Gordon Institute of Business Science
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The mediating role of ethical climate on the relationship between ubuntu leadership and sustainable performance

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ABSTRACT

Sustainable performance has become high on organisations' agenda. The diverse impacts that business has had in society have sparked interest in finding new ways to lead and do business. Issues of environmental damage brought on by the manufacture, distribution, and consumption of goods, as well as the associated problems of waste management and disposal, are amongst the many challenges that business has brought about in society. Research indicates that certain leadership styles have an influence on sustainable performance, although most often conditional; mediated by other variables. Ubuntu leadership style, based on African values, bears hope for Africans, in addressing challenges of sustainability; addressing poverty, social ills and the unequal distribution of resources. This explanatory quantitative study sought to, using responses from 209 employees from manufacturing companies in South Africa, investigate the influence of ubuntu leadership on sustainable performance, as well as investigate the mediating role that ethical climate and voluntary employee behaviour play in the relationship. Statistical analysis, using partial least squares structural equation modelling (PLS-SEM), was performed to test and validate the strength and significance of the relationships between the latent constructs. Findings indicated that ubuntu leadership has a direct positive influence on sustainable performance. It was also found that mediation by ethical climate, on the relationship between ubuntu leadership and sustainable performance was fully affective, and also that mediation by voluntary environmental behaviour on the relationship was insignificant.

KEYWORDS

Sustainable Performance; Ubuntu Leadership; Ethical Climate; Voluntary Environmental Behaviour

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.

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CHAPTER 1: THE RESEARCH PROBLEM

1.1 Introduction

Chapter 1 provides the research's background, research objectives, theoretical and business contributions, the research's scope, and an outline of the subsequent chapters.

1.2 Background

Sustainability has become high on organisations' agenda (Kim & Hall, 2021). The diverse impacts that business has had in society have sparked interest in finding new ways to do business. Issues of environmental damage brought on by the manufacture, distribution, and consumption of goods, as well as the associated problems of waste management and disposal, are amongst the many challenges that business has brought about in society (Crane *et al*., 2019). Environmental pollution, caused by business operations, has dire effects on climate change, and devastating outcomes are felt by society.

The United Nations Sustainable Development Goals (SDGs) were developed, with the aim to provide solutions to the world's problems, particularly climate change, poverty, and hunger (UN, 2020). Companies, worldwide, are expected to commit to the realisation of these goals, through alignment of their policies, procedures and practices, with SDGs. Leadership is an important practice considered in achieving sustainable development goals (Hargreaves & Fink, 2004).

Sustainability is "meeting current needs without compromising the ability of future generations to meet their own needs", and performance thereof is measured using three aspects; environmental, economic and social performance (Basu, Bai & Palaniappan, 2015; Schaltegger, Hansen & Lüdeke-Freund, 2016 p.4). It is about maintaining ecological integrity, keeping environmental systems in balance and capable of replenishing themselves, having access to financial resources to meet human needs, and respecting human rights. Organisations have a responsibility to ensure that their operations and outputs preserve natural resources and do not harm society, in their pursuit for financial growth (Pantouvakis & Vlachos, 2020).

Leadership is a key factor in organisations achieving sustainable performance (Haffar *et al*., 2019) and various scholars have highlighted significant relationships between leadership style and sustainable performance. Certain leadership styles have direct and indirect effects on sustainable performance, whereas others do not.

Numerous academics investigated the effects of various leadership philosophies on sustainable performance. However, the emphasis has been more on leadership philosophies based on Western, individualistic philosophy and less on philosophies based on African collectivism principles, such as ubuntu leadership, and how they affect long-term success. Bekker (2007) argues for a need for leadership approaches based on African values, for African organisations.

Ubuntu leadership is an African leadership style, based on African values, and bears hope for Africans, in addressing challenges of poverty, social ills and unequal distribution of resources (Shutte, 2008). It is a transformative leadership approach, inclusive of African values of humanness, with a principle of collectivism, a purpose of redefining social relations, as well as continuous integrated development, and it advocates for ethical behaviour; essential in meeting sustainability goals (Ncube, 2010). Despite the fact that sustainable performance is receiving a lot of focus, its association with ubuntu leadership is under-researched.

1.3 Research Objectives

This study's main objective was to examine the influence of ubuntu leadership on sustainable performance. The second objective of this study was to examine the role and strength of variables that mediate the relationship between ubuntu leadership style and sustainable performance (Saunders & Lewis, 2017).

