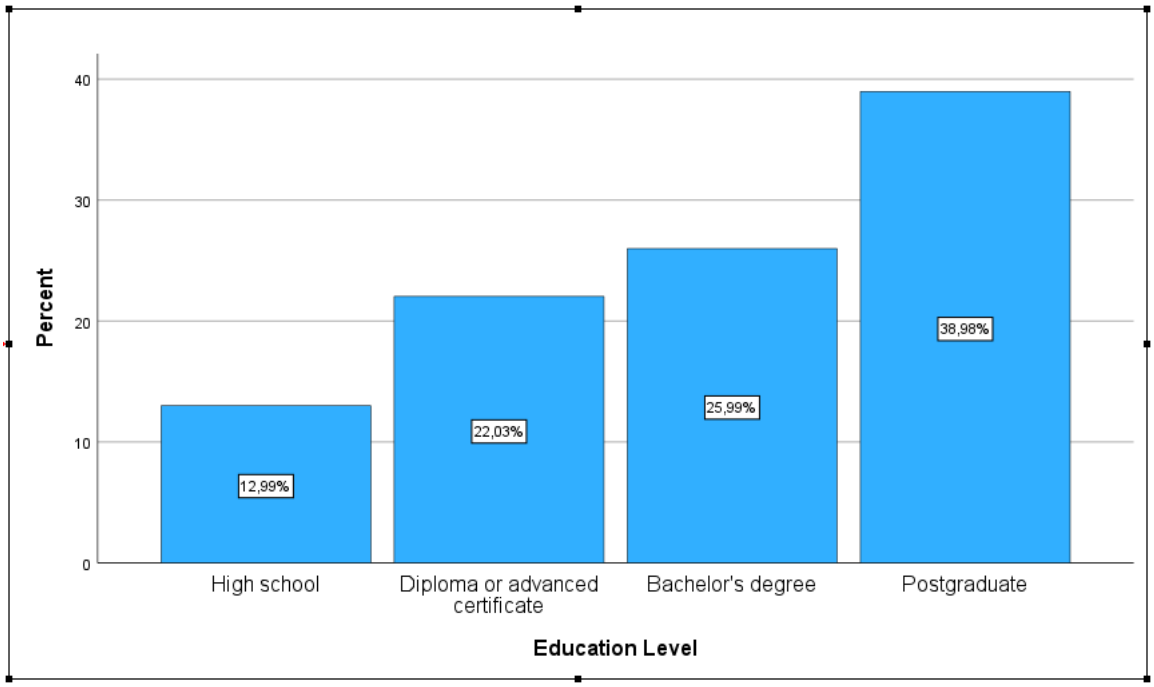


Figure 4: Education Level Distribution of Respondents

Source: Author's own based on survey responses (2024)

5.2.6.4. Job Level

Descriptive statistics on the respondents' job levels show that most of the sample occupy management positions (N = 83, 46.9%) with the lowest number being supervisors (N = 16, 9.0%). These statistics indicate that respondents mostly occupy senior positions within their organisations, which was a critical requirement for the study. The results of the job level distribution of the participants are shown in Table 10 and in Figure 5.

Table 10: Frequency Distribution of Job level

Job level	N	%
Supervisor	16	9.0%
Specialist	48	27,1%
Management	83	46.9%
Executive	30	16.9%

Source: Author's own based on survey responses (2024)

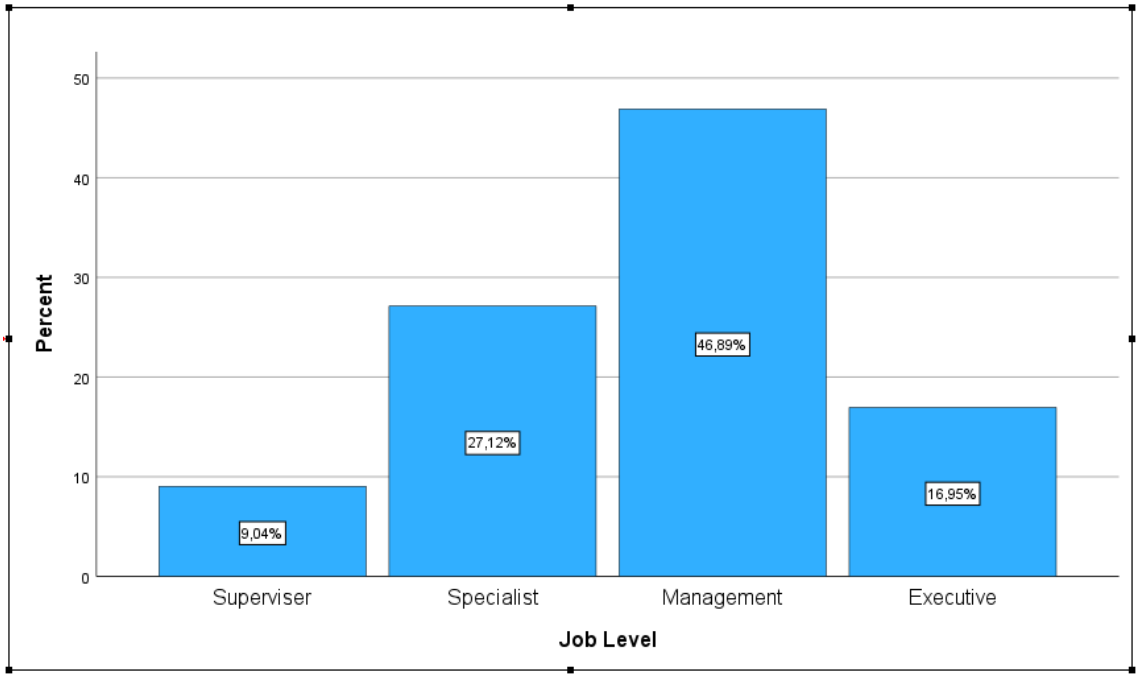


Figure 5: Job Level Distribution of Respondents

Source: Author's own based on survey responses (2024)

5.2.6.5. Years of Service at Current Company

The frequency distribution of the respondents' years of service at their present organisation is shown in Table 11. The group with the highest percentage is 1 to 5 years (N = 62, 35%). There is, however, a reasonable distribution of 5 to 10 years group (N = 52, 29.4%) and greater than 10 years group (N = 39, 22%). The lowest distribution is in the less than 1 year group (N = 24, 13.6%). The distribution is further depicted in Figure 6.

Table 11: Frequency Distribution of Years of Service at Current Company

Years of service at current company	Frequency	Percentage
Less than 1 year	24	13.6%
1 to 5 years	62	35.0%
5 to 10 years	52	29.4%
Greater than 10 years	39	22.0%

Source: Authors own based on survey responses (2024)

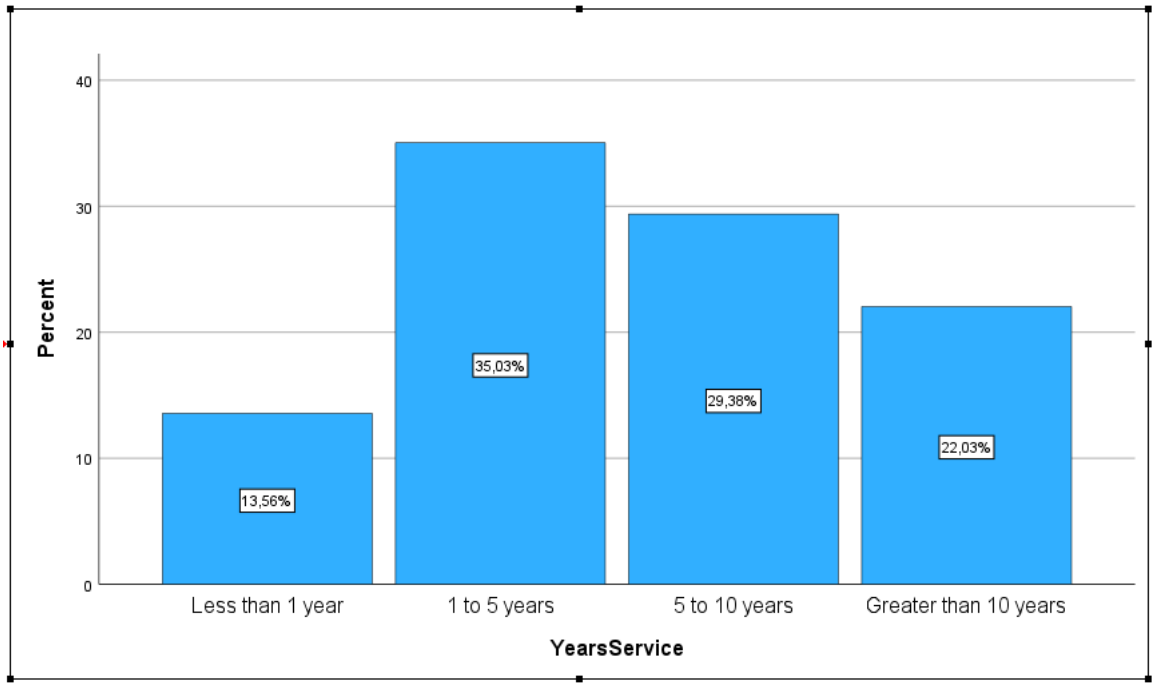


Figure 6: Years of Service at Current Company Distribution of Respondents

Source: Author's own based on survey responses (2024)

5.2.6.6. Manufacturing Subsector

A frequency table was developed to describe the distribution of the manufacturing subsector that the respondents represented. The results of the manufacturing subsector distribution of the participants are shown in Table 12. The greatest number of respondents came from the printing and package industry (N = 55, 31.1%), which was followed by automotive (N = 39, 22%), food and beverages (N = 28, 15.8%) and manufacturing support services (N = 27, 15.3%). Manufacturing support service organisations represented in the sample comprised primarily transport and logistics, information and communication technologies and waste management. Companies in the top three sectors were purposely chosen during sampling as these subsectors represent a significant portion of SA's total manufacturing income, food and beverages (23%), transport equipment (17%) and wood products, publishing and printing (6%) (Statistics South Africa, 2023).

Table 12: Frequency Distribution of the Manufacturing Subsector

Manufacturing subsector	Frequency	Percentage
Printing and packaging	55	31.1%
Automotive	39	22.0%
Food and beverages	28	15.8%
Manufacturing support	27	15.3%
Chemicals	9	5.1%
Textiles and clothing	7	4.0%
Metal	3	1.7%
Paper	3	1,7%
Other manufacturing	6	3.4%

Source: Author's own based on survey responses (2024)

5.2.6.7. Construct Mean Scores by Demographics

Table 13 depicts the construct mean scores by demographics. For all categories, the mean scores for all three constructs on a scale of 1–5 ranged from agree to strongly agree, and there is relative consistency between the demographic groups. This indicates that all the groups associated positively with the constructs and showed relative statistical insignificance between the groups. It also seems that none of these variables act as possible moderating factors of the EI. However, key trends that are discussed further in Chapter Six are noted below.

- EI scores between males and females appear to be relatively similar, however females are led by leaders with higher L5L qualities at a mean level, with a L5L mean score of 4.399. This may suggest that females are more influenced by their leaders.
- EI mean scores seems to increase with education level although the variances are small.
- Similarly, EI mean scores increased with job levels.
- The employees with less than one year's service appear to have a stronger association with their leaders as level 5 leaders and were the most innovative with the highest EI mean score.

Table 13: Mean Scores by Demographics

	N	L5L	EI	EV
Gender				
Male	102	4.126	4.497	4.419
Female	75	4.399	4.511	4.443
Age				
18–27 years	16	4.719	4.563	4.547
28–37 years	68	4.303	4.419	4.390
38–47 years	57	4.084	4.564	4.465
48–57 years	28	4.029	4.554	4.393
58 years or older	8	4.638	4.479	4.406
Education Level				
High school	23	4.313	4.420	4.554
Diploma or advanced certificate	39	4.049	4.491	4.340
Degree	46	4.504	4.504	4.424
Postgraduate	69	4.152	4.536	4.442
Job Level				
Supervisor	16	3.856	4.135	4.141
Specialist	48	4.429	4.510	4.547
Management	83	4.218	4.538	4.443
Executive	30	4.213	4.589	4.358
Years of service in current company				
Less than 1 year	24	4.679	4.736	4.531
1 to 5 years	62	4.261	4.422	4.391
5 to 10 years	52	4.238	4.545	4.514
Greater than 10 years	39	3.946	4.432	4.314
Sector				
Printing and packaging	55	3.987	4.467	4.359
Automotive	39	4.369	4.491	4.481
Food and beverages	28	4.614	4.679	4.580
Manufacturing support services	27	4.285	4.543	4.528
Chemicals	9	3.833	4.352	4.222
Textiles and clothing	7	4.357	4.571	4.393
Paper	3	4.500	4.833	4.583
Metal	3	3.033	4.333	3.917
Other manufacturing	6	4.767	3.972	4.125

Total	177	4.242	4.503	4.429

Source: Author's own based on survey responses (2024)

5.2.7. Descriptive Statistics of the Latent Constructs

This section presents the descriptive statistics of the indicators used to assess the three constructs: L5L, EI, and EV. This examination includes an analysis of the mean and standard deviations of the constructs and indicators, which is followed by a descriptive analysis of the correlation between the constructs and variables of the study.

5.2.7.1. Descriptive Statistics at Construct Level

Descriptive statistics at a construct level showed that the means of all the constructs were on the high end with EI showing the largest mean of 4.503, followed by EV at 4.429 and L5L at 4.242. Table 14 shows this favourable affiliation of the respondents with the measured constructs.

Table 14: Descriptive Statistics of Constructs

Construct	N	Minimum	Maximum	Mean	Std. Deviation
L5L	177	1.00	5.00	4.242	0.848
EI	177	2.67	5.00	4.503	0.435
EV	177	2.25	5.00	4.429	0.573

Source: Authors own based on survey responses (2024)

5.2.7.2. Level 5 Leadership Indicators

The descriptive statistics for L5L showed an total mean score of 4.242 (*SD* = 0.848). This indicates a favourable perception of the respondents in rating their leaders as level 5 leaders. Respondents' perception of their leaders as being dedicated to the organisation and being self-motivated rated most highly, with the items having means of 4.565 and 4.582, respectively. The descriptive statistics for L5L is shown in Table 15.

Table 15: Descriptive Statistics for L5L Construct

Indicator	N	Minimum	Maximum	Mean	Std. Deviation
L5L1	177	1	5	4.237	1.050
L5L2	177	1	5	4.011	1.239
L5L3	177	1	5	4.023	1.215
L5L4	177	1	5	4.136	1.094
L5L5	177	1	5	3.847	1.404
L5L6	177	1	5	4.220	0.955
L5L7	177	1	5	4.565	0.858
L5L8	177	1	5	4.350	0.966
L5L9	177	1	5	4.446	1.016
L5L10	177	1	5	4.582	0.816

Source: Author's own based on survey responses (2024)

5.2.7.3. Innovation Indicators

With an overall mean of 4.503 (*SD* = 0.848), the descriptive statistics for EI showed a positive perception of EI amongst the respondents. As shown in Table 16, it is evident that EI2 has the highest average value. This suggests that the respondents exhibit a favourable tendency towards actively seeking new working methods, techniques, and tools. Collectively, idea generation which comprised EI1 and EI2 had a higher combined average mean value than idea promotion (EI3 and EI4) and idea realisation (EI5 and EI6).

Table 16: Descriptive Statistics for EI Construct

Indicator	N	Minimum	Maximum	Mean	Std. Deviation
EI1	177	2	5	4.542	0.584
EI2	177	2	5	4.701	0.560
EI3	177	3	5	4.593	0.568
EI4	177	2	5	4.339	0.760
EI5	177	1	5	4.316	0.834
EI6	177	3	5	4.525	0.613

Source: Author's own based on survey responses (2024)

5.2.7.4. Employee Voice Indicators

Descriptive statistics for EV revealed an overall mean value of 4.345 (*SD* = 0.712). This again depicts a favourable tendency of the respondents to participate in EV. Furthermore, the collective mean scores of promotive voices (EV1 and EV2) and prohibitive voice (EV3 and EV4) are relatively close. This suggests a positive association of the participants with both dimensions, namely, to proactively provide constructive suggestions and to speak up about problems and undesirable behaviours. Table 17 contains the descriptive statistics for the EV indicators.

Table 17: Descriptive Statistics for EV Construct

Indicator	N	Minimum	Maximum	Mean	Std. Deviation
EV1	177	2	5	4.446	0.665
EV2	177	2	5	4.480	0.700
EV3	177	2	5	4.446	0.698
EV4	177	2	5	4.345	0.738

Source: Author's own based on survey responses (2024)

5.2.7.5. Correlation Between Variables

The correlation coefficients of the demographic variables and constructs is shown in Table 18.

The correlations between the three constructs are all positive. Further all the correlations are significant at $p < 0.01$. The correlations between EV and EI show a strong relationship with $r > 0.5$, which may indicate that when employees are in an environment where they are free to communicate and give their ideas, they will be more likely to innovate.

It is also worth noting that none of the other demographic variables, age, gender, years of service, education level and job level had significant statistical correlation with EI. This may suggest that these factors were not significant variables that could impact EI, which would have otherwise potentially influenced the results of the study.

Other expected significant positive correlations is that an employee's years of service in the organisation increases with age, an employees' job level increases with age, and job levels increase with education levels. Consistent with the evaluation of construct mean scores by demographics in section 5.2.6.7, females have a greater correlation with the leaders as level 5 leaders and employees with fewer years of service appear to identify more with their leaders as level 5 leaders.

An interesting observation is that males seem to have higher job levels than females, as reflected by the significant negative correlation between gender and job level. This may be in line with the perception that the manufacturing industry is male dominated.