1.4 Theoretical Contribution

African-based leadership theories have received limited scholarly attention, arguably more so on their influence on sustainable performance. Iqbal *et al*. (2020) examined the effect of sustainable leadership on sustainable performance, and Saleem *et al*. (2020) examined the relationship between spiritual leadership and sustainable

performance. Dey *et al*. (2022) examined the relationship between ethical leadership and sustainability. These studies all focused on leadership styles of Western-origin. While Székely and Knirsch (2005) looked at the relation between responsible leadership and corporate social responsibility, Shoaib *et al.* (2022) looked at the relationship between sustainable performance and environment-specific transformational leadership. In summary, these studies increased the understanding of Western leadership styles and how they affected sustainable performance.

In recent years, the concept of ubuntu developed to inform a leadership style and motivate an alternative leadership approach for organisations; termed ubuntu leadership (Ncube, 2010). Ubuntu leadership deals with the influence, through beliefs and actions, based on African values, and the effect of role modelling these values, on followers (Bandura & Walters, 1977). Understanding how ubuntu leadership influences employee behaviour, in the context of sustainable performance, will therefore contribute to social learning theory.

On the other side, sustainable performance presupposes that businesses must be concerned with how their activities affect various stakeholders and the environment (Pantouvakis & Vlachos, 2020). It is based on what stakeholders anticipate from the environment, society, and economy (Carroll, 2021; Rajesh, 2020; Vural-Yavaş, 2021). This is consistent with stakeholder theory, which urges organizations to consider the interests and demands of many stakeholders (Freeman et al., 2010). This theory emphasises organisational management and business ethics that account for multiple constituencies such as employees, investors, suppliers, local communities and others (Freeman *et al*., 2010; Khan *et al*., 2019;). It is characterised by prioritisation of stakeholder relationship management, with the aim of achieving organisational objectives. According to Freeman *et al*. (2010), stakeholder theory is better understood as a category of hypotheses rather than a single theory. This study will therefore contribute to stakeholder theory.

Consequently, the research took a multi-theoretical method, drawing on social learning and stakeholder theories. It contributes to existing theories on ubuntu leadership and sustainable performance. While previous research has established a correlation between various leadership styles and sustainable performance, the connection between ubuntu leadership and sustainable performance remains understudied.

1.5 Business Contribution

Organisations, worldwide, are expected to commit to sustainability and business leaders are critical in modelling the way (Hargreaves & Fink, 2004; UN, 2020). Sustainability provides long-term growth, competitive advantage, financial viability and development opportunities for organisations (Kim & Hall, 2021). There has been a lot of interest in finding novel approaches to dealing with the many effects of business on society (Crane *et al*., 2019). Environmental problems, including climate change and energy crisis, are forcing businesses to adopt sustainable behaviour (Umrani *et al*., 2020). Difficult macroeconomic conditions continue, and these further raise concerns about the impact of manufacturing, on the environment. South Africa has adopted the agenda for sustainable development, along with 192 other countries, with 17 SDGs and 169 targets (UN, 2020). The goals include responsible consumption and production, energy efficiency, ending hunger, and protecting and restoring natural resource, amongst others. Organisations have a responsibility to work towards attainment of these goals.

To achieve sustainable performance, organisations require leaders who will set the tone, model the way and influence employees to behave in such a manner that leads to organisational sustainable performance. According to Dey *et al*. (2022) and Iqbal *et al*. (2022), managers are essential in paving the road for sustainable performance, by creating appropriate strategies, allocating appropriate resources, and directing staff members toward sustainable goals. African organisations have shown a desire to embrace leadership philosophies that are respectful of the local cultures in which they operate. Therefore, in the context of the actual African business climate, executives must understand the influence of their leadership style (Lutz, 2009, p. 317).

This study therefore will contribute to business, by highlighting the role and relevance of ubuntu leadership, in achieving sustainable performance.

1.6 The Research Scope

The scope of the research was restricted to manufacturing companies in South Africa, but was not sector-specific. Although the investigated constructs are universal across

all sectors and organisations, there is a large focus of sustainable manufacturing (Kravchenko, Pigosso & McAloone, 2019). Aligned to the mission statement of SDG 12, which drives the goal of responsible production and consumption (UN, 2020), manufacturing companies have an even bigger role to play. Manufacturing companies are expected to benefit the most from the findings of this study.

1.7 Outline of the Document

In Chapter 2, the reviewed literature along with the definitions and correlations of the constructs are presented.

Chapter 3 presents the research objectives, theoretical model, hypotheses, and correlations between the constructs.

Chapter 4 discusses the methodology chosen to collect data and analyse the results.

Chapter 5 presents the findings, including results of each hypothesis tested.

Chapter 6 discusses the findings.

Chapter 7 discusses academic and business implications, together with limitations of the study, and finally makes recommendations.