Table 18: Spearman's Correlation Coefficients

	Age	Gender	Years of Service	Education Level	Job Level	L5L	EI	EV
Age	1.000							
Gender	-0.130	1.000						
Years of Service	0.309**	-0.122	1.000					
Education Level	0.014	-0.076	-0.079	1.000				
Job Level	0.368**	-0.195**	-0.017	0.405**	1.000			
L5L	-0.113	0.174*	-0.201**	-0.119	-0.117	1.000		
EI	0.088	0.014	-0.076	0.053	0.109	0,403**	1.000	
EV	-0.044	0.033	-0.051	-0.023	-0.097	0,385**	0,565**	1.000

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

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

Source: Author's own based on survey responses (2024)

5.3. Model Estimation

5.3.1. The PLS Path Model

Based on the theoretical hypothesised model established in Chapter Three, the following PLS path was assessed using PLS-SEM (refer Figure 7). The hypotheses that were determined to test the relationship between the predictors to the outcomes are:

H1: There is a positive relationship between level 5 leadership and employee innovation.

H2: There is a positive relationship between level 5 leadership and employee voice.

H3: There is a positive relationship between employee voice and employee innovation.

H4: Employee voice mediates the relationship between level 5 leadership and employee innovation.

The next two subsections assess the outer and inner paths of the PLS-SEM path model.

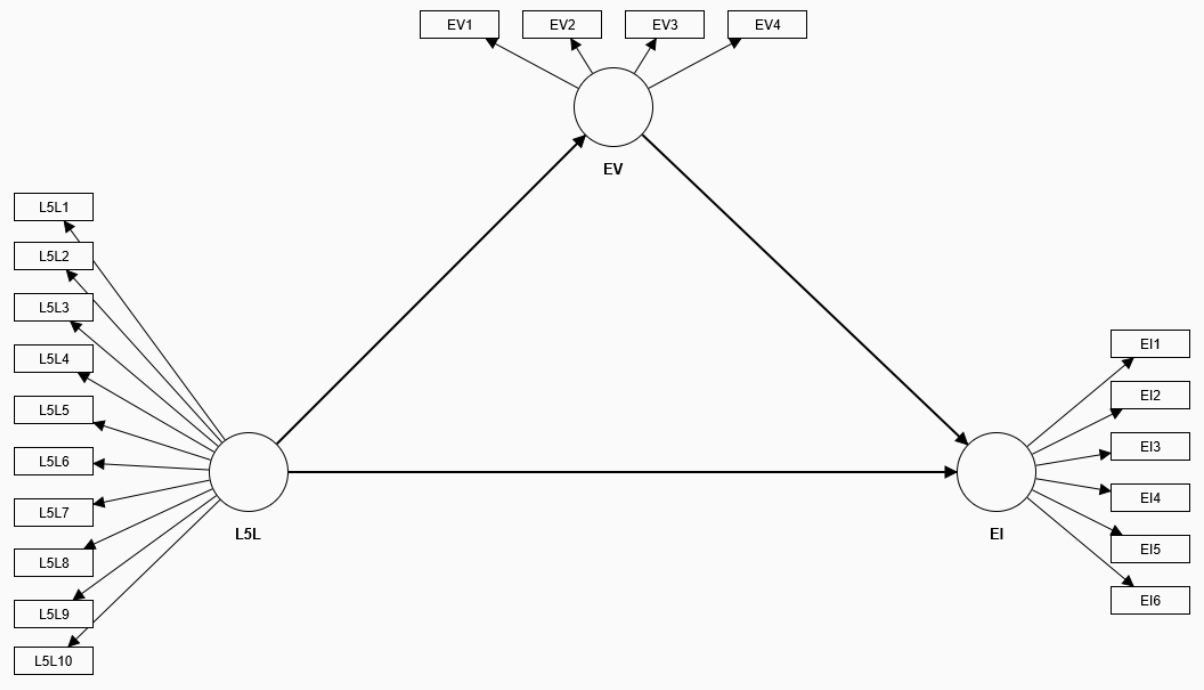


Figure 7: PLS-SEM Path Model

Source: Author's own (2024)

5.3.2. Evaluation of Measurement Model

SmartPLS 4.0 was employed to estimate the measurement and structural model (Ringle et al., 2024). This statistical software evaluates the psychometric properties of the measurement model and estimates the parameters of the structural model. However before this the measurement method for the constructs was specified.

5.3.2.1. Construct Measurement Method

Using the guidelines defined in sub-section 4.3.6.9, to specify the measurement method for the constructs, the following considerations were undertaken, past theory, the internal consistency reliability and AVE of the construct and the computation of CTA (Hair, Black, Babin & Sarstedt, 2014; Hair, Risher, Sarstedt & Ringle, 2019).

Past research based on EI specified the construct as reflective (Amankwaa et al., 2019; Ullah et al., 2020). Composite reliability and AVE for EI exceeded the minimum thresholds (see section 5.3.2.3 and 5.3.2.4), implying that the construct is likely to be reflective. In evaluating the CTA values shown in table 19, all the tetrads had 0 present in them, i.e. the CI low and CI high were negative and positive, respectively. Should the signs of the two metrics be the same it suggests that 0 is not present and the construct is formative. The CTA thus confirmed the specification of EI as a reflective construct (Bollen & Ting, 2000).

Table 19: Confirmatory Tetrad Analysis for EI

EI tetrad	CI low adj.	CI high adj.
1: EI1,EI2,EI3,EI4	-0.013	0.013
2: EI1,EI2,EI4,EI3	-0.010	0.011
4: EI1,EI2,EI3,EI6	-0.020	0.005
6: EI1,EI3,EI6,EI2	-0.007	0.021
10: EI1,EI3,EI4,EI6	-0.005	0.028

Source: Author's own based on survey responses (2024)

Employee voice has similarly been specified as a reflective construct in prior studies (Rasheed et al., 2021; Sarfraz et al., 2022; Ullah et al., 2020). Composite reliability and AVE for EV exceeded the minimum thresholds (see section 5.3.2.3 and 5.3.2.4), suggesting that the construct is likely to be reflective. Furthermore no tetrad disappeared (became 0) as illustrated in table 20, thus empirically substantiating the categorisation of EV as a reflective construct (Bollen & Ting, 2000).

Table 20: Confirmatory Tetrad Analysis for EV

EV tetrad	CI low adj.	CI up adj.
1: EV1,EV2,EV3,EV4	-0.005	0.040
2: EV1,EV2,EV4,EV3	-0.006	0.038

Source: Author's own based on survey responses (2024)

Although research on L5L is scarce a prior study on the construct specified the concept as reflectively measured. This is substantiated by both the composite reliability and AVE exceeding the minimum thresholds and the CTA depicted in table 21.

Table 21: Confirmatory Tetrad Analysis for L5L

L5L tetrad	CI low adj.	CI up adj.
1: L5L1,L5L10,L5L2,L5L3	-0.149	0.323
2: L5L1,L5L10,L5L3,L5L2	-0.059	0.393
4: L5L1,L5L10,L5L2,L5L4	-0.270	0.153
6: L5L1,L5L2,L5L4,L5L10	-0.090	0.293
7: L5L1,L5L10,L5L2,L5L5	-0.199	0.296
10: L5L1,L5L10,L5L2,L5L6	-0.530	0.013
13: L5L1,L5L10,L5L2,L5L7	-0.570	0.059
17: L5L1,L5L10,L5L8,L5L2	-0.075	0.090
20: L5L1,L5L10,L5L9,L5L2	-0.070	0.091
29: L5L1,L5L10,L5L6,L5L3	-0.090	0.073
31: L5L1,L5L10,L5L3,L5L7	-0.513	0.052
35: L5L1,L5L10,L5L8,L5L3	-0.129	0.089
41: L5L1,L5L10,L5L5,L5L4	-0.233	0.157
43: L5L1,L5L10,L5L4,L5L6	-0.396	0.041
47: L5L1,L5L10,L5L7,L5L4	-0.059	0.113
50: L5L1,L5L10,L5L8,L5L4	-0.135	0.094
60: L5L1,L5L5,L5L7,L5L10	-0.044	0.509
64: L5L1,L5L10,L5L5,L5L9	-0.492	0.018
66: L5L1,L5L5,L5L9,L5L10	-0.042	0.444
71: L5L1,L5L10,L5L8,L5L6	-0.192	0.073
80: L5L1,L5L10,L5L9,L5L7	-0.256	0.027
91: L5L1,L5L2,L5L3,L5L6	-0.066	0.211
120: L5L1,L5L5,L5L6,L5L2	-0.373	0.057

169: L5L1,L5L3,L5L5,L5L8	-0.119	0.255
182: L5L1,L5L3,L5L9,L5L6	-0.091	0.400
205: L5L1,L5L4,L5L6,L5L7	-0.056	0.395
233: L5L1,L5L5,L5L8,L5L7	-0.100	0.341
236: L5L1,L5L5,L5L9,L5L7	-0.158	0.335
248: L5L1,L5L6,L5L9,L5L8	-0.222	0.09
281: L5L10,L5L2,L5L8,L5L4	-0.489	0.068
324: L5L10,L5L4,L5L7,L5L3	-0.516	0.035
358: L5L10,L5L3,L5L8,L5L9	-0.198	0.098
395: L5L10,L5L5,L5L8,L5L6	-0.143	0.089
434: L5L2,L5L3,L5L9,L5L4	-0.158	0.549
526: L5L3,L5L4,L5L5,L5L6	-0.302	0.251

Source: Author's own based on survey responses (2024)

After specifying the measurement approach for the study's constructs, the subsequent sub-sections provide the outcomes of the measurement model assessment. This involves reviewing the validity and reliability of the reflective measurement model used in the study.

Following the guidelines of Hair, Risher, Sarstedt & Ringle (2019), the evaluation of the reflective measurement model's validity and reliability involves estimating: (1) factor loadings, (2) internal consistency reliability, (3) convergent validity, and (4) discriminant validity. This evaluation is contained in the following sub-sections.

5.3.2.2. Indicator Loadings

EI5 was the only indicator that fell outside the recommended value range of 0.61 to 0.9 (Hair, Black, Babin & Sarstedt, 2014; Hair, Hult, Ringle & Sarstedt, 2014). This shows that most of the construct accounts for greater than half of the indicators' variance. Although Stevens (2002) contended that factor loadings above 0.4 are acceptable, EI5 was removed from the model based on the guidelines from Hair, Hult, Ringle & Sarstedt (2014). Removing the loading resulted in an improvement in AVE. Indicator loadings are presented in Table 22.

Table 22: Indicator Loadings

Construct	EI	EV	L5L
EI1	0.648		
EI2	0.652		
EI3	0.783		
EI4	0.619		
EI5	0.526		
EI6	0.788		
EV1		0.761	
EV2		0.816	
EV3		0.854	
EV4		0.838	
L5L1			0.821
L5L2			0.766
L5L3			0.839
L5L4			0.858
L5L5			0.741
L5L6			0.741
L5L7			0.776
L5L8			0.840
L5L9			0.832
L5L10			0.765

Source: Author's own based on survey responses (2024)

5.3.2.3. Internal Consistency Reliability

Cronbach's Alpha and Composite Reliability were used to assess internal consistency reliability. The results for both these statistics are represented in Table 23. Cronbach's Alpha ranged from 0.753 and 0.937 and Composite Reliability ranged from 0.762 to 0.939. The acceptable limit for both metrics is 0.7 (Hair Jr et al., 2021). This shows that the indicators employed to measure the constructs have good internal consistency reliability.

Table 23: Construct Reliability Analysis

	Cronbach's alpha	Composite reliability
L5L	0.937	0.939
EI	0.753	0.762
EV	0.836	0.846

Source: Author's own based on survey responses (2024)

5.3.2.4. Convergent Validity

The first indicator of construct validity is convergent validity. When the AVE value exceeds or is equivalent to 0.50, convergent validity is established (Fornell & Larcker, 1981). The convergent validity for the study based on AVE computed confirms that all constructs have AVE of over 0.5. Hence, convergent validity is confirmed (see table 24)

Table 24: Construct Convergent Validity

	Average variance extracted (AVE)
L5L	0.638
EI	0.506
EV	0.669

Source: Author's own based on survey responses (2024)

5.3.2.5. Discriminant Validity

Discriminant validity was assessed using HTMT ratio. HTMT relies on evaluating the correlation among constructs and has been suggested as a more appropriate approach for establishing discriminant validity compared to the conventional metric proposed by Fornell and Larcker (Henseler et al., 2015). Henseler et al. (2015) and Franke and Sarstedt (2019) recommended a threshold of 0.9 or less for similar constructs or 0.85 for distinct constructs. Table 25 shows that HTMT is not a concern for this research and discriminant validity is thus confirmed. The literature review showed that EI and EV are conceptually very similar constructs. Zare and Flinchbaugh (2019) emphasised that voice and creativity are similar behaviours.

Discriminant validity for these constructs was thus assessed against the upper bound threshold of 0.9.

Table 25: Discriminant Validity

	HTMT
EV <-> EI	0.813
L5L <-> EI	0.603
L5L <-> EV	0.501

Source: Author's own based on survey responses (2024)

5.3.3. Evaluation of Structural Model

Once the validity and reliability of the measurement model was determined, the structural model was estimated based on the guidelines from Hair, Risher, Sarstedt & Ringle (2019). Firstly, the multicollinearity of the structural model was evaluated. This was followed by an evaluation of the standardised path coefficients to test the hypotheses. The explanatory and predictive power of the model was then evaluated by explaining the R^2 , explaining the f^2, and measuring the Q^2predict. Next, the model fit was assessed by computing and evaluating SRMR, followed by robustness checks. Lastly the test of mediation was assessed.

5.3.3.1. Multicollinearity of the Structural Model

To assess for multicollinearity of the structural model, VIF values for the inner model were calculated. As shown in Table 26, the VIF indicators were all below the threshold (<3) (Hair, Risher, Sarstedt & Ringle, 2019). This further confirms that the model is free from multicollinearity and CMB (Kock, 2015; Sarfraz et al., 2022).

Table 26: Multicollinearity – Inner model

Constructs	VIF
EV -> EI	1.256
L5L -> EI	1.256
L5L -> EV	1.000

Source: Author's own based on survey responses (2024)

5.3.3.2. Hypothesis Testing

The standardised path coefficients were then modelled (β) in SmartPLS (Ringle et al., 2024) to test the hypothesis of the research. *t*-Statistics were determined through BCa bootstrapping with 5 000 resamples (Hair Jr et al., 2021). Bias corrected *t*-Statistics greater than 1.96 and *p*-value less than 0.005 indicate a significant relationship at a 95% confidence interval (Hair, Black, Babin & Sarstedt, 2014; Hair, Hult, Ringle & Sarstedt, 2014).

H1: There is a positive relationship between level 5 leadership and employee innovation.

The results revealed that L5L has a significant positive effect on EI (β = 0.276, t = 4.077, p < 0.001). Hence, H1 was supported.

H2: There is a positive relationship between level 5 leadership and employee voice.

The results revealed that L5L has a significant positive effect on EV (β = 0.451, t = 6.306, p < 0.001). Hence, H2 was supported.

H3: There is a positive relationship between employee voice and employee innovation.

The results revealed that EV has a significant positive effect on EI (β = 0.527 t = 7.943, p < 0.001). Hence, H3 was supported.

Notably the path coefficient for the L5L–EV relationship was greater than the L5L–EI relationship, indicating that L5L has a relatively stronger impact on EV. Furthermore the bias corrected path coefficients are also significant. The results are summarised in Table 27 and the structural model (Figure 8).

Table 27: Direct Relationship Results

Path	Path coefficient (Original)	Path coefficient (BCa)	SD	*t*-statistics	*p*-values	Hypothesis
L5L -> EI	0.276	0.276	0.068	4.077	0.000	Supported
L5L -> EV	0.451	0.456	0.072	6.306	0.000	Supported
EV -> EI	0.527	0.526	0.066	7.943	0.000	Supported

Source: Author's own based on survey responses (2024)

Analysing confidence intervals through bootstrapping provides additional insights into the robustness of path coefficients in the structural model. This approach permits evaluating cases where the path coefficient substantially differs from 0, and whether its actual value falls within a 95% confidence interval range. An effect is considered significant if the confidence interval does not include 0.

Table 28 presents the outcomes of the BCa bootstrap confidence intervals. The results affirm that the actual values of the path coefficients fall within the 95% confidence interval range. Importantly, none of the confidence intervals include 0, indicating the significance of all the relationships.

Table 28: BCa Bootstrap Confidence Intervals for Direct Effects

Relationship	Path coefficient (original)	Path coefficient (BCa)	Bias	2.50 %	97.50 %
L5L -> EI	0.276	0.277	0.001	0.142	0.405
L5L -> EV	0.451	0.456	0.005	0.293	0.576
EV -> EI	0.527	0.526	0.001	0.378	0.639

Source: Author's own based on survey responses (2024)

5.3.3.3. Explanatory and Predictive Capability of the Structural Model

Structural model evaluation in PLS-SEM comprises estimating a model's ability to explain and predict. Hence to establish goodness of fit, the R^2, f^2, Q^2predict were evaluated.

The R^2 for EI was 0.485 (Table 29). This indicates that 48.5% variance in EI can be attributed to L5L and EV. The R^2 for EV was determined to be 0.204. Considering the accepted cut off value of 0.10 (Falk & Miller, 1992), the results indicate that the model obtained R^2 statistics which are acceptable for social science research.

In this research the impact on EI is evaluated through L5L and EV variables and it is therefore necessary to present f^2 effect size (Hair Jr et al., 2021). Based on the guidelines of Cohen (1988), the result of the study shows that the removal of EV has a large influence on EI, while the removal of L5L has a medium influence on EV and a small influence on EI.

Table 29: Explanatory and Predictive Power of the PLS path model

Predictor	Outcome	R^2	f^2	Q^2predict
L5L			0.118	0.247
EV	EI	0.485	0.256	0.186
L5L	EV	0.204	0.428	

Source: Authors own based on survey responses (2024)

In assessing the models predictive capability the two step approach by Shmueli et al. (2019) was conducted. Firstly the Q^2predict metric for the endogenous variables was greater than 0 (table 30), which suggests that the PLS-SEM model has greater predictive capability than the computed training model (Shmueli et al., 2019). Secondly as the data was normally distributed, MAE of the PLS-SEM model was compared to LM as shown in table 30. As the MAE for the PLS-SEM model was < LM for most of the indicators (7 out of 9), it was established that the model has a medium level of predictive power.

Table 30: Assessment of Predictive Power of the PLS-SEM Path Model

Indicator	PLS-SEM_MAE	LM_MAE	Difference
EI1	0.492	0.518	-0.026
EI2	0.386	0.382	0.004
EI3	0.455	0.477	-0.022
EI4	0.623	0.634	-0.011
EI6	0.479	0.491	-0.012
EV1	0.535	0.553	-0.018
EV2	0.569	0.584	-0.015
EV3	0.546	0.565	-0.019
EV4	0.586	0.576	0.010

Source: Authors own based on survey responses (2024)

5.3.3.4. Model Fit

Finally, to evaluate model fit SRMR was computed. Values of <0.08 are considered a good fit (Hu & Bentler, 1998). The SRMR statistic of 0.075 was below the threshold, thereby indicating model fit for the PLS path model. It is important that caution is exercised when assessing the suitability of goodness-of-fit measures for PLS-SEM (Hair, Risher, Sarstedt & Ringle, 2019; Hair, Sarstedt & Ringle, 2019). The researchers note that goodness of fit measures is an area still in early research for PLS-SEM. The models predictive and explanatory power are thus a more appropriate means to validate test results.

5.3.3.5. Robustness Checks

The evaluation of endogeneity was based on the procedures developed by Hult et al. (2018). This involved employing the Gaussian copula approach based on the outcomes of the assessment of the structural model. Firstly, the independent variables were not normally distributed, which confirms the appropriateness of the Gaussian copula approach (Park & Gupta, 2012). The results shown in Table 31 indicate that none of the Gaussian copula's are significant (all *p*-value' greater than 0.05) (Sarstedt, Ringle, Nitzl, Cheah, Ting, Moisescu & Radomir, 2020). It can be concluded that endogeneity is not an issue in this study, validating the outcome robustness (Hult et al. (2018).

Table 31: Evaluation of Endogeneity Using the Gaussian Copula Method

Relationship	Coefficient	*p*-values
One copula		
EV -> EI	0.526	0.000
L5L -> EI	0.245	0.011
L5L -> EV	0.451	0.000
GC (L5L) -> EI	0.029	0.669
One copula		
EV -> EI	0.483	0.002
L5L -> EI	0.276	0.000
L5L -> EV	0.451	0.000
GC (EV) -> EI	0.033	0.726
Two copula		
EV -> EI	0.494	0.002
L5L -> EI	0.252	0.012
L5L -> EV	0.451	0.000
GC (L5L) -> EI	0.023	0.758
GC (EV) -> EI	0.025	0.804
Three copula		
EV -> EI	0.494	0.002
L5L -> EI	0.252	0.012
L5L -> EV	0.435	0.000
GC (L5L) -> EI	0.023	0.758
GC (L5L) -> EV	0.015	0.858
GC (EV) -> EI	0.025	0.804

Source: Author's own based on survey responses (2024)

To examine the assumption of linearity, an evaluation of quadratic effects was done, aligning with methodologies employed in previous studies (Vaithilingam et al., 2024). *p*-values > 0.05 show that the quadratic effect is not significant which suggest model linearity. The findings are depicted in Table 32. The quadratic effect based on the results of the relationships of the structural model all have *p*-values > 0.05. Thus, the assumption of linearity is appropriate.

Table 32: Evaluation of Linearity Using the Quadratic Effect Method

Relationship	Coefficient	*p* - values
QE (L5L) -> EI	-0.059	0.152
QE (L5L) -> EV	-0.025	0.569
QE (EV) -> EI	-0.017	0.826

Source: Author's own based on survey responses (2024)

5.3.3.6. Mediation Analysis

The mediation test to evaluate whether EV intervenes in the relationship between L5L, and EI was conducted on SmartPLS 4.0 (Ringle et al., 2024). The path coefficients depicted in Table 33 were obtained after conducting BCa at a 95% confidence interval.

The results revealed significant partial mediating roles of EV (β = 0.238, t = 5.062, p < 0.001). The total effect of L5L on EI was also significant (β = 0.514, t = 7.308, p < 0.001). The indirect effect represents 46.3% (0.238/ 0.514 x 100) of the total effect of L5L on EI. At 46.3% this percentage known as the variance accounted for shows that EV is a partial mediator to the L5L and EI relationship (Hair et al., 2013).

Table 33: Indirect Relationship Results

Total effects (L5L->EI)		Direct effects (L5L->EI)		Indirect effects of EV on EI				
β	*p*-value	β	*p*-value		β	SD	*t*-statistic	*p*-value
0.514	0.000	0.276	0.000	**H4**:	0.238	0.047	5.062	0.000

Source: Author's own based on survey responses (2024)

The significance of the mediating relationship is further shown in Table 34, which indicates that the BCa confidence intervals for the indirect relationship do not consist of a 0 value and therefore the mediating relationship is significant.

Table 34: BCa Bootstrap Confidence Intervals for Indirect Effects

Relationship	Path coefficient (original)	Path coefficient (BCa)	Bias	2.50%	97.50 %
L5L->EV -> EI	0.238	0.240	0.002	0.149	0.332

Source: Author's own based on survey responses (2024)

5.3.3.7. Summary of Findings

The summarised results of the study are presented in Table 35 and the structural model (Figure 8).

Table 35: Direct and Indirect Relationship Results

Construct	Path coefficient (original)	Path coefficient (BCa)	SD	*t*-statistics	*p*-values	Hypothesis
L5L -> EI	0.276	0.277	0.068	4.077	0.000	Supported
L5L -> EV	0.451	0.456	0.072	6.306	0.000	Supported
EV -> EI	0.527	0.526	0.066	7.943	0.000	Supported
L5L -> EV -> EI	0.238	0.240	0.047	5.062	0.000	Supported

Source: Author's own based on survey responses (2024)

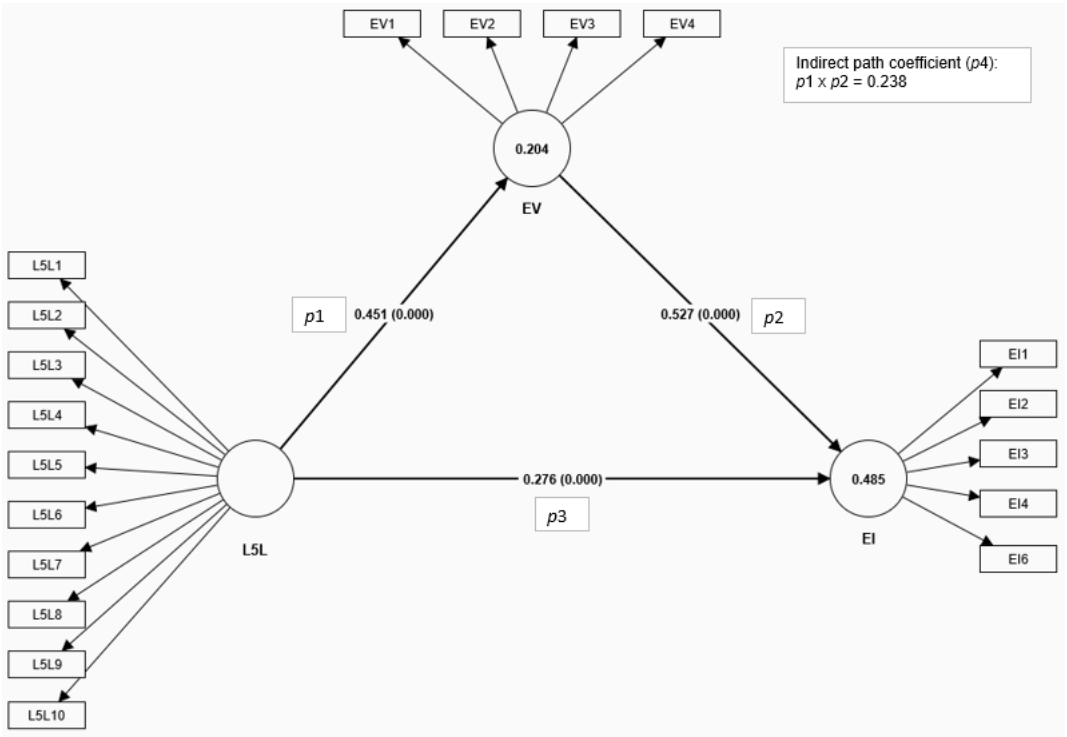


Figure 8: Estimated Structural Model with Path Coefficients, *p*-value and R^2

Source: Author's own based on survey responses (2024)

5.3.3.8. Results Excluding Outliers

This section provides the outcomes of the study after removing the multivariate outliers discussed in section 5.2.3. After removing the outliers from the dataset, the results of all four hypothesis are still supported, see Table 36. The results are thus consistent with the complete sample estimates. Furthermore, the Shapiro Wilks test of normality in Table 37 shows that the data is still non-normally distributed. Given that removing the outliers does not alter the conclusion of the study, change the normality assumptions and are not errors, the decision to not remove them was validated (Leys et al., 2019).

Table 36: Direct and Indirect Relationship Results –- Excluding Outliers

Construct	Path coefficient	SD	*t*-statistics	*p*-values	Hypothesis
L5L -> EI	0.291	0.068	4.276	0.000	Supported
L5L -> EV	0.377	0.084	4.508	0.000	Supported
EV -> EI	0.496	0.064	7.726	0.000	Supported
L5L -> EV -> EI	0.187	0.048	3.927	0.000	Supported

Source: Author's own based on survey responses (2024)

Table 37: Shapiro Wilks Test of Normality – Excluding Outliers

Construct	Statistic	df	*p*-value
L5L	0.814	171	<0.001
EI	0.910	171	<0.001
EV	0.882	171	<0.001

Source: Author's own based on survey responses (2024)

This Chapter provided the findings and results of the study. Using PLS-SEM all the hypothesised relationships were found to be supported. The next Chapter discusses these results in relation to the Literature Review contained in Chapter Two.

6. Chapter Six: Discussion of Results

6.1. Introduction

The purpose of this study was to provide a theoretical model for enhancing EI in organisations, with the key predictors for EI being L5L and EV. This is highly relevant for two significant reasons. Firstly, a dynamic and turbulent business environment requires organisations to innovate to succeed and thrive. Secondly an underperforming South African manufacturing industry relative to global standards, requires South African manufacturers to innovate to remain globally competitive and contribute to employment and economic growth.

Applying SET as a theoretical framework, a hypothesised model was constructed to facilitate the examination of relationships among the constructs. The model aimed to address two main perspectives within the study. Firstly, there was a need to evaluate the direct association between L5L as a predictor of EI. Secondly, the investigation sought to comprehend the mediating influence of EV on the relationship between L5L and EI. Thus, H2 required an understanding of the relationship between L5L and EV, H3 aimed at understanding the relationship between EV and EI and finally, H4 tested the mediating effect of EV on the relationship between L5L and EI.

To test this model, PLS-SEM was applied based on its capability for explanatory and predictive analysis. After confirming the reliability and validity of the measurement model, the direct and indirect relationships of the structural model were tested. This comprised modelling the path coefficients and determining *t*-statistics using BCa with 5 000 resamples at a 95% confidence level. The explanatory power of the model was evaluated using R^2 and the predictive power of the model was determined using Q^2predict.

The objective of this chapter is to interpret the findings of the hypotheses put forth in Chapter Five within the framework of the literature reviewed in Chapter Two. This will enable the answering of the predominant research question. To this end, an outline of the literature review is presented to aid in the formulation of connections and associations.

The overarching theoretical model of SET was first established in Chapter Two. By way of social exchange with high levels of trust, leaders can influence followers to take on extra roles (Bharanitharan et al., 2019). EI and EV were positioned to be extra role behaviours, that go beyond an individual's job description (Coetzer et al., 2018; Ullah et al., 2020; Zare & Flinchbaugh, 2019). The importance of innovation and EI to long term business success and survival, particularly in highly competitive manufacturing companies influenced by a volatile global environment, was discussed. The significance of EV to enhance business outcomes was examined (Chamberlin et al., 2017), including the potential of EV as a vital conduit to enable employees to innovate (Ashiru et al., 2022). With EI and EV identified as extra role behaviours, leadership was established as one of the most critical drivers of EI, whether it be directly (Grošelj et al., 2021) or through the means of EV (Chen & Hou, 2016). The concept of L5L, characterised by PH and PW was introduced (Collins, 2001a), with potential links to SET through trust, perceived support and commitment. Despite significant work being done on the relationship between varying leadership styles and EI (Hughes et al., 2018; Lee et al., 2020), the position of L5L as a predictor of EI was not understood until now.

Through the lens of SET, this study thus aimed, firstly to establish whether L5L positively influenced the extra role behaviour of EI and secondly, whether the extra role behaviour of EV mediates the relationship between L5L and EI. The rest of this chapter centres on detailing the demographic characteristics of the sample, evaluating the descriptive statistics of the constructs, and engaging in a discussion of the results of hypothesis testing in connection with the pertinent literature reviewed earlier.

6.2. Sample Demographics

This study included a sample population of 177 participants, all of whom were affiliated with the South African manufacturing industry. The sample size exceeded the minimum required, thereby meeting acceptable standards. This section discusses the sample demographic findings in relation to participant gender, age, education level, job level, years of service at their current company and sector of the manufacturing industry that the participants' organisations fall under.

The statistics on gender distribution described that 56.6% of the total sample were male and 42.4% were female. Notably there is a negligible difference between the mean scores of males and females, as shown in Table 13. However, females are led by leaders with more L5L qualities. This analysis supports Lee et al's (2020) assertion, that the innovativeness of females on average, is more heavily influenced by their leaders. Despite this, the correlation between gender and EI was not found the be significant (refer Table 18).

The age statistics revealed that most of the candidates were within the age groups of 28–37 years and 38–47 years, with these categories representing 38.4% and 31.2% of the total sample, respectively. The study targeted supervisors, managers and specialists and at this age, individuals would most likely be at a middle or senior manager level and report to an executive level leader with the potential to demonstrate L5L traits. Hence the age frequency distribution is appropriate for this study. The literature review revealed that age may be a factor that can affect innovation and could potentially influence the results of the study. Studies have shown a negative effect between employee age and a wide range of innovation indicators (Schubert & Andersson, 2015). Older employees are less likely to engage in new technology and product innovation. However, an analysis of the EI mean scores across age groups in Table 13 show high and relatively consistent means across the age demographics, confirming the appropriateness of the age distribution for the present study. The correlations between age and EI and EV were also found to be insignificant.

The highest number of respondents recorded an education level of postgraduate (39%), which was followed by bachelor's degree (26%). Research explaining the connection between educational level and innovation has consistently revealed a positive link between these two constructs. Kong et al. (2022) posited that a workforce with a higher education, increases corporate innovation. At an employee level, Sinaga and Razimi (2019) found that employee education increases EI. In the context of the present study, given that most of the sample respondents are highly educated, this may influence the innovation ability of the employees. In analysing the EI mean scores by education level there is a clear trend of EI increasing with age (see Table 13). However, the correlation between education and EI as depicted in Table 18 was insignificant.

A key aspect of this research was that participants should be either supervisors, specialists or managers in the organisation by which they are employed. The final samples showed that 9% of the participants were supervisors, 27.1% were specialists, 46.9% were managers and 16.9% were executives. At the onset of this research, it was noted that specialists and management levels would be the levels at which the most amount of innovation would take place in an organisation (Daveri & Parisi, 2015). This may be further linked to their experiences and education levels. This reflects in the results of Table 13 which show that supervisors have the lowest mean scores for EI. The analysis shows that EI increases with job level, suggesting a positive correlation between job level and EI. However, the correlation between the two variables of 0.109 as reflected in Table 18 was found to be insignificant, leading to the conclusion that the job levels of the participants were deemed suitable for the objectives of the current study.

Most of the participants were employed at their present company for one to five years, with the lowest distribution being participants employed at their organisation for less than one year. Employee tenure is a factor that can influence EI. Although Woods et al. (2018) indicated a favourable relationship, the researcher noted that studies have yielded inconsistent results. The current study shows a consistent EI mean score across different levels of employee tenure (Table 13). Notably the employees employed for less than one year had the highest mean scores across all three constructs. This may suggest that leaders focus more on new employees and new recruits may be a key source of new ideas, which may validate the significant negative correlation between years of service in current organisation and L5L.

Based on the demographic statistics in Chapter Five, the manufacturing sub-sectors with the highest proportion of participants were from printing and packaging (31.1%), automotive (22%) and food and beverages (15.8%). Food and beverages, transport equipment and wood products, publishing and printing collectively comprise 46% of SA’s total manufacturing income (Statistics South Africa, 2023). When the mean scores were compared across sub-sectors, no statistically significant differences were noted.

Although the results on demographic statistics, showed trends in support and contradiction of past research on factors that may influence EI, no significant correlation was found between any of the factors and EI. The following section provides an overview of the descriptive statistics pertaining to each of the constructs examined in the study.