1.8 Conclusion

The research problem, research objectives, theoretical and business contributions and the research's scope were discussed in this chapter. An outline of subsequent chapters was also provided. A discussion on literature on the investigated constructs, as well as a review on how the constructs developed, their definitions, dimensions, and relationships, are discussed in Chapter 2.

CHAPTER 2: THEORY AND LITERATURE REVIEW

2.1 Introduction

Literature review is given in Chapter 2, providing theoretical background and defining ubuntu leadership, its development and dimensions, and providing theoretical background, defining sustainable performance, and its dimensions and development. A brief theoretical background on the relation between leadership styles and sustainable performance is also provided in this chapter. Theoretical background on concepts thought to play a mediating role in the relationship between ubuntu leadership and sustainable performance is provided in Chapter 2 as well.

2.2 Ubuntu Leadership

Ubuntu leadership is a more recent construct within the area of business leadership, business effectiveness, societal success, and governance, when compared to leadership constructs of Western origin. It has, in recent years, received attention from scholars, in an effort to define African business leadership, unpack implications for values-driven leadership through relational approaches, and contribute to literature on leadership in Africa (Lerutla & Steyn, 2021; Pérezts, Russon & Painter, 2020). It has been discussed as an alternative approach to governance (Asamoah & Yeboah-Assiamah, 2019). Less attention has however been paid, on the implications of its application in contemporary organisations (Ngunjiri, 2016).

Ubuntu leadership encourages decision-making for the common good, and not for sole gain. It establishes the standard against which ethical decisions must be made (Sambala, Cooper & Manderson, 2020). It advocates for ethical behaviour and the "demonstration of appropriate conduct through personal actions and interpersonal relationships" (Brown & Treviño, 2006, p. 595). This includes fair and principled decision-making, caring about others, and proactively influencing followers' ethical behaviour through communication of ethical standards and rewarding the use of those standards.

It draws from the African intellectual legacy, as a base for a moral behaviour that challenges East Asian and Western perspectives (Metz, 2018). It is a construct within the field of leadership, more recent in its development (Ncube, 2010). It has however recently been receiving attention as a leadership theory that challenges Western leadership theories, particularly in the era of globalisation. It holds an African view of morality and ethics (Mkhize, 2008) and has much to offer in addressing challenges such as poverty and unequal distribution of resources (Shutte, 2008). It offers a way towards overcoming global division.

2.2.1 Definition of Ubuntu Leadership

Broodryk (2006) defines ubuntu as an ancient African value of profound humanity, caring, sharing, respect, and compassion. Creff (2004) described it as an African philosophy with the power to affect governance that is founded on the idea of communal welfare and the giving of moral service to people. In Uganda, it is termed *Obuntu-bulamu,* referring to a person's compassion and harmonious contact with his or her own community (Oppenheim, 2012). In Kenya, it is termed *Utu*, which means that each person should act from the premise of that act being of benefit to the entire community.

According to Bonn (2007), there is no single agreement on the actual definition of ubuntu, almost supporting Prinsloo's (2000) critical view on the definition, that ubuntu means different things to different people. The term ubuntu derives from the Bantu Nguni languages, with relation to the proverb "*umuntu ngumuntu ngabantu*", which translates to "I am because we are" (Ncube, 2010). Van der Merwe (1996, p.1) defines it as "to be human is to affirm one's humanity by recognising the humanity of others in its infinite variety of content and form".

Drawing from the 1983 study by Hofstede, on the role of culture in managing organisations, Goldman, Thomas and Molose (2019) recognised ubuntu elements of collectivism as key to managing culturally diverse work teams in South Africa. They created a scale for measuring the idea of ubuntu, basing it on four major ideas: compassion, survival, community cohesion, and respect and dignity, supporting various scholars' arguments of ubuntu being founded predominantly on these four concepts (Broodryk, 2006; Brubaker, 2013). Goldman, Thomas and Molose (2019) concluded that defining ubuntu in broad terms may be limited to these four concepts,

but collectivism must be recognised within the concepts. Ncube (2010) supported the notion of collectivism being recognised as a concept of ubuntu.

Ncube (2010) introduced ubuntu as a transformative leadership philosophy and argued the need for inclusion of other concepts, in defining ubuntu, particularly as a leadership construct. Five new concepts were introduced; modelling the way, communal enterprise and shared vision, change and transformation, interconnectedness, and continuous integrated development. Ntibagirirwa (2018) defined ubuntu as an ethic which connects people and, founded on moral grounding.

2.2.2 Review of Ubuntu Leadership Development

Since the late 1980s, a number of researchers investigated ubuntu as a legitimate philosophical stance, notably within the setting of postcolonialism in Southern Africa (Asante, 1987). Although its virtues were acknowledged, its leadership application was not fully recognised. Mbigi (1997) did not introduce a framework for ubuntu as a leadership philosophy until the 1990s; a framework based on survival and human dignity. In that same period, Chinkanda (1990) defined ubuntu as a specific form of African humanism characterised by empathy, care, sensitivity to the needs of others, respect, consideration, and kindness.

Ubuntu was evaluated critically by Prinsloo (2000), using Mbigi's (1997) concept of participatory management style in the context of both niche and broad applications. Concerns were raised because Mbigi (1997) argued that feelings of bitterness, guilt, anger, and fear could be released by negotiating a new reality and, consequently, by discovering a new vision. Prinsloo (2000) argued that people should be afforded the opportunity to deal with the negative feelings and identify with who they truly are, so that they can know who they want to become. Furthermore, Prinsloo (2000) argued that survival, as a dimension of ubuntu, encourages some form of competition between those who are resource-rich and those who are poverty-stricken, and should rather be replaced by the concept of love. In addition, Prinsloo (2000) asked the question; who then sets the standards for human dignity, right versus wrong, and ethical versus unethical. In concluding the critical assessment, Prinsloo (2000) made a call for a framework that rather considers all these areas.

Inadvertently reinforcing Prinsloo's (200) worries, Mangaliso (2001) went on to suggest ubuntu as a competitive advantage, proving its promotion of one group over another. After Prinsloo (2000) presented the question of who sets the standards for good against bad, Ubuntu was proposed as a scale for evaluating goodness versus evil, right versus wrong, and justice versus injustice.

Tutu (2009) expressed a sense of loss for the world, emphasising the ubuntu adage as one original idea the world could have enjoyed, as a contribution from Africa. This adage positioned ubuntu as the much-needed help then, and the much-needed help today, for managers and their employees in comprehending that work is a collaborative output, where both need to support and care for one another, as they would members of their families or communities. Beyond South Africa, the ubuntu adage spread to other sub-Saharan African nations and found expression in numerous other African languages.

Mbigi (2007) built on the framework introduced in 1997, positioning ubuntu as a leadership tradition that distinguished Africans versus Western and Eastern leadership traditions, and further supported Broodryk (2006) in that ubuntu was founded on the principles of interdependence of humanity, dignity and respect. Mbigi (2007) further introduced the concepts of people mobilisation, solidarity and care, as core to ubuntu.

Metz (2007), drawing from the precepts of stakeholder identity theory, proposed ubuntu as a principle that promotes harmony between society and organisations. Metz (2007) further proposed ubuntu as a principle that could challenge Western principles. Bekker (2007) supported this and argued for a need for leadership approaches based on African values.

Msila (2008) argued for ubuntu as an enhancement of leadership in schools in South Africa. The argument premised from the role of ubuntu, as a Constitutional value that can improve school management, an ideal model from which democratic leaders could lead. Shutte (2008) summarised ubuntu in the maxims “I am because you are” and elevated it as an indigenous ethical tradition.

While collectivism emerged as a ubuntu leadership concept, Malunga (2009) and Lutz (2009) proposed ubuntu as an ethic capable of addressing individualism. These non-individualised approaches suggested ubuntu as a community-centered philosophy

with great potential to assist global management in addressing issues pertaining to the common good.

Humanness, along with harmony, commitment and humility, was also argued to be a fundamental value of ubuntu (Muchiri, 2011). It is about benevolence, love, humility, and kindness. It involves self-awareness, and how one relates with others. It is about everyone being equal, and is demonstrated through empathy and synchronicity (Mangaliso *et al*., 2021; Muchiri 2011). Trust, collective identity, shared values, and strong ties promote harmony and humanity, while commitment spells out a state of dedication to a cause and loyalty and humility is about seeing self and self-achievements as less important than others' (Mangaliso *et al*., 2021).

Growing support and the rise of ubuntu as a leadership construct occurred over time, though not with the intention of displacing Western leadership ideas, but rather to add to the diversity and richness of the conversation (Ncube, 2010), supporting the need for leadership approaches based on African values (Bekker, 2007). Ubuntu leadership has therefore been developed with the view that it would allow organisations to adjust to meet changing global challenges. The challenge however, was that as recent as 2010, development of a measurement instrument for ubuntu leadership had still received little scholarly attention (Sigger, Polak & Pennink, 2010).

Woermann and Engelbrecht (2017) extended Metz' (2007) analysis by proposing ubuntu as a substitute to stakeholder theory. Their argument was that ubuntu should be a distinct theory on its own, and coined it a relationholder theory. They proposed this theory as one that could overcome the weaknesses of stakeholder theory that they believed was driven by democratic justification. They further proposed it as theory can could provide a useful framework for determining an organisation's purpose and its management's responsibilities toward those it affects. Woermann and Engelbrecht (2017) applied the ubuntu heuristic to the relationships between organisations and their employees, which are characterised by leadership practices, decision-making, ownership, and profit-sharing, to motivate for a relationholder theory. They challenged the thinking that ubuntu was a moral theory that had potential to enrich everyone's thinking on business ethics.