6.3. Overview of Descriptive Statistics by Construct

6.3.1. Level 5 Leadership

The descriptive statistics for L5L showed an overall mean score of 4.242. On a scale of 1–5 this tends toward “agree”. This indicates that the survey participants had a positive perception of their leaders as level 5 leaders. The L5L questions were worded to include the dimensions of PH and PW (Reid et al., 2014). According to Collins (2001a), level 5 leaders have equal parts PH and PW. The average mean score for the PH dimension was 4.051 and 4.433 for the PW dimension. Although this represents a slight leaning of the participants in rating their leaders towards PW, both tend towards “agree.” This indicates that the respondents satisfied the requirement of L5L, as high levels of PH and PW in combination are required for L5L. This requirement was further met as shown in Table 15, where all indicators relating to the L5L construct showed relative consistency and tended from “agree” to “strongly agree”. As noted in Chapter Five, respondents’ perceptions of their leaders as being dedicated to the organisation (L5L7) and being self-motivated (L5L10) rated most highly, with the items having means of 4.565 and 4.582, respectively.

6.3.2. Employee Innovation

Employee innovation showed an overall mean score of 4.503. This tends toward “agree” on the Likert scale used for the study. This indicates that the participants had a positive perception in rating themselves as innovative. The questions used to measure EI were developed to include dimensions of idea generation (EI1 and EI2), idea promotion (EI3 and EI4) and idea implementation (EI5 and EI6) (Janssen, 2000; Ullah et al., 2020). Based on the findings in Chapter Five, the average mean score of idea generation was higher than idea promotion and idea implementation. This signals that the participants are more effective at creativity as compared to the promotion and implementation of new ideas. Table 16 indicated that the mean scores

were consistent across the six indicators of EI ranging from “agree” to “strongly agree”. With high EI ratings based on self-reported data, the risk of CMB exists (Podsakoff et al., 2003). However, the tests for CMB revealed that it is not an issue for this study. Nevertheless, caution should be applied when evaluating the results.

6.3.3. Employee Voice

Employee voice showed an overall mean score of 4.429. This tends toward “agree.” This indicates that the participants had a positive perception in rating themselves as having a strong voice. The questions used to measure EV were developed to include dimensions of promotive and prohibitive voice (Liang et al., 2012). Although the study by Chen et al. (2018) considered promotive and prohibitive voice as separate constructs, the present study followed the work of Ullah et al. (2020) and Shin et al. (2022), who deemed that the dimensions of promotive and prohibitive voice collectively make up the single construct of EV. Furthermore, as shown in Chapter Five, the collective average means scores of promotive voices (EV1 and EV2) and prohibitive voice (EV3 and EV4) are close at 4.463 and 4.395. Table 17 also indicates consistency amongst the four indicators making up EV. All indicators tend to “agree” on the scale of 1–5, implying that the participants make both constructive suggestions and point out problems in their workplace.

6.4. Level 5 Leadership and Employee Innovation

The next four sections discuss the results of the hypothesis testing in the context of the literature review. These sections include an interpretation of the significance of the present study’s findings in relation to what was already known about the research problem being investigated and explain new insights that emerged because of the research.

This study aimed to comprehend the dynamics of the connection between L5L and EI. Hypothesis one was formulated to contribute to a deeper understanding of this relationship. In this section, the outcomes are analysed and compared with prior literature to draw interpretations and insights.

H1: There is a positive relationship between level 5 leadership and employee innovation.

6.4.1. Interpretation of Results

As discussed in Chapter Five, the results indicated that the relationship between L5L and EI is significant and H1 was supported (β = 0.276, t = 4.077, p < 0.001). Furthermore, with an f^2 effect size of 0.118, removing L5L from the model has a small to medium influence on EI.

The analysis of the results indicates that L5L, comprising the core traits of PH and PW, plays a key role in shaping EI. These findings were expected based on the notion that level 5 leaders can favourably influence the behaviour of their employees and thus gain their trust and commitment in engaging in extra role behaviour (Caldwell et al., 2017; Sarfraz et al., 2022, Wang et al., 2018). Thus, by way of SET, through their actions of L5L, leaders create an environment for employees to participate in extra role behaviour, namely EI. The leadership trait of humility as an isolated quality has been known to facilitate favourable employee outcomes, including job satisfaction, creativity and performance (Lehmann et al., 2023). This suggests that leaders, through PH cultivate an environment where employees are free to be more innovative and take risks in a workplace. The role of PW and L5L (which combines PH and PW), in enhancing organisational outcomes is much less understood. While Collins (2001a) purported that L5L leads to successful organisations, outside of his work little empirical evidence exists that L5L supports specific organisational outcomes such as EI. The outcome of this research propose that the combined effect of PH and PW by way of sustained determination, perseverance and commitment, can influence employees to commit to be more innovative.

Although hypothesis one was supported it is worth noting the weak f^2 effect size of L5L on EI and that the path coefficient was the lowest amongst all direct relationships. In this regard while this study focused on the positive attributes of L5L, PH and PW can also have negative attributes (Reid et al., 2014). The researchers note that a level 5 leader may be seen as overbearing, socially awkward, fuelled by personal ambition, have an obsession for the organisation, fanatically driven and will

settle for only the best. This may suggest that L5L could in some instances have a negative influence on employee outcomes, and future research should consider these relationships.

6.4.2. Comparison to Previous Literature

The literature review contained in Chapter Two showed that a vast extent of studies exists on the relationship between various leadership styles and EI (Hughes et al., 2018; Grošelj et al., 2021; Mokhber et al., 2018). Transformational leadership has received significant focus (Alblooshi et al., 2021; Kark et al., 2018). Studies on transformational leadership have indicated a positive impact of transformational leadership and EI (Grošelj et al., 2021; Mokhber et al., 2019). However, there has also been an inconsistency of results with some studies showing insignificant and sometimes negative relationships between transformational leadership and creativity (Koh et al., 2019; Miao et al., 2012). Although the findings of the present research are in alignment on past studies on the positive impact of transformational leadership on innovation, the distinct features of L5L also set it apart. Transformational leadership often underlines inspiration and charismatic personalities (Raffo & Williams, 2018), whereas L5L underlines the duality of humility and the relentless pursuit of organisational success. The literature review revealed that there is a growing requirement for more people-orientated leadership styles such as L5L, which enhances the relevance of these results.

In contrast to transactional leadership, characterised by an emphasis on rewards and punishments, the findings of the present study highlight that L5L, with its emphasis on humility and a commitment to long-term organisational success, fosters a more intrinsic motivation for innovation among employees. Research has shown that transactional leadership is not a significant predictor of employee creativity (Koh et al., 2019, Lee et al., 2020), in contrast to the findings of the present study on L5L.

Recent studies focused on servant leadership; a people orientated leadership style that some have argued represents the same concept as L5L (Reid et al., 2014). These studies have confirmed that servant leadership has a positive influence on EI (Iqbal et al., 2020; Karatepe et al., 2019; Zhu & Zhang, 2020). Much like L5L, a key component of servant leadership is the trait of humility (Iqbal et al., 2020). A critical

differentiator of the present research is that L5L also includes the traits of PW, a concept that is absent from servant leadership (Reid et al., 2014). The researchers argue that servant leadership can be likened to only the humility dimension of L5L and that L5L may thus be a more complete leadership style than servant leadership. While servant leadership emphasises a leader's focus on employees and the greater community, Alvesson and Einola (2019) critiqued the business practicality of this approach of "trying to make everyone happy".

In a similar context the studies on humble leadership and leader humility have indicated that humble leaders can positively influence EI (Wang et al., 2017; Ye et al., 2020; Zhou & Wu, 2018). Zhou and Wu (2018) noted that servant leaders, L5L and humble leaders all have the trait of humility. Research has however also found that leader humility can have negative consequences on leader effectiveness, and they may be considered by their followers as having less power to act (Zapata & Haynes-Jones, 2019). The difference of this study again is the inclusion of the dimension of PW, which is consistent with Collins (2001a) distinction that L5L is not just about PW but is equally about intense resolve and determination. This study thus provides new and previously untested insight into the leadership and EI relationship.

6.5. Level 5 Leadership and Employee Voice

With an increasing need to consider mediating variables on the relationship between leadership and EI as discussed in the literature review, hypothesis two aimed at understanding the relationship between L5L and EV. An interpretation of the results and comparison to previous literature follows.

H2: There is a positive relationship between level 5 leadership and employee voice.

6.5.1. Interpretation of Results

The findings in Chapter Five illustrate that L5L has a significant effect on EV (β = 0.451, t = 6.306, p < 0.001). Significantly, the path coefficient for the association between L5L and EV exceeds the path coefficient observed in H1. Likewise, the f^2 of 0.256 is a medium effect and greater than the f^2 effect size of L5L on EI, suggesting the removal of the L5L construct has a greater impact on EV.

The findings show that L5L positively influences EV, implying that an employee's voice becomes more active in the presence of a L5L. By way of SET, namely through their actions of L5L, leaders establish a conducive environment that encourages employees to participate in additional or extra role behaviour. Through PH, level 5 leaders create trust in their followers (Caldwell et al., 2017), and this PH along with a strong commitment by way of PW, positively influences followers to commit to extra effort to achieve organisational success (Sarfraz et al., 2022). When followers have trust in their leader, they have assurance that the leader will not cause them harm and are more inclined to take risks willingly (Jin et al., 2022). In these circumstances employees feel comfortable to go beyond their job description, to voice concerns and provide constructive feedback. The findings imply that leaders who treat their employees genuinely and with humility, who are team players that prioritise the team and organisation, who do not seek the spotlight, who are dedicated to the organisation, who show commitment and perseverance, who have a strong work ethic and are results focused, tend to have followers who are more likely to develop and make value adding suggestions and point out problems within the organisation. The findings also indicates that the effect of L5L is more significant on EV than EI, which may highlight the important mediating role that EV plays in driving EI.

6.5.2. Comparison to Previous Literature

The literature review discussed that two research paths on the antecedents of EV, firstly an employee's internal motivation enhances EV and secondly that, leadership can predict EV (Soomro et al., 2021). The present study supports the latter view. The results are in line with prior research on leadership styles and EV, as discussed in the literature review chapter. A study on the relationship between servant leadership, organisational commitment, voice and antisocial behaviours indicated a direct and positive relationship between servant leadership and EV (Lapointe & Vandenberghe, 2018). Chen and Hou (2016) found that follower perception of leader ethical behaviour enhances follower voice behaviour. Lin et al. (2019) confirmed that an employee's sense of power acts as a mediator in the relationship between leader humility and EV. While the results of this study are mostly in line with previous literature, it extends to the existing literature by considering a distinctly dissimilar leadership style, L5L into the leadership and EV relationship studies.

6.6. Employee Voice and Employee Innovation

The objective of hypothesis three was to understand the relationship between EV and EI. An interpretation of the results and comparison to previous literature is detailed below.

H3: There is a positive relationship between employee voice and employee innovation.

6.6.1. Interpretation of Results

Chapter Five showed that EV has significant positive effect on EI (β = 0.527, t = 7.943, p < 0.001). The findings indicate the highest path coefficient of all the direct relationships, which shows that EV is a substantial predictor of EI. With an f^2 effect size of 0.428, the removal of EV from the model has a significant influence on EI. The correlation between EV and EI was also the highest amongst all the variables at 0.565.

The results suggest that when employees feel empowered to speak out and give their opinions, ideas, and concerns, it creates an environment conducive for innovation. Theoretically, EV supports new and novel approaches that enable innovation evaluations. Leadership assess employees as high in creativity and EI when they speak up more to achieve positive organisational outcomes (Chen & Hou, 2016). If employees have awareness of an environment that promotes EV behaviour (Kremer et al., 2019), EI is fostered by way of their engagement in activities and an elevated motivation to voice their viewpoints (Nazir et al., 2021). This implies that the act of expressing one's voice serves as a catalyst for generating creative solutions, fostering a culture where innovative thinking is not only welcomed but actively encouraged. Employees enhance their creativity by actively exploring new technologies, procedures and methods when they believe they have the freedom to articulate their work-related concerns. These results are not unexpected as previous literature has indicated a strong relationship between EV concepts and innovation.

6.6.2. Comparison to Previous Literature

Shin et al. (2022) found a positive relationship between EV concepts and organisational innovation. From employee perspectives, positive relationships were found between EV and EI (Ashiru et al., 2022; Selvaraj & Joseph, 2020). While this research corroborates the results of these previous studies, the nuance of the South African manufacturing context offers a distinction. As discussed in the literature review, EV is influenced by macro-factors or national cultures (Kwon & Farndale, 2020), and little research exists that explains the relationship between EV and EI outside of the Western countries (McKearney et al., 2023). This study thus adds to previous EV and EI research by considering the relationship in a South African manufacturing context.

6.7. The Mediating Effects of Employee Voice

The principal objectives of this research was to firstly understand the direct effect of L5L on EI, and secondly to explain the underlying mechanism on the L5L and EV linkage in South African manufacturing organisations. It was hypothesised that EV is a possible mechanism through which level 5 leaders can impact EI. Hypothesis four thus aimed to understand the mediating effect of EV on the relationship between L5L and EI. An interpretation of the results and comparison to previous literature follows.

H4: Employee voice mediates the relationship between level 5 leadership and employee innovation.

6.7.1. Interpretation of Results

The findings in Chapter Five illustrate that the mediating effect of EV on the relationship between L5L and EI is statistically significant, and that EV partially mediates the relationship between L5L and EI (β = 0.238, t = 5.061, p < .001). Additionally, the f^2 of EV on EI is 0.428 as opposed to 0.118 for L5L on EI. This conveys that removing EV from the model has a far more significant influence on EI than L5L.

Based on these findings, EV emerges as a crucial mediator in the relationship between L5L and EI. This finding suggests that L5L positively influences EI through EV. Section 6.5 highlighted how through the lens of SET, L5L traits in leaders induce trust and commitment of followers to commit to extra-role behaviour in achieving organisational outcomes (Caldwell et al., 2017; Sarfraz et al., 2022, Wang et al., 2018). With this trust, followers take more risks and in such circumstances employees feel comfortable to go beyond their job description and voice concerns and constructive feedback which in turn leads to innovation. Employees are less fearful of penalisation for questioning leaders, speaking up and promoting differences of opinion (Kremer et al., 2019). In such situations the discretionary behaviour of EV leads to EI. If new and novel ideas are unable to be communicated, it is unlikely that they will be implemented (Kremer et al., 2019). As leaders foster an environment where employees believe that their opinions and suggestions are considered, through EV the organisation benefits from a diverse range of perspectives, contributing to a more innovative and creative workforce. This suggests that organizations should not only focus on developing level 5 leaders but also on establishing mechanisms that facilitate and encourage EV.

6.7.2. Comparison to Previous Literature

The mediating position of EV on the leadership and EI relationship, has become an area of focus in recent literature. In studies involving ethical leadership, EV was found to be a mediating factor in the relationship between ethical leadership and EI (Jin et al., 2022; Ullah et al., 2020). In a similar study, Chen and Hou (2016) found that the relationship between ethical leadership and creativity is mediated by voice behaviour. A positive mediating effect of EV was noted in the relationship between paternalistic leadership and innovative work behaviour (Nazir et al., 2021). The current study contributes to the literature on voice behaviour by examining how EV mediates the connection between L5L and EI, thus extending the existing theory.

6.8. Conclusion

Even though a vast amount of literature exists evaluating various leadership styles and EI, the relationship between L5L and EI has up to now not received any attention. This study provides empirical evidence that L5L positively effects EI. Furthermore,

the study proves that the mechanism of EV is a significant partial mediator of the relationship between L5L and EI.

7. Chapter Seven: Conclusions and Recommendations

7.1. Introduction

The defined research problem for this study identified in Chapter One was that in a period of accelerated technological and economic change, South African manufacturing organisations without leadership that inspires innovation, face the risk of being unproductive, uncompetitive and unsustainable, detrimentally impacting economic growth, job creation and poverty. The importance of innovation to support an underperforming South African manufacturing industry formed that basis of this research problem. This importance was confirmed in the literature review (Jiang & Chen, 2018; Khosravi et al., 2019; Lee et al., 2020; Ortiz-Villajos & Sotoca, 2018; Qingyan et al., 2019; Škerlavaj et al., 2019). Innovation was found to contribute to organisation sustainability, competitiveness and growth and EI was found to be the determinant of firm innovation. Consequently leadership was identified as a key driver of innovation and EI. With this challenge, the study aimed to develop a theoretical model that would enhance EI in organisations. L5L built on the foundations of PH and PW was identified as a potential driver of EI. Apart from the work of the founder of the concept of L5L (Collins, 2001a), studies on the concept are limited (Caldwell et al., 2017; Zhou & Wu, 2018). Furthermore, a need for more collaborative leadership styles in a knowledge-based economy (Aziz, 2019) and an increasing interest in developing leaders that place the interests of their followers and organisations ahead of their own (Lapointe & Vandenberghe, 2018), created the need to obtain a in depth view of the influence of L5L on organisational outcomes.

The study's key purpose was thus to gain an understanding of the potential impact that L5L could have on EI and what role EV plays as a potential mechanism that mediates this relationship. To accomplish this goal, a quantitative assessment was conducted to gather data through surveys, followed by a comprehensive examination of the collected data. The outcomes of the findings have been presented and discussed in the preceding chapters. This chapter provides a consolidation of the findings relative to the established hypotheses. The principal findings are discussed prior to demonstrating the theoretical contribution that they make. This is followed by a discussion on the implications for management and other stakeholders and the

limitations of the study. Lastly, recommendations are made for future research followed by the concluding remarks.

7.2. Principal Findings

With the overall objective of understanding how to enhance EI in manufacturing organisations, the two key aspects of the study were to firstly understand whether L5L directly predicts EI and secondly, to understand whether EV mediates the relationship between L5L and EI. The next sections discuss the principal findings for each hypothesis.

7.2.1. Principal Findings – The Relationship Between Level 5 Leadership and Employee Innovation

To evaluate the relationship between L5L and EI, hypothesis one assessed whether L5L positively affects EI within a South African manufacturing context. The present study found that a significant and positive relationship exists between L5L and EI. In Chapter One it was noted that Tim Cook, the current CEO of the world's most innovative company Apple Inc., portrayed strong L5L qualities (Aziz, 2019). The literature review discussed how Bill Gates, Ken Chenault and Brenda Barnes who all displayed the characteristics of level 5 leaders, led highly successful and innovative organisations (Raffo & Williams, 2018). Additionally, humility – a key component of L5L – has been known to enhance organisational outcomes including creativity (Lehmann et al., 2023). These indicators suggested to the researcher that there may be a relationship between L5L and EI, despite studies on leader humility showing mixed outcomes and PW been a largely untested concept. Until now the relationship between L5L and EI has not been tested.

7.2.2. Principal Findings – The Mediating Effects of Employee Voice

The study implied that for organisations to be innovative its employees must be innovative. Enhanced creativity occurs when employees perceive fair treatment and receive support from their leaders (Chen & Hou, 2016). However, by way of promoting a climate of innovation whereby employees are encouraged to propose recommendations or voice their views, leaders can actualise ideas out of creativity (Kremer et al., 2019). Kremer et al. (2019) suggested that if new ideas are unable to

be communicated, it is unlikely that they will be implemented. It is a leader's awareness of these ideas that creates the potential for these to be converted into innovations. Thus, not only are innovative employees required for organisational innovation, but the role of EV in enhancing EI is critical.

To evaluate the effect of EV on the relationship between L5L and EI, the intention of hypothesis four was to determine whether EV mediates the relationship between L5L and EV. The results showed that EV is a significant partial mediator in the relationship between L5L and EI. The outcome is thus uniform with the propositions by Kremer et al. (2019), whereby level 5 leaders through social exchange and building trust with employees can form an environment encouraging employees in speaking up and speaking out. By treating their employees fairly and supporting them, this results in EV which in turn leads to EI.

7.3. Theoretical Contributions

The antecedents and consequences of innovation have received significant consideration in academic studies. As the concept of continuous innovation was recognised as pivotal for the sustained success of a business (Schumpeter, 1934), academic scholars have devoted significant attention to the study of innovation (Ramadani et al., 2019). Even more specifically, EI has gained the interest of researchers for decades as it is a key component of a successful organisation, and that leadership is one of the most critical factors promoting innovation (Grošelj et al., 2021). Thus, over the last decade a vast amount of research has been done on the relationship between leadership and EI (Hughes et al., 2018; Lee et al., 2020).

These investigations have centred on examining the impacts of different leadership styles on innovation (Alblooshi et al., 2021; Hughes et al., 2018). Alblooshi et al. (2021) suggested that transformational leadership, particularly as a driver of EI was well researched and called for more research on styles outside of transformational leadership. The present study thus answers this call, by evaluating the relationship between L5L and EI, which has not been investigated in academic research until now.

Since Collins' (2001a) seminal work, much has been documented about other areas of his work, but very few academic studies exist on L5L (Caldwell et al., 2017; Zhou & Wu, 2018). Collins (2001a) argued that L5L contributes to highly successful organisations, but there have not been many academic studies to confirm or refute this, particularly in relation to more specific organisational outcomes. In a recent study, Sarfraz et al. (2022) identified a positive relationship between L5L and organisational citizenship behaviour, however there is very little known about L5L outside of these studies. By proving that a positive relationship exists between both L5L and EI and L5L and EV, the current study adds to the limited body of research on L5L as both relationships have not been studied up to now.

The relationship between EV and EI has been found to be positive in academic research (Ashiru et al., 2022; Selvaraj & Joseph, 2020; Shin et al., 2022). However, researchers have indicated that EV is affected by macro-factors or national culture values (Kwon & Farndale, 2020). Furthermore, the construct of EV in the developing world is understudied (McKearney et al., 2023). To the researcher's, knowledge no previous studies on the relationship between EV and EI have been done in the South African context.

Another theoretical advancement presented in this study lies in the identification of the significant mediating role played by EV in the association between L5L and EI. Given that the relationship between leadership and EI has yielded inconsistent results (Grošelj et al., 2021; Hughes et al., 2018; Mokhber et al. 2018), there is a need to include more understudied mediating variables to better understand the relationship between the two constructs (Hughes et al., 2018). Hughes et al. (2018) called for future research on leadership styles and EI to include more mediation variables and to particularly break away from over emphasis on motivational process meditators and to focus on more understudied mechanisms. EV is one such mediating variable, which in Hughes et al's (2018) systematic review of leadership, creativity and innovation studies, out of 76 research papers that included mediating variables EV was not considered once. While subsequent studies on paternalistic leadership and EI (Nazir et al., 2021) and ethical leadership and EI (Jin et al., 2022; Ullah et al., 2020) have considered EV as a mediating mechanism, EV has until now not been considered in the relationship between L5L and EI.

Finally, the study adds to the collective understanding of SET. Through SET (Homans, 1958), level 5 leaders – by way of their behaviour and actions – engender the trust and commitment of their employees (Caldwell et al., 2017; Sarfraz et al., 2022). Level 5 leaders act with humility, are genuine, prioritise the team and organisation, do not seek the spotlight, are dedicated to the organisation, have an unwavering determination, are catalysts in achieving results and have a strong work ethic (Reid et al., 2014). With these traits they cultivate an environment where employees are committed to engaging in extra role behaviour (Sarfraz et al., 2022), and are free to be more innovative and take risks. Employees voice concerns and give feedback and this in turns lead to higher EI. No previous study has assessed the relationship between L5L, EI and EV through the lens of social exchange.

In summary, the present study extends the body of existing literature as follows. Firstly, it adds to leadership, EI and EV studies by looking at the relationships between L5L and EI and L5L and EV, both which have not been studied until now. Secondly it contributes to providing greater insight on L5L, which remains an understudied construct since its introduction by Collins (2001a). Thirdly, the relationship between EV and EI has previously not been measured in the South African manufacturing context. Fourthly, given the inconsistency of past results on the relationship between leadership styles and EV researchers have called for the inclusion of more understudied mediating factors. Additionally, the mediating effect of EV on the relationship between L5L and EI has not been studied previously. Finally, the study adds to the collective understanding of SET.

7.4. Practical Implications

The present study aimed to develop a model to enhance EI in organisational settings. Organisations, as complex adaptive systems, must cultivate the ability to promptly address new challenges or circumstances in the current competitive and everchanging business setting (Amankwaa et al., 2019). This complex, changing and uncertain business environment requires leaders to become more adaptable (Uhl-Bien & Arena, 2018). The present study argues that to enhance adaptability and capacity building, management and human resource practitioners should promote EI by aligning with the characteristics associated with L5L. This is particularly important given an organisational need for more people orientated and collaborative leadership

styles (Aziz, 2019), particularly in a knowledge-based economy where reliance on people is enhanced (Iqbal et al., 2020). Managers can uphold L5L by showing humility, demonstrating a strong determination to organisational outcomes, encouraging teamwork, assisting and motivating their followers, and being open to criticism and recommendations for improvement of the organisation (Sarfraz et al., 2022). This constructive and supportive leadership behaviour motivates employees to put in extra effort and thus speak up and innovate.

It is also recommended that the leadership in organisations partake in development platforms and programmes that focus on L5L traits. As discussed in Chapter One, individuals have the potential to be developed into level 5 leaders (Collins, 2001a) and humility can be enhanced through coaching and development (Aziz, 2019; Maldonado et al., 2022). Organisations with innovative ambition can thus prioritise developing and recruiting individuals with L5L traits. Collins (2001a) highlighted the tendency of organisations to choose highly charismatic leaders over level 5 leaders, which can be to the organisations detriment. With an empirically tested tool, a focus on L5L is further justifiable.

The findings of the study exhibited that L5L accelerates EV which in turn fosters employees to be innovative. Thus, not only should leaders and organisations groom L5L traits, but business leaders should provide a work environment in which employees are encouraged to speak up (Jin et al., 2022). This environment should encourage reducing an employee's sense of harm, and foster confidence in engaging in voice behaviour without fear of negative consequences. Leaders can increase EV by showing an openness to receive information, sharing information with employees and developing an open communication network to encourage EV (Ullah et al., 2020).

It is also recommended that leaders and organisations use performance management systems, not only to improve on human capital, but to promote voice (Kremer et al., 2019). Based on social exchange, organisation rewards are important in developing trust and innovative leaders can use open communication and feedback at all levels to promote voice. The way that leaders structure and design their teams can also promote EV and level 5 leaders should consider team dynamics

when designing their teams (Kremer et al., 2019). These proposals on EV can enhance innovation, organisational growth, sustainability and survival.

7.5. Limitations of the Research

While the study contributes new theoretical insights and business recommendations, like all research it was done with certain limitations. Firstly, the data for the dependent variables were obtained using self-rated data from employees of manufacturing companies in SA, which raises the risk of same source bias (Podsakoff et al., 2003). Although the tests for CMB indicated no concerns in this study, future research should consider using leader ratings for EI or having time lags between the data collection for the independent and dependent variables (Podsakoff et al., 2003).

Secondly, the study opted for a cross-sectional time horizon, capturing data at a specific moment. This choice precludes the ability to draw conclusions from diverse time periods since the results are confined to a singular temporal context. Research conducted over extended durations might reveal diverse outcomes.

Finally, although the sample covered a vast range of manufacturing sub-sectors, the study did not test for unobserved heterogeneity, which could lead to incorrect conclusions if a heterogeneous sample were estimated at an aggregated level (Sarstedt et al., 2022). Future studies should consider testing for heterogeneity of the sample.

7.6. Recommendations for Future Research

The study aimed to understand the relationship between L5L and EI, including the mediating effects of EV on this relationship. However, as observed, the interaction among the numerous factors influencing EI is intricate and multifaceted. The study considered only one mediator in the L5L and EI linkage. Future studies can include more understudied mediating mechanisms such as commitment, knowledge sharing and the feeling of energy. Future studies can also investigate the varying mediators relative to the different phases of innovation, namely idea generation, idea promotion and idea implementation (Janssen, 2000; Ullah et al., 2020).

There is limited understanding regarding the contextual boundary conditions and psychological mechanisms that could be moderating factors that influence the connection between leadership and EI (Grošelj et al., 2021). Varying results and correlations between leadership styles and EI suggest that these relationships depend on other variables (Mokhber et al., 2018). Although the present study did not consider the moderating effects of variables on the relationship between L5L and EI, it is suggested that future studies include moderators in the broader context such as the industrial context (Hughes et al., 2018).

This research evaluated the mediating variables of a unitary facet of voice behaviour, which focuses on the behaviour of EV as opposed to organisational voice practices. It is hence recommended that future studies observe the relationship between L5L, EI and promotive and prohibitive organisational voice practices as individual constructs (Shin et al., 2022). With the complexity of each construct, assessment at this level may allow for more in-depth understanding of the relationships.

Finally Reid at al. (2014) highlighted potential negatives influences of L5L traits. Future studies can focus on these aspects to provide a holistic empirical analysis in understanding the construct of L5L.

7.7. Closing Comments

At the onset of this study the importance of innovation and specifically EI in supporting organisations to obtain a competitive advantage in a VUCA based business setting was discussed. The research problem was identified in this context as manufacturing organisations in SA need to recognise the significance of innovation, otherwise they are at risk of being uncompetitive on a global scale adversely impact economic growth, job creation and poverty.

This study therefore aimed to develop a tool to predict EI in the South African manufacturing setting. The concept L5L introduced close to 25 years ago, can support successful companies in both turbulent and steady times. Although Collins (2001a) stated that L5L is an empirical finding and not an ideological concept, very little empirical evidence exists on the consequences of L5L. The construct was

therefore identified as a suitable potential predictor of EI, particularly with real life examples of level 5 leaders such as Apples Inc's Tim Cook.

The findings of the study were in alignment to the overall research problem, objectives and hypotheses developed from the identified gaps in the literature review. Using PLS-SEM, L5L was found to be a predictor of EI and EV was established as a mechanism that mediates this relationship. These results support the seminal work of Jim Collins on L5L and show that manufacturing and other organisations with high innovation aspirations should support the development of level 5 leaders.

References

Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-practice recommendations for defining, identifying, and handling outliers. Organizational Research Methods, 16(2), 270–301. https://doi.org/10.1177/1094428112470848

Aiginger, K., & Rodrik, D. (2020). Rebirth of industrial policy and an agenda for the twenty-first century. *Journal of Industry, Competition and Trade*, *20*, 189–207. https://doi.org/10.1007/s10842-019-00322-3

Alblooshi, M., Shamsuzzaman, M., & Haridy, S. (2021). The relationship between leadership styles and organisational innovation: A systematic literature review and narrative synthesis. *European Journal of Innovation Management*, *24*(2), 338–370. https://doi.org/10.1108/EJIM-11-2019-0339

Alvesson, M., & Einola, K. (2019). Warning for excessive positivity: Authentic leadership and other traps in leadership studies. *The Leadership Quarterly*, *30*(4), 383–395. https://doi.org/10.1016/j.leaqua.2019.04.001

Amabile, T. M., & Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in Organizational Behavior*, *36*, 157–183. https://doi.org/10.1016/j.riob.2016.10.001

Amankwaa, A., Gyensare, M. A., & Susomrith, P. (2019). Transformational leadership with innovative behaviour: Examining multiple mediating paths with PLS-SEM. *Leadership & Organization Development Journal*, *40*(4), 402–420. https://doi.org/10.1108/LODJ-10-2018-0358

Aminu, I. M., & Shariff, M. N. M. (2014). Strategic orientation, access to finance, business environment and SMEs performance in Nigeria: Data screening and preliminary analysis. *European Journal of Business and Management*, *6*(35), 124–132.

Anderson, J.C. and Gerbing, D.W. (1988). Structural equation modelling in practice: a review and recommended two-step approach. *Psychological Bulletin*, *103* (3), 411–423.

Andreoni, A., Mondliwa, P., Roberts, S., & Tregenna, F. (2021). *Structural transformation in South Africa: The challenges of inclusive industrial development in a middle-income country*. Oxford University Press.

Arranz, N., Arroyabe, M. F., Li, J., & de Arroyabe, J. F. (2019). An integrated model of organisational innovation and firm performance: Generation, persistence and complementarity. *Journal of Business Research, 105*, 270–282. https://doi.org/10.1016/j.jbusres.2019.08.018

Ashiru, J. A., Erdil, G. E., & Oluwajana, D. (2022). The linkage between high performance work systems on organizational performance, employee voice and employee innovation. *Journal of Organizational Change Management*, *35*(1), 1–17. https://doi.org/10.1108/JOCM-02-2021-0039

Audretsch, D. B., Belitski, M., & Guerrero, M. (2022). The dynamic contribution of innovation ecosystems to schumpeterian firms: A multi-level analysis. *Journal of Business Research*, *144*, 975-986. https://doi.org/10.1016/j.jbusres.2022.02.037

Aziz, K. (2019). Why is humility so relevant for leaders and can it be developed through coaching? *Strategic HR Review, 18(*1), 30–33. https://doi.org/10.1108/SHR-10-2018-0088

Bäckström, I., & Bengtsson, L. (2019). A mapping study of employee innovation: proposing a research agenda. *European Journal of Innovation Management, 22*(3), 468–492. https://doi.org/10.1108/EJIM-05-2018-0101

Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, *36*(3) 421–458.

Bakker, M., & Wicherts, J. M. (2014). Outlier removal, sum scores, and the inflation of the type I error rate in independent samples t-tests: The power of alternatives and recommendations. *Psychological Methods, 19*(3), 409–427. https://doi.org/10.1037/met0000014

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173.

Barry, M., & Wilkinson, A. (2022). Employee voice, psychologisation and human resource management (HRM). *Human Resource Management Journal*, *32*(3), 631–646. https://doi.org/10.1111/1748-8583.12415

Basco, R., Hair Jr, J. F., Ringle, C. M., & Sarstedt, M. (2022). Advancing family business research through modeling nonlinear relationships: Comparing PLS-SEM and multiple regression. *Journal of Family Business Strategy*, *13*(3), 100457. https://doi.org/10.1016/j.jfbs.2021.100457

Bass, B.M. (1985). *Leadership and Performance beyond Expectations*. Free Press.

Becker, J. M., Cheah, J. H., Gholamzade, R., Ringle, C. M., & Sarstedt, M. (2023). PLS-SEM's most wanted guidance. *International Journal of Contemporary Hospitality Management, 35*(1), 321-346. https://doi.org/10.1108/IJCHM-04-2022-0474

Bharanitharan, K., Chen, Z. X., Bahmannia, S., & Lowe, K. B. (2019). Is leader humility a friend or foe, or both? An attachment theory lens on leader humility and its contradictory outcomes. *Journal of Business Ethics*, *160*, 729–743. https://doi.org/10.1007/s10551-018-3925-z

Bollen, K. A., & Ting, K. F. (2000). A tetrad test for causal indicators. Psychological methods, 5(1), 3. https://doi.org/10.1037/1082-989X.5.1.3

Boomsma, A., & Hoogland, J. J. (2001). The robustness of lisrel modelling revisited. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation modeling: Present and future* (pp. 139–168). Scientific Software International.

Borg, W. R., & Gall, M. D. (1979). *Educational research: An introduction* (3rd ed.). Longman Publishing.

Boston Consulting Group. (2023). *Most innovative companies 2023.* https://web-assets.bcg.com/ce/fd/d7fa78e547a09d2eef5086fbbf79/bcg-most-innovative-companies-2023-reaching-new-heights-in-uncertain-times-may-2023.pdf

Burns, J. (1978). *Leadership*. Harper & Row.