Metz (2018) posit ubuntu leadership as a moral-philosophical theory of leadership that enriches communal relationships. However, Metz (2018) questions its compatibility with innovation, which Ncube (2010) argues is one of the components

of ubuntu leadership. Pérezts, Russon and Painter (2019) agreed that communality is one of the key components of ubuntu leadership, along with interdependence, relational normativity and morality. Goldman, Thomas and Molose (2019) condensed ubuntu antecedents, into one of communality, aligning with Malunga (2009) on ubuntu being a simple concept of collectivism.

Ubuntu leadership provides potential to answering the call for inclusion of ubuntu in meeting sustainability. Elkington (2020) linked the need for ubuntu leadership in managing the global climate crisis. In times of globalisation, Shutte (2008) argued for ubuntu as the much needed solution to addressing challenges of unequal resource supply, and environmental degradation. Van Norren (2020) proposed ubuntu as a way towards overcoming global division, and a way towards achieving sustainable development goals.

Ncube (2010) posits ubuntu leadership as a change and transformational leadership style, which leads to new opportunities being realised. It is through people, that organisations succeed, and people support organisations in pursuit of opportunities only when the goal is clear and there is transparency from those who lead. When decision-making is inclusive, organisations can transform to meet challenges of a changing global environment. Table 1 summarises the development of Ubuntu as a leadership theory, over the years.

Table 1: A summary of Ubuntu leadership theory development

Source	Theme
Asante, 1987	Defined ubuntu as a philosophy within the setting of postcolonialism in Southern Africa.
Chinkanda, 1990	Described ubuntu as a particular variety of African humanism characterised by compassion, empathy, awareness of others' needs, respect, regard, and kindness.
Mbigi, 1997	Proposed an ubuntu leadership framework.
Prinsloo, 2000	Used Mbigi's (1997) framework to critically assess ubuntu, and dispute survival as a concept of ubuntu. Love was proposed as the better alternative.
Mangaliso, 2001	Inadvertently went on to confirm Prinsloo's (200) concerns, by proposing ubuntu as competitive advantage; confirming its promotion of one group versus another.
Broodryk, 2006	Introduced ubuntu as an African core value based on compassion, humanity, sharing, respect, and caring.
Metz, 2007	Proposed ubuntu as a principle that promotes harmony between society and business.
Bekker, 2007	Supported Metz (2007) and further argued for a need for leadership approaches based on African values.
Mbigi, 2007	Built on the framework introduced in 1997, positioning ubuntu as a leadership tradition that distinguished Africans versus Western and Eastern leadership

	traditions, and further introduced the concepts of people mobilisation, solidarity and care, as core to ubuntu.
Msila, 2008	Proposed ubuntu as an enhancement of leadership in schools in South Africa
Shutte, 2008	Summarised ubuntu in the maxims “I am because you are”.
Lutz, 2009	Proposed ubuntu as an ethic for collectivism in business management.
Malunga, 2009	Supported the emergence of collectivism as an ubuntu leadership concept.
Ncube, 2010	Proposed ubuntu leadership as a transformative leadership philosophy that proposed an alternative to Western leadership philosophies.
Metz, 2018	Posits ubuntu leadership as a moral-philosophical theory of leadership that enriches communal relationships.
Ntibagirirwa, 2018	Aligned with Lutz (2009).
Pérezts, Russon & Painter, 2019	Argued for four main components of ubuntu leadership as interdependence, relational normativity, communality and morality.
Woermann & Engelbrecht, 2019	Proposed ubuntu as an alternative to stakeholder theory; as a relationholder theory
Goldman, Thomas & Molose, 2019	Supported Malunga's (2009) argument that collectivism is another aspect of ubuntu leadership and that the four core tenets of ubuntu continue to be survival, solidarity, compassion, and respect and dignity for all.

Van Norren, 2020	Proposed ubuntu as a way towards overcoming global division, and a way to sustainable performance.

2.2.3 Dimensions of Ubuntu Leadership

Compassion

Compassion, according to Lazarus (1991, p. 289), is "being moved by another's pain and wishing to help." It is about "the wellbeing of others" and being prepared to forgo personal interests in order to further the interests of others (Muchiri, 2011, p. 443). It entails being understanding of the difficulties that others may be through, as well as being open to discourse with them. It entails caring for people and attempting to help them, primarily because of a strong belief in interconnection (Poovan, Du Toit & Engelbrecht, 2006). It is about consideration of feelings when one witnesses another's pain and suffering, followed by the will to assist (Strauss *et al*, 2016). Tutu (1999) explained that a person who has ubuntu demonstrates care, generosity and compassion. In the workplace, it can be observed in one showing concern for the next person and wanting to assist.

Muchiri (2011), Poovan, Du Toit & Engelbrecht (2006) and Brubaker (2013) argued that the greatest measure of compassion is a leader's willingness to go the extra mile to assist others, a leader's level of sensitivity towards employees' personal problems, a leader's ability to empathise when employees are in pain, and leaders' willingness to sacrifice own desires for others' benefit.

Survival

Survival emphasises the need to, out of a shared concern, share resources (Poovan, Du Toit & Engelbrecht, 2006). To overcome difficulties, individuals need to care enough about each other and share the same will to survive. It is simpler expressed in the statement "an injury to one is an injury to all" (Poovan, Du Toit & Engelbrecht, 2006, p. 18). This can be demonstrated in the context of the workplace through concern for employees and generosity towards them (Brubaker, 2013). Survival requires collective effort. The perseverance black South Africans had, during the

apartheid regime, is what Poovan, Du Toit and Engelbrecht (2006) classify as survival.

According to Poovan, Du Toit, and Engelbrecht (2006) and Mbigi (1997), a leader's spirit of survival can be judged by their capacity to motivate staff to help one another in times of need, their capacity to allocate resources so that colleagues can perform their jobs, their willingness to make sacrifices to advance the team's objectives, and their level of concern for their subordinates.

Spirit of Solidarity

Solidarity is defined as a firm determination and commitment by individuals, to a common good of the community (Lutz, 2009). The spirit of solidarity, also closely related to survival, applies in the spirit of community, amongst a group of people (Mangaliso, 2001). It is an important element of ubuntu leadership that advocates for collectivism, and that no man is an island (Ncube, 2010). It is a dimension of ubuntu leadership that recognises leaders that intentionally build relationships and trust as good leaders who foster collaboration and reciprocity. It acknowledges that the needs of communities are far more crucial than those of individuals. It is visible in teamwork and a non-competitive environment at work. It exists in workplaces where there is a tradition of colleagues pursuing shared objectives for the good of the company and society. It is also exhibited by leaders who inspire a shared vision that guides those who follow (Ncube, 2010).

A mentality of collectivism promotes teamwork, and teamwork leads to achievement of goals (Ncube, 2010). According to Brubaker (2013), Lutz (2009), and Mangaliso (2001), a leader's capacity to foster teamwork, regard staff members like members of their own families, involve others in decision-making, and perceive oneself as one with the workforce are all indicators of their spirit of solidarity.

Dignity and Respect

Dignity and respect are viewed as being one and serving as the foundation of ubuntu (Mangaliso, 2001). It involves treating others with respect, regardless of their status or age, and showing consideration for their particular values (Poovan, Du Toit & Engelbrecht, 2006). This is one of the ubuntu components that is thought to promote

harmony in workplaces with a diverse workforce. According to Smith (2017), respect's status as a component of Ubuntu is in doubt. The claim is that it implies that everyone should be treated with respect, including strangers and sinners. In order to show respect and dignity, it is important to take into account the personal values of others, according to Brubaker (2013) and Poovan, Du Toit, and Engelbrecht (2006). Respect and dignity are also demonstrated by leaders' capacity to utilize their power in a civil manner without demeaning others.

Modelling the Way

Ubuntu leadership requires that leaders set an example for those they lead (Ncube, 2010). Modelling the way involves committing to values of sincerity, truthfulness, empathy, compassion, respect for others, and dignity (Malunga, 2009; Ncube, 2010). By committing to ethical behaviour, a leader sets an example for those who follow, to do same. Ncube (2010) considered this a critical catalyst in organisations' success and sustainability.

Communal enterprise and shared vision

Ncube (2010) calls for leaders to inspire a shared vision and approach business with a communal mindset. This approach is believed to result in shared benefits, share decision-making and inclusivity, as it allows for a variety of perspectives.

Change and transformation

Building on the Western approach of transformational leadership, Ncube (2010) proposed ubuntu leadership as a transformative leadership philosophy that holds a hope for change in African and the global environment (Ncube, 2010). Rather than forcing change on individuals, ubuntu leadership opens the path for it to happen through a process of openness and transparency.

Interconnectedness

Similar to solidarity, interconnectedness acknowledges the importance of establishing relationships with others, thereby fostering trust, collaboration, and reciprocity. Ncube (2010) contends that when individuals acknowledge their interconnectedness, they become empowered.