Byrne B. M. & Van de Vijver, F. J. R. (2010). Testing for measurement and structural equivalence in largescale cross-cultural studies: Addressing the issue of non-equivalence. *International Journal of Testing, 10*(2):107–132. https://doi.org/10.1080/15305051003637306

Caldwell, C., Ichiho, R., & Anderson, V. (2017). Understanding level 5 leaders: the ethical perspectives of leadership humility. *Journal of Management Development*, *36*(5), 724–732. https://doi.org/10.1108/JMD-09-2016-0184

Caniëls, M. C., & Veld, M. (2019). Employee ambidexterity, high performance work systems and innovative work behaviour: How much balance do we need? *The International Journal of Human Resource Management*, *30*(4), 565–585. https://doi.org/10.1080/09585192.2016.1216881

Carnevale, J. B., Huang, L., Crede, M., Harms, P., & Uhl-Bien, M. (2017). Leading to stimulate employees' ideas: A quantitative review of leader–member exchange, employee voice, creativity, and innovative behavior. *Applied Psychology, 66*(4), 517–552. https://doi.org/10.1111/apps.12102

Chamberlin, M., Newton, D. W., & Lepine, J. A. (2017). A meta-analysis of voice and its promotive and prohibitive forms: Identification of key associations, distinctions, and future research directions. *Personnel Psychology*, *70*(1), 11–71. https://doi.org /10.1111/peps.12185

Chen, A. S. Y., & Hou, Y. H. (2016). The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination. *The Leadership Quarterly, 27*(1), 1–13. https://doi.org/10.1016/j.leaqua.2015.10.007

Chen, S. J., Wang, M. J., & Lee, S. H. (2018). Transformational leadership and voice behaviors: The mediating effect of employee perceived meaningful work. *Personnel Review*, *47*(3), 694–708. https://doi.org/10.1108/PR-01-2017-0016

Chikán, A., Czakó, E., Kiss-Dobronyi, B., & Losonci, D. (2022). Firm competitiveness: A general model and a manufacturing application. *International Journal of Production Economics*, *243*, 108316. https://doi.org/10.1016/j.ijpe.2021.108316

Chin, W. W. (1998). The partial least squares approach to structural equation modelling. *Modern Methods for Business Research, 295*(2), 295–336.

Chin, W. W. (2009). How to write up and report PLS analyses. In *Handbook of partial least squares: Concepts, methods and applications* (pp. 655–690). Springer.

Chou, S. Y., & Barron, K. (2016). Employee voice behavior revisited: its forms and antecedents. *Management Research Review*, *39*(12), 1720–1737. https://doi.org/10.1108/MRR-09-2015-0199

Churchill Jr., G. A., & Lacobucci, D. (2004). *Marketing Research - methodological foundations* (9th ed.). Thomson.

Clark, C. M., & Harrison, C. (2018). Leadership: the complexities and state of the field. *European Business Review, 30*(5), 514–528. https://doi.org/10.1108/EBR-07-2017-0139

Coetzer, A., Inma, C., Poisat, P., Redmond, J., & Standing, C. (2018). Job embeddedness and employee enactment of innovation-related work behaviours. *International Journal of Manpower*, *39*(2), 222–239. https://doi.org/10.1108/IJM-04-2016-0095

Cohen, J. (1988) Statistical power analysis for the behavioral sciences (2nd ed.). Erlbaum

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). Routledge.

Cole, D. A., & Preacher, K. J. (2014). Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods, 19*(2), 300–315. https://doi.org/10.1037/a0033805

Collins, J. (2001a). *Good to Great: Why Some Companies Make the Leap… And Others Do not.* Random House Business.

Collins, J. (2001b). Level 5 leadership: The triumph of humility and fierce resolve. *Harvard Business Review. 79*(1),66–76.

Creswell, J. W., & Clark, V. L. P. (2011). *Designing and conducting mixed methods research*. Sage Publications.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage publications.

Daveri, F., & Parisi, M. L. (2015). Experience, innovation, and productivity: empirical evidence from Italy's slowdown. *Industrial and Labour Relations Review*, *68*(4), 889–915.

Department of Science and Innovation. (2020). *Strategic plan 2020–2025.* https://www.dst.gov.za/images/2020/DST_2020_2025_STRAT_PLAN_FINAL_JULY.pdf

Delmas, M. A., & Pekovic, S. (2018). Corporate sustainable innovation and employee behavior. *Journal of Business Ethics*, *150*, 1071–1088. https://doi.org/10.1007/s10551-016-3163-1

Do, H., Budhwar, P. S., & Patel, C. (2018). Relationship between innovation-led HR policy, strategy, and firm performance: A serial mediation investigation. *Human Resource Management*, *57*(5), 1271–1284. https://doi.org/10.1002/hrm.21903

Dziallas, M., & Blind, K. (2019). Innovation indicators throughout the innovation process: An extensive literature analysis. *Technovation, 80*, 3-29. https://doi.org/10.1016/j.technovation.2018.05.005

Edwards-Schachter, M. (2018). The nature and variety of innovation. *International Journal of Innovation Studies*, *2*(2), 65–79. https://doi.org/10.1016/j.ijis.2018.08.004

Efron, B. (1987). Better bootstrap confidence intervals. J*ournal of the American Statistical Association, 82,* 171–185.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.

Fazlıoğlu, B., Dalgıç, B., & Yereli, A. B. (2019). The effect of innovation on productivity: evidence from Turkish manufacturing firms. *Industry and Innovation, 26*(4), 439–460. https://doi.org/10.1080/13662716.2018.1440196

Felin, T., Foss, N. J., & Ployhart, R. E. (2015). The microfoundations movement in strategy and organization theory. *Academy of Management Annals*, *9*(1), 575–632. http://doi.org/10.1080/19416520.2015.1007651

Ferreira, J., Coelho, A., & Moutinho, L. (2020). Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm

performance: The moderating role of entrepreneurial orientation. *Technovation, 92*, 102061. https://doi.org/10.1016/j.technovation.2018.11.004

Fornell, C. G. (1982). A second generation of multivariate analysis: An overview. In C. Fornell (Ed.), *A second generation of multivariate analysis* (pp. 1–21). Praeger.

Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, *19*(4), 440–452.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: a comparison of four procedures. *Internet Research, 29*(3), 430–447. https://doi.org/10.1108/IntR-12-2017-0515

Gardner, W. L., Lowe, K. B., Meuser, J. D., Noghani, F., Gullifor, D. P., & Cogliser, C. C. (2020). The leadership trilogy: A review of the third decade of the leadership quarterly. *Leadership Quarterly*, *31*(1), 101379. https://doi.org/10.1016/j.leaqua.2019.101379

Garson, G.D. (2016). *Partial Least Squares Regression and Structural Equation Models*. Statistical Associates.

Goodhue, D. L., Lewis, W., & Thompson, R. (2012). Does PLS have advantages for small sample size or non-normal data? *MIS Quarterly, 36*(3), 981–1001.

Gorard, S. (2003). *Quantitative Methods in Social Science Research* (1st ed.). Continuum Books.

Granstrand, O., & Holgersson, M. (2020). Innovation ecosystems: A conceptual review and a new definition. *Technovation, 90*, 102098. https://doi.org/10.1016/j.technovation.2019.102098

Green, T. L. (2017). From positivism to critical theory: School-community relations toward community equity literacy. *International Journal of Qualitative Studies*

in Education, *30*(4), 370–387. https://doi.org/10.1080/09518398.2016.1253892

Grošelj, M., Černe, M., Penger, S., & Grah, B. (2021). Authentic and transformational leadership and innovative work behaviour: the moderating role of psychological empowerment. *European Journal of Innovation Management, 24*(3), 677–706. https://doi.org/10.1108/EJIM-10-2019-0294

Guzman, F. A., & Espejo, A. (2019). Introducing changes at work: How voice behavior relates to management innovation. *Journal of Organizational Behavior*, *40*(1), 73–90. https://doi.org/10.1002/job.2319

Hackett, R. D., Wang, A. C., Chen, Z., Cheng, B. S., & Farh, J. L. (2018). Transformational leadership and organisational citizenship behaviour: A moderated mediation model of leader-member-exchange and subordinates' gender. *Applied Psychology*, *67*(4), 617–644. https://doi.org/10.1111/apps.12146

Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding Statistics, 3*(4), 283–297. https://doi.org/10.1207/s15328031us0304_4

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Pearson Education Limited.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equations modelling*. Sage.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, P., & Soumya, R. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM) using R* (3rd Ed.). Springer.

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hair, J. F., Jr. (2020). Next-generation prediction metrics for composite-based PLS-SEM. *Industrial Management & Data Systems, 121*(1), 5–11. https://doi.org/10.1108/IMDS-08-2020-0505

Hair, J. F., Jr., Risher, J. J., Sarstedt, M. & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. http://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. http://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning, 46*(1-2), 1-12. https://doi.org/10.1016/j.lrp.2013.01.001

Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing*, *53*(4), 566–584. https://doi.org/10.1108/EJM-10-2018-0665

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science, 40*(3), 414–433. https://doi.org/10.1007/s11747-011-0261-6

Hair, J. F., Hollingsworth, C. L., Randolph, A. B. and Chong, A. Y. I. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management and Data Systems, 111*(3), 442–458. https://doi.org/10.1108/IMDS-04-2016-0130

Haraguchi, N., Cheng, C. F. C., & Smeets, E. (2017). The importance of manufacturing in economic development: has this changed? *World Development*, *93*, 293–315. https://doi.org/10.1016/j.worlddev.2016.12.013

Hassi, A. (2019). “You get what you appreciate” Effects of leadership on job satisfaction, affective commitment and organisational citizenship behaviour. I*nternational Journal of Organizational Analysis, 27*(3), 786-811. https://doi.org/10.1108/IJOA-08-2018-1506

Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process Analysis: A regression-based approach*. Guildford Press.

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., & Straub, D. W. (2014). Common beliefs and reality about partial least squares: Comments on Ronkko & Evermann (2013). *Organizational Research Methods, 17,* 182–209. https://doi.org/10.1177/1094428114526928

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Heredia, A., Colomo-Palacios, R., & Soto-Acosta, P. (2017). Tool-supported continuous business process innovation: a case study in globally distributed software teams. *European Journal of International Management*, *11*(4), 388–406. https://doi.org/10.1504/EJIM.2017.085580

Hirschman, A. (1970). *Exit, voice and loyalty: Responses to decline in firms, organizations and states*. Harvard University Press.

Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *Journal of Management*, *44*(2), 501–529. https://doi.org/10.1177/0149206316665461

Holden, M. T., & Lynch, P. (2004). Choosing the appropriate methodology: Understanding research philosophy. *The marketing review*, *4*(4), 397–409. https://doi.org/10.1362/1469347042772428

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, *63*(6), 597–606. https://doi.org/10.1086/222355

Hu, L.-t., and Bentler, P. M. (1998). Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification, *Psychological Methods, 3*(4), 424–453.

Hughes, D. J., Lee, A., Tian, A. W., Newman, A., & Legood, A. (2018). Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly*, *29*(5), 549-569. https://doi.org/10.1016/j.leaqua.2018.03.001

Hult, G. T. M., Hair Jr, J. F., Proksch, D., Sarstedt, M., Pinkwart, A., & Ringle, C. M. (2018). Addressing endogeneity in international marketing applications of partial least squares structural equation modeling. *Journal of International Marketing*, *26*(3), 1–21. https://doi.org/10.1509/jim.17.0151

Isaacson, W. (2011). *Steve Jobs.* Simon & Schuster

Iqbal, A., Latif, K. F., & Ahmad, M. S. (2020). Servant leadership and employee innovative behaviour: exploring psychological pathways. *Leadership & Organization Development Journal*, *41*(6), 813–827. https://doi.org/10.1108/LODJ-11-2019-0474

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, *73*(3), 287–302. https://doi.org/10.1348/096317900167038

Jiang, Y., & Chen, C. C. (2018). Integrating knowledge activities for team innovation: Effects of transformational leadership. *Journal of Management, 44*, 1819–1847. https://doi.org/10.1177/0149206316628641

Jin, X., Qing, C., & Jin, S. (2022). Ethical leadership and innovative behavior: Mediating role of voice behavior and moderated mediation role of psychological safety. *Sustainability*, *14*(9), 5125. https://doi.org/10.3390/su14095125

Kahn, A., Sithole, M., & Buchana, Y. (2022). An analysis of the impact of technological innovation on productivity in South African manufacturing firms using direct measures of innovation. *South African Journal of Economics, 90*(1), 37–56. https://doi.org/10.1111/saje.12310

Kamdar, D., & Van Dyne, L. (2007). The joint effects of personality and workplace social exchange relationships in predicting task performance and citizenship performance. *Journal of Applied Psychology, 92*, 1286–1298. https://doi.org/10.1037/0021-9010.92.5.1286

Karatepe, O. M., Ozturk, A., & Kim, T. T. (2019). Servant leadership, organisational trust, and bank employee outcomes. *The Service Industries Journal*, *39*(2), 86–108. https://doi.org/10.1080/02642069.2018.1464559

Kark, R., Van Dijk, D., & Vashdi, D. R. (2018). Motivated or demotivated to be creative: The role of self-regulatory focus in transformational and transactional leadership processes. *Applied Psychology*, *67*(1), 186–224. https://doi.org/10.1111/apps.12122

Kelemen, T. K., Matthews, S. H., Matthews, M. J., & Henry, S. E. (2023). Humble leadership: A review and synthesis of leader expressed humility. *Journal of Organizational Behavior*, *44*(2), 202–224. https://doi.org/10.1002/job.2608

Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal,* *37*(6), 694–707. https://doi.org/10.1016/j.emj.2019.03.003

Kline, R. B. (2005). Principles and practices of structural equation modelling (2nd ed.). Guilford Press.

Kline, R. B. (2011). Methodology in the social sciences: Principles and practice of structural equation modelling (3rd ed.). Guilford Press.

Kock N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration, 11*(4), 1–10. https://doi.org/10.4018/ijec.2015100101

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal, 28*(1), 227–261. https://doi.org/10.1111/isj.12131

Koh, D., Lee, K., & Joshi, K. (2019). Transformational leadership and creativity: A meta-analytic review and identification of an integrated model. *Journal of Organizational Behavior*, *40*(6), 625–650. https://doi.org/10.1002/job.2355

Kong, D., Zhang, B., & Zhang, J. (2022). Higher education and corporate innovation. *Journal of Corporate Finance*, *72*, 102165. https://doi.org/10.1016/j.jcorpfin.2022.102165

Kothari, C. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.

Kremer, H., Villamor, I., & Aguinis, H. (2019). Innovation leadership: Best-practice recommendations for promoting employee creativity, voice, and knowledge

sharing. *Business Horizons, 62*(1), 65–74. https://doi.org/10.1016/j.bushor.2018.08.010

Kreuser, C. F., & Newman, C. (2018). Total factor productivity in South African manufacturing firms. *South African Journal of Economics, 86*, 40–78. https://doi.org/10.1111/saje.12179

Kruse, H., Mensah, E., Sen, K., & de Vries, G. (2023). A manufacturing (re) naissance? Industrialization in the developing world. *IMF Economic Review, 71*(2), 439–473. https://doi.org/10.1057/s41308-022-00183-7

Kumar, R. (2018a). *Research methodology: A step-by-step guide for beginners* (3rd ed.). Sage.

Kumar, S. (2018b). Understanding Different Issues of Unit of Analysis in a Business Research. *Journal of General Management Research*, *5*(2), 70–82.