Continuous integrated development

For continuous integrated development in organisations, Ncube (2010) argues for the need for leaders to have ubuntu, encouraging innovation and seeking to get the best of all employees, by developing and empowering employees. Developing and empowering employees is a fundamental leadership responsibility, more so for the growth of both the organisation and the employee. Leaders who mentor and build relationships with employees foster growth.

In summary, ubuntu leadership evolved from a concept to an aphorism, and in more recent years to a leadership philosophy. Three decades prior to its development as a leadership construct, it was explored by scholars more as a philosophical perspective, than a leadership philosophy (Asante, 1987; Ntibagirirwa, 2018; Prinsloo, 2000; Ramose, 1999). The majority of research on ubuntu has been conceptual, evaluating leaders' attitudes toward values including compassion, survival, social cohesion, and respect. As ubuntu gains traction in a wide range of academic discourses and fields, both within and outside of South Africa, in fields including law, education, journalism, sport, religion, servant leadership, and public policy ethics (Qobo & Nyathi, 2016) it motivates for its understanding and significance in other areas such as sustainable performance.

There are various dimensions to it, which can be summarised into one concept of humanness. Ubuntu leadership holds a promise for inclusivity; inclusive of previously marginalised non-Western traditional values (Ncube, 2010). It also holds a hope for morality and ethical conduct by business leaders (Mkhize, 2008). It has much to offer in addressing challenges such as poverty and unequal distribution of resources (Shutte, 2008). Ubuntu has been defined by its key principles of survival, solidarity, compassion, dignity, and respect for more than 30 years (Goldman, Thomas & Molose, 2019). By incorporating the elements of modelling the way, communal enterprise and shared vision, change and transformation, interconnection, and finally

continuous integrated development, Ncube (2010) made a contribution to the theory.. Goldman, Thomas and Molose (2019) supported the inclusion of collectivism as a concept of ubuntu. At the heart of all these concepts, lies humanness (Muchiri, 2011).

2.3 Sustainable Performance

Sustainable performance is critical, in securing current and future generations' well-being. It is about meeting stakeholder expectations, both economic and social, without compromising the environment (Pantouvakis & Vlachos, 2020). It is a construct founded on the expectations of stakeholders, regarding organisations' environmental performance, social performance, and economic performance. It is thought to have a favourable impact on an organization's reputation, relationships with stakeholders, and staff productivity (Tan, 2014). Compared to companies not intentionally targeting sustainable performance, those performing well exhibit less volatility and generate greater returns (Eccles, Ioannou, & Serafeim, 2014). There has therefore been an increase in sustainable performance consciousness (Henao, Sarache & Gómez, 2019).

Historically, organisational performance was measured based on its financial performance (Chin, Tat & Sulaiman, 2015). However, there has been a shift to measure sustainable performance in recent years. Significant focus is being paid to sustainable performance, at both the macroeconomic and microeconomic levels (Yong, Yusliza & Fawehinmi, 2019). This, in pursuit to achieve a balance between organisations' economic performance, ecological preservation and respect of human rights. Sustainable performance measures organisational achievement in three main areas; environmental, social and economic (Carroll, 2021; Rajesh, 2020).

Sustainable performance also considers the ethical practices and trade-offs between economic, environmental, and social performance (Crane *et al*., 2022). Meaning that organisations are expected to adopt ethical practices while building value for all stakeholders (Székely and Knirsch, 2005). It refers to organisational performance not only from a financial perspective, but also from external stakeholders' perspective, in terms of environmental and social responsibilities. It promotes environmentally-friendly practices which also take social concerns into consideration, to mitigate the environmental impact of economic activities (Shoaib *et al*., 2022).

Sustainable activities in organisations are largely influenced by top managers who are willing to foster a culture of sustainable performance (Ilyas, Abid & Ashfaq, 2020). Leaders therefore play a critical role in driving sustainable performance within organisations (Székely and Knirsch, 2005). Through honest commitment to sustainability, leaders can drive sustainable performance. Leaders can influence employee behaviour, by advocating for moral principles to aid in achieving sustainable performance. In the past, leaders were thought to be in charge of creating, producing, and promoting goods or services that guarantee the organization's long-term economic performance (Crane *et al*., 2019). This has in recent years changed, considering, consulting and including all those who are impacted and affected.

Van Norren (2020, p. 432) holds the view, however, that leaders' approach to sustainable development goals is linear in thinking, as the goals do not sufficiently address the "human-nature-well-being interrelationships" they claim to, adequately. Van Norren (2020) argues that sustainable development goals are strongly underpinned by Western modernism, and lack African ubuntu. The scholar had therefore made a call for a move towards SDG frameworks that have ubuntu embedded in them.