Kwon, B., & Farndale, E. (2020). Employee voice viewed through a cross-cultural lens. *Human Resource Management Review*, *30*(1), 100653. https://doi.org/10.1016/j.hrmr.2018.06.002

Kwon, K., & Kim, T. (2020). An integrative literature review of employee engagement and innovative behavior: Revisiting the JD-R model. *Human Resource Management Review, 30*(2), 100704. https://doi.org/10.1016/j.hrmr.2019.100704

Lagerstedt, E. (2018, December 9). 50 companies that failed to innovate [Blog post]. Elisabetlagerstedt. https://elisabetlagerstedt.com/2018/12/09/50-examples-of-companies-that-failed-to-innovate/

Lambert, L. S., & Newman, D. A. (2023). Construct development and validation in three practical steps: Recommendations for reviewers, editors, and authors. *Organizational Research Methods, 26*(4), 574-607. https://doi.org/10.1177/10944281221115374

Lapointe, E., & Vandenberghe, C. (2018). Examination of the relationships between servant leadership, organizational commitment, and voice and antisocial behaviors. *Journal of Business Ethics*, *148*, 99–115. https://doi.org/10.1007/s10551-015-3002-9

Larsen, J. (2020). *Can Africa's third industrial development decade deliver?* https://www.unido.org/stories/can-africas-third-industrial-development-decade-deliver

Lazzarotti, V., Manzini, R., & Mauri, F. (2018). Balancing actions for radical and incremental innovations in SAES Getters. *International Journal of Business Innovation and Research*, *15*(4), 452–466. https://doi.org/10.1504/IJBIR.2018.090461

Lee, R., Lee, J. H., & Garrett, T. C. (2019). Synergy effects of innovation on firm performance. *Journal of Business Research*, *99*, 507–515. https://doi.org/10.1016/j.jbusres.2017.08.032

Lee, A., Legood, A., Hughes, D., Tian, A. W., Newman, A., & Knight, C. (2020). Leadership, creativity and innovation: A meta-analytic review. *European Journal of Work and Organizational Psychology*, *29*(1), 1-–5. https://doi.org/10.1080/1359432X.2019.1661837

Lee, J., Wang, G., & Piccolo, R. F. (2018). Jekyll and Hyde leadership: A multilevel, multisample examination of charisma and abuse on follower and team outcomes. *Journal of Leadership & Organizational Studies*, *25*(4), 399–415. https://doi.org/10.1177/1548051818757692

Lehmann, M., Pery, S., Kluger, A. N., Hekman, D. R., Owens, B. P., & Malloy, T. E. (2023). Relationship-specific (dyadic) humility: How your humility predicts my psychological safety and performance. *Journal of Applied Psychology*, *108*(5), 809. https://doi.org/10.1037/apl0001059

Leys, C., Delacre, M., Mora, Y. L., Lakens, D., & Ley, C. (2019). How to classify, detect, and manage univariate and multivariate outliers, with emphasis on pre-registration. *International Review of Social Psychology*, *32*(1). https://doi.org/10.5334/irsp.289

Leys, C., Klein, O., Dominicy, Y., & Ley, C. (2018). Detecting multivariate outliers: Use a robust variant of the Mahalanobis distance. *Journal of Experimental Social Psychology*, *74*, 150–156. https://doi.org/10.1016/j.jesp.2017.09.011

Li, Y. (2021). Apple Inc. Analysis and Forecast Evaluation. *Proceedings of Business and Economic Studies, 4*(4), 71-78. https://doi.org/10.26689/pbes.v4i4.2389

Li, Z., Zhang, M. Y., & Zhang, H. (2021). Firm Growth Performance and Relative Innovation Orientation of Exploration vs Exploitation: Moderating Effects of Cluster Relationships. *Management and Organization Review*, *17*(1), 143–172. https://doi.org/10.1017/mor.2020.35

Liang, J., Farh, C. I., & Farh, J. L. (2012). Psychological antecedents of promotive and prohibitive voice: A two-wave examination. *Academy of Management journal, 55*(1), 71-92. https://doi.org/10.5465/amj.2010.0176

Lien, L., & Timmermans, B. (2023). Crisis-induced innovation and crisis-induced innovators. *Industry and Innovation, 31*(2), 183-217. https://doi.org/10.1080/13662716.2023.2228739

Lin, W., Ma, J., Zhang, Q., Li, J. C., & Jiang, F. (2018). How is benevolent leadership linked to employee creativity? The mediating role of leader–member exchange and the moderating role of power distance orientation. *Journal of Business Ethics*, *152*, 1099–1115. https://doi.org/10.1007/s10551-016-3314-4

Lin, X., Chen, Z. X., Tse, H. H., Wei, W., & Ma, C. (2019). Why and when employees like to speak up more under humble leaders? The roles of personal sense of power and power distance. *Journal of Business Ethics*, *158*, 937–950. https://doi.org/10.1007/s10551-017-3704-2

Liu, L., & An, S. (2023). Deindustrialization and the incidence of poverty: Empirical evidence from developing countries. *Technological Forecasting and Social Change*, *187*, 122202. https://doi.org/10.1016/j.techfore.2022.122202

Lord, R. G., Day, D. V., Zaccaro, S. J., Avolio, B. J., & Eagly, A. H. (2017). Leadership in applied psychology: Three waves of theory and research. *Journal of Applied Psychology*, *102*(3), 434. http://dx.doi.org/10.1037/apl0000089

Lukes, M., & Stephan, U. (2017). Measuring employee innovation: A review of existing scales and the development of the innovative behavior and innovation support inventories across cultures. *International Journal of Entrepreneurial Behavior & Research*, *23*(1), 136–158. https://doi.org/10.1108/IJEBR-11-2015-0262

Luo, Y., Huang, L., Wen, J., Ma, J., & Xi, J. (2019). On the relationships of resilience with organizational commitment and burnout: a social exchange

perspective. *The International Journal of Human Resource Management*, *30*(15), 2231–2250. https://doi.org/10.1080/09585192.2017.1381136

MacKinnon, D.P., Lockwood, C.M. and Williams, J. (2004). Confidence limits for the indirect effect: distribution of the product and resampling methods. *Multivariate Behavioural Research, 39*(1), 99–128. https://doi.org/10.1207/s15327906mbr3901_4

Magno, F., Cassia, F., & Ringle, C. M. (2022). A brief review of partial least squares structural equation modeling (PLS-SEM) use in quality management studies. *The TQM Journal*, (ahead-of-print). https://doi.org/10.1108/TQM-06-2022-0197

Maldonado, T., Vera, D., & Spangler, W. D. (2022). Unpacking humility: Leader humility, leader personality, and why they matter. *Business Horizons, 65*(2), 125–137. https://doi.org/10.1016/j.bushor.2021.02.032

Marcoulides, G. A., & Saunders, C. (2006). PLS: A silver bullet? *MIS Quarterly, 30*(2), iii–ix. https://doi.org/10.2307/25148727

Mascareño, J., Rietzschel, E. F., & Wisse, B. (2021). Ambidextrous leadership: opening and closing leader behaviours to facilitate idea generation, idea promotion and idea realization. *European Journal of Work and Organizational Psychology, 30*(4), 530–540. https://doi.org/10.1080/1359432X.2021.1872544

McKearney, A., Prouska, R., Tungtakanpoung, M., & Opute, J. (2023). The influence of national culture on employee voice in small and medium enterprises: a cross-cultural perspective. *Employee Relations: The International Journal*, *45*(2), 478–494. https://doi.org/10.1108/ER-04-2022-0187

Meng, H., Luo, Y., Huang, L., Wen, J., Ma, J., & Xi, J. (2019). On the relationships of resilience with organizational commitment and burnout: a social exchange perspective. *The International Journal of Human Resource Management, 30*(15), 2231-2250. https://doi.org/10.1080/09585192.2017.1381136

Miao, C., Humphrey, R. H., & Qian, S. (2018). A cross-cultural meta-analysis of how leader emotional intelligence influences subordinate task performance and

organizational citizenship behavior. *Journal of World Business, 53*(4), 463-474. https://doi.org/10.1016/j.jwb.2018.01.003

Miao, Q., Newman, A., & Lamb, P. (2012). Transformational leadership and the work outcomes of Chinese migrant workers: The mediating effects of identification with leader. *Leadership, 8*(4), 377–395. https://doi.org/10.1177/1742715012444055

Mokhber, M., Khairuzzaman, W., & Vakilbashi, A. (2018). Leadership and innovation: The moderator role of organization support for innovative behaviors. *Journal of Management & Organization*, *24*(1), 108–128. https://doi.org/10.1017/jmo.2017.26

Morgan, D. L. (2013). *Integrating qualitative and quantitative methods: A pragmatic approach*. Sage publications.

Morgan, S., & Govender, K. (2017). Exploring customer loyalty in the South African mobile telecommunications sector. *Cogent Business & Management*, *4*(1), 1273816. http://dx.doi.org/10.1080/23311975.2016.1273816

Mouton, J. (2001). *How to succeed in your master's and doctoral studies: A South African guide and resource book.* Van Schaik Publishers.

Mowbray, P. K., Wilkinson, A., & Tse, H. H. (2015). An integrative review of employee voice: Identifying a common conceptualization and research agenda. *International Journal of Management Reviews*, *17*(3), 382–400. https://doi.org/10.1111/ijmr.12045

Muijs, D. (2004). *Doing Quantitative Research in Education with IBM SPSS Statistics* (1st ed.). Sage Publications.

Naqshbandi, M. M., Tabche, I., & Choudhary, N. (2019). Managing open innovation: The roles of empowering leadership and employee involvement climate. *Management Decision, 57*(3), 703-723. https://doi.org/10.1108/MD-07-2017-0660

Nazir, S., Shafi, A., Asadullah, M. A., Qun, W., & Khadim, S. (2021). Linking paternalistic leadership to follower's innovative work behavior: the influence of leader–member exchange and employee voice. *European Journal of*

Innovation Management, *24*(4), 1354–1378. https://doi.org/10.1108/EJIM-01-2020-0005

Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods*, *17*(4), 372–411. https://doi.org/10.1177/1094428114548590

Newman, A., Herman, H. M., Schwarz, G., & Nielsen, I. (2018). The effects of employees' creative self-efficacy on innovative behavior: The role of entrepreneurial leadership. *Journal of Business Research*, *89*, 1–9. https://doi.org/10.1016/j.jbusres.2018.04.001

Newman, A., Neesham, C., Manville, G., & Tse, H. H. (2018). Examining the influence of servant and entrepreneurial leadership on the work outcomes of employees in social enterprises. *The International Journal of Human Resource Management*, *29*(20), 2905–2926. https://doi.org/10.1080/09585192.2017.1359792

Ng, T. W., & Feldman, D. C. (2013). Age and innovation-related behavior: The joint moderating effects of supervisor undermining and proactive personality. *Journal of Organizational Behavior*, *34*(5), 583-–06. https://doi.org/10.1002/job.1802

Ng, T. W. H., & Lucianetti, L. (2018). Are embedded employees active or passive? The roles of learning goal orientation and preferences for wide task boundaries and job mobility in the embeddedness-voice link. *Human Resource Management,* *57*(5), 1251–1269. https://doi.org/10.1002/hrm.21898

Ngibe, M., & Lekhanya, L. M. (2019). Innovative leadership in South African manufacturing small medium enterprises within KwaZulu-Natal. *Journal of Contemporary Management,* *16*(2), 300–330. https://doi.org/10.35683/jcm19034.37

Oates, B. J. (2006). *Researching information systems and computing* (1st ed.). Sage Publications.

Odoardi, C., Montani, F., Boudrias, J. S., & Battistelli, A. (2015). Linking managerial practices and leadership style to innovative work behavior: The role of group

and psychological processes. *Leadership & Organization Development Journal*, *36*(5), 545–569. https://doi.org/10.1108/LODJ-10-2013-0131

Oppenheim, A. N. (1992). *Questionnaire, design, interviewing and attitude measurement* (1st ed.). Pinter Pub Ltd.

O'Reilly, C. A., & Chatman, J. A. (2020). Transformational leader or narcissist? How grandiose narcissists can create and destroy organizations and institutions. *California Management Review, 62*(3), 5-27. https://doi.org/10.1177/0008125620914989

Ortiz-Villajos, J. M., & Sotoca, S. (2018). Innovation and business survival: A long-term approach. *Research Policy*, *47*(8), 1418–1436. https://doi.org/10.1016/j.respol.2018.04.019

Ozili, P. K. (2023). The acceptable R-square in empirical modelling for social science research. In *Social research methodology and publishing results: A guide to non-native English speakers* (pp. 134–143). IGI Global.

Pallant, J. (2010). *SPSS Survival manual. A step by step guide to data analysis using SPSS* (3rd ed.). McGraw-Hill Education.

Park, J.-Y., & Nawakitphaitoon, K. (2018). The cross-cultural study of LMX and individual employee voice: The moderating role of conflict avoidance. *Human Resource Management Journal, 28*(1), 14–30. https://doi.org/10.1111/1748-8583.12158

Park, S., & Gupta, S. (2012). Handling endogenous regressors by joint estimation using copulas. *Marketing Science*, *31*(4), 567–586. https://doi.org/10.1287/mksc.1120.0718

Pierce, J. R., & Aguinis, H. (2013). The Too-Much-of-a-Good-Thing Effect in Management. *Journal of Management*, *39*(2), 313–338. https://doi.org/10.1177/0149206311410060

Pett, M.A., Lackey, N.R. and Sullivan, J.J. (2003) *Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research*. SAGE Publications.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003). Common method biases in behavioural research: a critical review of the literature and

recommended remedies. *Journal of Applied Psychology 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Prieto, I. M., & Pérez-Santana, M. P. (2014). Managing innovative work behavior: the role of human resource practices. *Personnel Review*, *43*(2), 184–208. https://doi.org/10.1108/PR-11-2012-0199

Qingyan, Y., Duanxu, W., & Weixiao, G., (2019). Inclusive leadership and team innovation: The role of team voice and performance pressure*. European Management Journal,* *37*(4), 468–480 https://doi.org/10.1016/j.emj.2019.01.006

Raffo, D., & Williams, R. (2018). Evaluating potential transformational leaders: weighing charisma vs. credibility. *Strategy & Leadership*, *46*(6), 28–34. https://doi.org/10.1108/SL-12-2017-0130

Ramadani, V., Hisrich, R. D., Abazi-Alili, H., Dana, L. P., Panthi, L., & Abazi-Bexheti, L. (2019). Product innovation and firm performance in transition economies: A multi-stage estimation approach. *Technological Forecasting and Social Change, 140*, 271-280. https://doi.org/10.1016/j.techfore.2018.12.010

Rasheed, M. A., Shahzad, K., & Nadeem, S. (2021). Transformational leadership and employee voice for product and process innovation in SMEs. *Innovation & Management Review*, *18*(1), 69–89. https://doi.org/10.1108/INMR-01-2020-0007

Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change*, *163*, 120481. https://doi.org/10.1016/j.techfore.2020.120481

Reid III, W. A., Bud West, G. R., Winston, B. E., & Wood, J. A. (2014). An instrument to measure level 5 leadership. *Journal of Leadership Studies*, *8*(1), 17–32. https://doiorg/10.1002/jls.21317

Reinartz, W. J., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. I*nternational Journal of Research in Marketing, 26* (4), 332–344. https://doi.org/10.1016/j.ijresmar.2009.08.001

Reynolds, E. B., & Uygun, Y. (2018). Strengthening advanced manufacturing innovation ecosystems: The case of Massachusetts. *Technological Forecasting and Social Change, 136*, 178-191. https://doi.org/10.1016/j.techfore.2017.06.003

Ringle, C M., Wende, S., & Becker, J-Ml. (2024). SmartPLS 4. Monheim am Rhein: SmartPLS. Retrieved from https://www.smartpls.com

Rodrik, D. (2016). Premature deindustrialization. *Journal of Economic Growth*, *21*, 1–33. https://doi.org/10.1007/s10887-015-9122-3

Rodrik, D. (2018). An African growth miracle? *Journal of African Economies*, *27*(1), 10–27. https://doi.org/10.1093/jae/ejw027

Sarfraz, R., Rathore, K., Ali, K., Khan, M. A., & Zubair, S. S. (2022). How level 5 leadership escalates organizational citizenship behaviour in telecom sector of Pakistan? Exploring mediatory role of organizational dissent. *PloS One, 17*(10), e0276622. https://doi.org/10.1371/journal.pone.0276622

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with pls and cbsem: Where the bias lies! *Journal of Business Research, 69*(10), 3998–4010. https://doi.org/10.1016/j.jbusres.2016.06.007

Sarstedt, M., Hair Jr, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses! *International Journal of Market Research*, *62*(3), 288–299. https://doi.org/10.1177/1470785320915686

Sarstedt, M., Ringle, C. M., Cheah, J. H., Ting, H., Moisescu, O. I., & Radomir, L. (2020). Structural model robustness checks in PLS-SEM. *Tourism Economics*, *26*(4), 531–554. https://doi.org/10.1177/1354816618823921

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.), *Handbook of market research*. Springer.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Pearson.

Saunders, M. N., Lewis, P., & Thornhill, A. (2019). *Research methods for Business Students* (8th ed.). Pearson.

Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project*. Pearson.

Sehgal, R., Balasubramanian, S., Sreejith, S., & Chanchaichujit, J. (2021). Transformational leadership and employee innovation: Examining the congruence of leader and follower perceptions. *Journal of General Management, 47*(1), 18–30. https://doi.org/10.1177/03063070211013337

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika, 52*(3–4), 591–611. https://doi.org/10.1093/biomet/52.3-4.591

Shmueli, G., Ray, S., Estrada, J. M. V., & Chatla, S. B. (2016). The Elephant in the Room: Predictive Performance of PLS Models. *Journal of Business Research, 69*(10), 4552–4564. https://doi.org/10.1016/j.jbusres.2016.03.049

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive Model Assessment in PLS-SEM: Guidelines for Using PLSpredict. *European Journal of Marketing, 53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Schumpeter, J. (1934). *The theory of economic development*. Harvard University Press.

Schubert, T., & Andersson, M. (2015). Old is gold? The effects of employee age on innovation and the moderating effects of employment turnover. *Economics of innovation and New Technology*, *24*(1-2), 95–113. https://doi.org/10.1080/10438599.2014.897858

Selvaraj, P., & Joseph, J. (2020). Employee voice implications for innovation in a deliberative environment context of Indian organizations. *Personnel Review*, *49*(7), 1343–1361. https://doi.org/10.1108/PR-11-2019-0601

Shin, D., Woodwark, M. J., Konrad, A. M., & Jung, Y. (2022). Innovation strategy, voice practices, employee voice participation, and organizational innovation. *Journal of Business Research*, *147*, 392–402. https://doi.org/10.1016/j.jbusres.2022.04.015

Sichoongwe, K. (2023). Adoption Behaviour of Digital Technologies by Firms: Evidence from South Africa's Manufacturing Sector. *Global Business Review,* 1–21. https://doi.org/10.1177/09721509231190511

Sinaga, O., Lis, M., & Razimi, M. S. A. (2019). Education and core skills in the performance with mediating role of employee innovation. *Polish Journal of Management Studies*, *19*(2), 363–373. https://doi.org/1010.17512/pjms.2019.19.2.31

Škerlavaj, M., Černe, M., Dysvik, A., Nerstad, C. G., & Su, C. (2019). Riding two horses at once: the combined roles of mastery and performance climates in implementing creative ideas. *European Management Review*, *16*(2), 285–302. https://doi.org/10.1111/emre.12151

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Soete, L. (2019). Science, technology and innovation studies at a crossroad: SPRU as case study. *Research Policy*, *48*(4), 849–857. https://doi.org/10.1016/j.respol.2018.10.029

Soomro, B. A., Memon, M., & Shah, N. (2021). Paternalistic leadership style, employee voice and creativity among entrepreneurs: empirical evidence from SMEs of a developing country. *Management Decision*, *59*(2), 285–305. https://doi.org/10.1108/MD-11-2018-1207

Statistics South Africa. (2023). *P0211 – Quarterly Labour Force Survey, Quarter 2 2023.* Statistics South Africa. https://www.statssa.gov.za/publications/P0211/P02112ndQuarter2023.pdf

Statistics South Africa. (2023). *The manufacturing industry A detailed exploration of production, employment and finances (2021).* Statistics South Africa. https://www.statssa.gov.za/publications/Report-30-02-03/Manufacturing%20industry%202021_Media%20presentation.pdf

Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using Multivariate Statistics* (6th ed.). Pearson.

Taskan, B., Junça-Silva, A., & Caetano, A. (2022). Clarifying the conceptual map of VUCA: A systematic review. *International Journal of Organizational Analysis, 30*(7), 196–217. https://doi.org/10.1108/IJOA-02-2022-3136

Townsend, K., Wilkinson, A., Dundon, T., & Mowbray, P. K. (2022). Tracking employee voice: developing the concept of voice pathways. *Asia Pacific Journal of Human Resources, 60(*2), 283–304. https://doi.org/10.1111/1744-7941.12271

Troise, C., Corvello, V., Ghobadian, A., & O'Regan, N. (2022). How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era. *Technological Forecasting and Social Change, 174,* 121227. https://doi.org/10.1016/j.techfore.2021.121227

Uhl-Bien, M., & Arena, M. (2018). Leadership for organizational adaptability: A theoretical synthesis and integrative framework. *The Leadership Quarterly*, *29*(1), 89–104. https://doi.org/10.1016/j.leaqua.2017.12.009

Ullah, I., Kayani, N. Z., & Mahmood, A. (2020). Fostering innovative performance through ethical leadership: examining the mediating role of employee voice. *European Journal of International Management*, *14*(4), 672–692. https://doi.org/10.1504/EJIM.2020.107608

Umoh, U. E. (2023). Charismatic leadership and its role in organisational effectiveness. In N. P. Ololube, T. Koroye, & D. T. Elisha (Eds.), *3rd International Conference on Institutional Leadership and Capacity Building in Africa* (pp. 48–60). University of Africa.

Vaithilingam, S., Ong, C. S., Moisescu, O. I., & Nair, M. S. (2024). Robustness checks in PLS-SEM: A review of recent practices and recommendations for future applications in business research. *Journal of Business Research*, *173*, 114465. https://doi.org/10.1016/j.jbusres.2023.114465

Venkataramani, V., Zhou, L., Wang, M., Liao, H., & Shi, J. (2016). Social networks and employee voice: The influence of team members' and team leaders' social network positions on employee voice. *Organizational Behavior and*

Human Decision Processes, 132, 37–48. https://doi.org/10.1016/j.obhdp.2015.12.001

Verardi, V., & Croux, C. (2009). Robust regression in Stata. *The Stata Journal*, *9*(3), 439–453. https://doi.org/10.1177/1536867X0900900306

Vergauwe, J., Wille, B., Hofmans, J., Kaiser, R. B., & De Fruyt, F. (2018). The double-edged sword of leader charisma: Understanding the curvilinear relationship between charismatic personality and leader effectiveness. *Journal of Personality and Social Psychology*, *114*(1), 110. http://dx.doi.org/10.1037/pspp0000147

Wadho, W., & Chaudhry, A. (2018). Innovation and firm performance in developing countries: The case of Pakistani textile and apparel manufacturers. *Research Policy, 47*(7), 1283-1294. https://doi.org/10.1016/j.respol.2018.04.007

Wang, J., Zhang, Z., & Jia, M. (2017). Understanding how leader humility enhances employee creativity: The roles of perspective taking and cognitive reappraisal. *The Journal of Applied Behavioral Science*, *53*(1), 5–31. https://doi.org/10.1177/0021886316678907

Wang, L., Owens, B. P., Li, J. J., & Shi, L. (2018). Exploring the affective impact, boundary conditions, and antecedents of leader humility. *Journal of Applied Psychology*, *103*(9), 1019. https://doi.org/10.1037/apl0000314

Wegner, T. (2020). *Applied business statistics: Methods and Excel-based applications* (5th ed.). Juta and Company Ltd.

Wilkinson, A., Barry, M., & Morrison, E. (2020). Toward an integration of research on employee voice. *Human Resource Management Review, 30*(1). https://doi.org/10.1016/j.hrmr.2019.100704

Wilkinson, A., Gollan, P. J., Kalfa, S., & Xu, Y. (2018). Voices unheard: employee voice in the new century. *The International Journal of Human Resource Management*, *29*(5), 711–724. https://doi.org/10.1080/09585192.2018.1427347

Wipulanusat, W., Panuwatwanich, K., & Stewart, R. A. (2018). Pathways to workplace innovation and career satisfaction in the public service: The role of

leadership and culture. *International Journal of Organizational Analysis, 26*(5), 890–914. https://doi.org/10.1108/IJOA-03-2018-1376

Woiceshyn, J., & Daellenbach, U. (2018). Evaluating inductive vs deductive research in management studies: Implications for authors, editors, and reviewers. *Qualitative Research in Organizations and Management: An International Journal, 13*(2), 183–195. https://doi.org/10.1108/QROM-06-2017-1538

Woods, S. A., Mustafa, M. J., Anderson, N., & Sayer, B. (2018). Innovative work behavior and personality traits: Examining the moderating effects of organizational tenure. *Journal of Managerial Psychology*, *33*(1), 29–42. https://doi.org/10.1108/JMP-01-2017-0016

World Bank. (2023, September 14). *The World Bank in South Africa – Overview.* https://www.worldbank.org/en/country/southafrica/overview

World Intellectual Property Organisation. (2022). *Global Innovation Index 2022.* https://www.wipo.int/global_innovation_index/en/2022/?gclid=EAIaIQobChMIu7m395fZ_QIVQZDVCh2e3QMbEAAYASAAEgKVHvD_BwE

Xiao, L., & North, D. (2018). The role of technological business incubators in supporting business innovation in China: A case of regional adaptability? *Entrepreneurship & Regional Development, 30*(1–2), 29–57. https://doi.org/10.1080/08985626.2017.1364789

Xie, Y., Xue, W., Li, L., Wang, A., Chen, Y., Zheng, Q., Wang, Y., & Li, X. (2018). Leadership style and innovation atmosphere in enterprises: An empirical study. *Technological Forecasting and Social Change*, *135*, 257–265. https://doi.org/10.1016/j.techfore.2018.05.017

Ye, B. H., Tung, V. W. S., Li, J. J., & Zhu, H. (2020). Leader humility, team humility and employee creative performance: The moderating roles of task dependence and competitive climate. *Tourism Management*, *81*, 104170. https://doi.org/10.1016/j.tourman.2020.104170

Zangiacomi, A., Pessot, E., Fornasiero, R., Bertetti, M., & Sacco, M. (2020). Moving towards digitalization: a multiple case study in manufacturing. *Production Planning & Control*, *31*(2–3), 143–157. https://doi.org/10.1080/09537287.2019.1631468

Zapata, C. P., & Hayes-Jones, L. C. (2019). The consequences of humility for leaders: A double-edged sword. *Organizational Behavior and Human Decision Processes*, *152*, 47–63. https://doi.org/10.1016/j.obhdp.2019.01.006

Zare, M., & Flinchbaugh, C. (2019). Voice, creativity, and big five personality traits: A meta-analysis. *Human Performance*, *32*(1), 30–51. https://doi.org/10.1080/08959285.2018.1550782

Zhang-Zhang, Y., Rohlfer, S., & Varma, A. (2022). Strategic people management in contemporary highly dynamic VUCA contexts: A knowledge worker perspective. *Journal of Business Research*, *144*, 587–598. https://doi.org/10.1016/j.jbusres.2021.12.069

Zhao, X., & Lan, P. (2017). Maximising product innovation in Chinese state-owned enterprises. *International Journal of Business Innovation and Research, 14*(3), 279–300. https://doi.org/10.1504/IJBIR.2017.087089 AJG 1

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206. https://doi.org/10.1086/651257

Zhou, F., & Wu, Y. J. (2018). How humble leadership fosters employee innovation behavior: A two-way perspective on the leader-employee interaction. *Leadership & Organization Development Journal, 39(3), 375-387*. https://doi.org/10.1108/LODJ-07-2017-0181

Zhu, C., & Zhang, F. (2020). How does servant leadership fuel employee innovative behavior? A moderated mediation framework. *Asia Pacific Journal of Human Resources*, *58*(3), 356–377. https://doi.org/10.1111/1744-7941.12227

Zhu, J., Song, L. J., Zhu, L., & Johnson, R. E. (2019). Visualizing the landscape and evolution of leadership research. *The Leadership Quarterly*, *30*(2), 215–232. https://doi.org/10.1016/j.leaqua.2018.06.003

Zikmund, W. G., Babib, B. J., Carr, J. C., & Griffen, M. (2013). *Business research methods* (9th ed.). Cengage Learning.

Appendices

Appendix A: Questionnaire

SECTION 1: Research consent

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I am conducting research on the relationship between level 5 leadership and an employee innovation, including the mediating effect of employee voice on this relationship. To that end, you are asked to complete a survey on a set number of questions. This will help academia to better understand this relationship as well as provide evidence as to whether businesses should groom leaders with these traits. The questionnaire should not take more than 10 minutes of your time. Your participation is voluntary, and you can withdraw at any time without penalty. Your participation is anonymous and only aggregated data will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name: Mayur Mahabeer

Email: 22010735@mygibs.co.za

Phone: 084 919 2393

Research Supervisor: Theuns Pelser

Email: theuns.pelser@twimsafrica.com

SECTION 2: Demographic information

1. Your nationality (please specify): _____

2. Age category: _____ 18–27 _____ 28–37 _____ 38–47 _____ 48–57 58 or older

3. Your gender: _____ Male _____ Female _____ Other

4. Years of service at your current company: _____ Less than 1

_____ 1 to less than 5 _____ 5 to less than 10 _____ greater than 10 years

5. Highest level of education:_____ High school _____ Diploma or advanced certificate _____ Bachelor's degree _____ Postgraduate _____ Other (please specify)

6. Your job level: _____ Specialist _____ Supervisory _____ Management _____ Executive _____ Other (please specify)

7. Which manufacturing sub-sector do you work in: _____ Automotive _____ Printing & packaging _____ Food & beverages _____ Chemicals _____ Textiles, clothing & footwear _____ Paper & wood _____ Manufacturing support services _____ Other manufacturing

SECTION 3: Leader traits

Please answer the questions below with reference to the characteristics of the leader that you report to.

1	Strongly disagree
2	Somewhat disagree
3	Neither agree nor disagree
4	Somewhat agree
5	Strongly agree

8.	My leader is genuine	1	2	3	4	5
9.	My leader is humble	1	2	3	4	5
10.	My leader is a team player	1	2	3	4	5
11.	My leader prioritises the team and organisation first	1	2	3	4	5
12.	My leader doesn't seek the spotlight	1	2	3	4	5
13.	My leader has an intense resolve	1	2	3	4	5
14.	My leader is dedicated to the organisation	1	2	3	4	5
15.	My leader is a clear catalyst in achieving results	1	2	3	4	5
16.	My leader has a strong work ethic	1	2	3	4	5
17.	My leader is self-motivated	1	2	3	4	5

SECTION 4: Employee behaviours

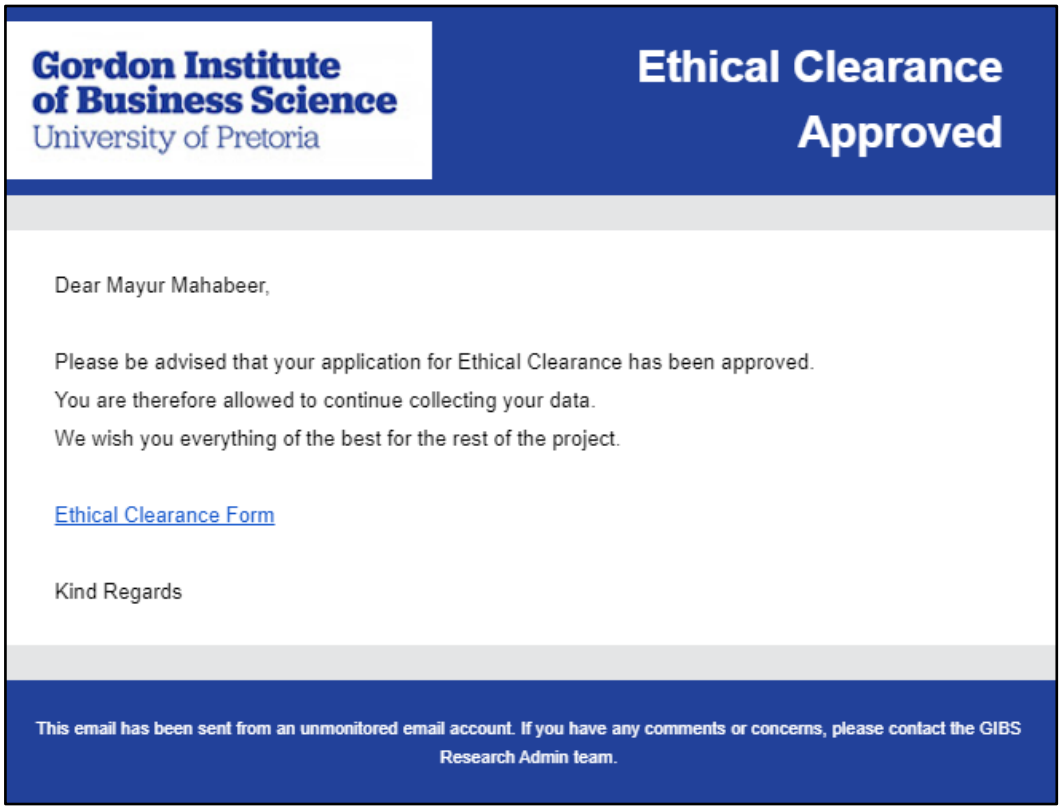
Please answer the questions below with reference to your own work behaviours.

1	Strongly disagree
2	Somewhat disagree
3	Neither agree nor disagree
4	Somewhat agree
5	Strongly agree

18.	I create new ideas for difficult issues	1	2	3	4	5
19.	I search for new working methods, techniques, or instruments	1	2	3	4	5
20.	I mobilise support for innovative ideas	1	2	3	4	5
21.	I acquire approval for innovative ideas	1	2	3	4	5
22.	I transform innovative ideas into useful applications	1	2	3	4	5
23.	I introduce innovative ideas into the work environment in a systematic way	1	2	3	4	5
24.	I proactively develop and make suggestions for issues that may influence the unit	1	2	3	4	5
25.	I proactively voice out constructive suggestions that help the unit reach its goals	1	2	3	4	5
26.	I advise other colleagues against undesirable behaviours	1	2	3	4	5

that would hamper job performance					
27. I speak up honestly with problems that might cause serious loss to the work unit, even when/though dissenting opinions exist	1	2	3	4	5

Appendix B: Ethical clearance



Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Mayur Mahabeer,

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix C: Code Structure

Coding			
Section A	Question	Allocated code	Description
2	Age category	1	18–27 years
		2	28–37 years
		3	38–47 years
		4	48–57 years
		5	58 years or older
3	Gender	1	Male
		2	Female
		3	Other
4	Years of service at current company	1	Less than 1 year
		2	1 to 5 years
		3	5 to 10 years
		4	Greater than 10 years
5	Highest level of education	1	High school
		2	Diploma or advanced certificate
		3	Bachelor's degree
		4	Postgraduate
		5	Other
6	Job level	1	Supervisory
		2	Specialist
		3	Management
		4	Executive
		5	Other
7	Manufacturing sub-sector	1	Printing and packaging
		2	Automotive
		3	Food and beverages
		4	Manufacturing support services

		5	Chemicals
		6	Textiles and clothing
		7	Paper
		8	Metal products
		9	Other manufacturing

Section B	Indicator code	Question	Allocated code	Description
		Please answer the questions below with reference to the characteristics of the leader that you report to.		
8	L5L1	My leader is genuine	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
9	L5L2	My leader is humble	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
10	L5L3	My leader is a team player	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
11	L5L4	My leader prioritises the team and organisation first	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
			1	Strongly disagree
			2	Somewhat disagree

12	L5L5	My leader doesn't seek the spotlight	3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
13	L5L6	My leader has an intense resolve	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
14	L5L7	My leader is dedicated to the organisation	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
15	L5L8	My leader is a clear catalyst in achieving results	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
16	L5L9	My leader has a strong work ethic	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
17	L5L10	My leader is self-motivated	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree

Section C	Indicator code	Question	Allocated code	Description
		Please answer the questions below with reference to your own work behaviours.		
18	EI1	I create new ideas for difficult issues	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
19	EI2	I search for new working methods, techniques, or instruments	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
20	EI3	I mobilise support for innovative ideas	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
21	EI4	I acquire approval for innovative ideas	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
22	EI5		1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree

		I transform innovative ideas into useful applications	4	Somewhat agree
			5	Strongly agree
23	EI6	I introduce innovative ideas into the work environment in a systematic way	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
24	EV1	I proactively develop and make suggestions for issues that may influence the unit	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
25	EV2	I proactively voice out constructive suggestions that help the unit reach its goals	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
26	EV3	I advise other colleagues against undesirable behaviours that would hamper job performance	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree
27	EV4	I speak up honestly with problems that might cause serious loss to the work unit, even	1	Strongly disagree
			2	Somewhat disagree
			3	Neither agree nor disagree
			4	Somewhat agree
			5	Strongly agree

		when/though dissenting opinions exist		