2.3.1 Definition

Sustainable performance is defined as an organisation's performance in aspects of financial growth, environmental sustainability and social sustainability (Carroll, 2021; Schaltegger & Wagner, 2006).

2.3.2 Review of Sustainable Performance Development

Purvis, Mao, and Robinson (2019) claim that the 1980s saw the emergence of the idea of sustainability, which was primarily concerned with environmental performance. Business' responsibility on society, as a measure of performance, was first mentioned in published papers in the early 1960's (Morioka & de Carlvalho, 2016). Wood (1991) agreed that corporate social responsibility was nothing new. Pollution control was regarded as a social performance indicator, and it too was

mentioned as early as pre-1990s (Spicer, 1978). Since the early 1960s, the challenge has been on how to measure socio-environmental performance.

Sustainable performance is argued to have originated from the forestry sector in Europe, in response to the diminishing forest resources. Natural scientists called for preservation of nature, due to its inherent worth, and called it sustainability (Callicott & Mumford, 1997). Grober and Cunningham (2012) however, argue that the concept, in the global context, only emerged in the late 1990s, after the Brundtland Report had been published. It was in this report that sustainable development gained definition, as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Purvis, Mao & Robinson, 2019, p. 684).

In general, prevention and control of activities that harm the environment have, over the years, received more scholarly attention than social and financial performance have (Morioka & de Carlvalho, 2016). Substantial progress has however been made, towards sustainable performance. The Sustainable Development Goals (SDGs) were introduced to promote sustainable performance, solve world problems, address climate change, and kerb hunger and poverty (UN, 2020).

2.3.3 Dimensions of Sustainable Performance

Economic Performance

Economic performance is concerned with cost reductions, return on assets, market share promotion, profit and employees' financial well-being (Zhu, Sarkis & Lai, 2012). In broad terms, economic sustainability is not limited to organisations' economic performance, but includes the organisation's attitude towards the impact of such growth, on other aspects such as its ethical behaviour. Growing financially, but paying bribes or building cartels, for example, does not constitute economic sustainability. Economic sustainability is about organisational financial growth. To measure financial performance, indicators such as organisational growth in sales and profit, organisational financial efficiency and an organisation's reputation and brand-value have been used (Lee & Ha-Brookshire, 2017).

Social Performance

Social sustainability in organisations is about organisations being good corporate citizens and respecting business ethics (Lee & Ha-Brookshire, 2017). It is about organisations' social role in governing citizenship rights for individuals (Crane *et al*., 2019). Social performance is seen in organisations that provide social rights, facilitate civil rights, and channel political rights. Providing social rights may include feeding homeless people in the community within which the organisation operates, supporting schools in the community and similar.

With social performance, organisations are assessed based on their social commitment, involvement, training, growth, a healthy work environment, support for public welfare, working conditions, employee benefits, and relations amongst employees (Amui *et al*., 2017). It is about continuously meeting human basic needs (Purvis, Mao & Robinson, 2019). To measure social performance in organisations, development and implementation of policies and procedures is one factor, whether or not the organisation strives to be a good corporate citizen is another, and it is seen by how business ethics are respected.

Environmental Performance

Environmental sustainability is promoted through initiatives such as waste management, energy efficiency and resource management and this can be achieved through behavioural shift, as encouraged by top management (Kim *et al*., 2019). This is accomplished by taking steps to reduce, reuse, and recycle waste, consume less energy, and lessen any potential negative environmental effects of items (Bissing-Olson *et al*., 2013; Lee & Ha-Brookshire, 2017).

Reduction of harmful materials, carbon emissions, resource usage and waste production are some of the aspects involved in environmental performance (Akanmu, Hassan & Bahaudin, 2020). Environmental sustainability is about the continued functioning of ecosystems, as well as the protection and conservation of genetic resources and biodiversity. An 8-item scale was created by Lee and Ha-Brookshire (2017) to evaluate sustainable performance. The scale aims to evaluate an organisation's performance in terms of its environmental, social, and financial pillars.

2.4 Leadership and Sustainable Performance

Different leadership philosophies have been investigated recently as factors in sustainable performance. Dey *et al*. (2022) and Iqbal *et al*. (2020) found that these leadership philosophies had an indirect effect on sustainable performance, albeit a small one, in two separate studies that examined the relationship between ethical leadership and sustainable performance and the relationship between sustainable leadership and sustainable performance, respectively. Iqbal *et al*. (2020) found that sustainable leadership had a significant impact on employees' psychological safety, which in turn enhanced sustainable performance. Dey *et al*. (2022) found that ethical leadership significantly influences employees' voluntary environmental behaviour, which in turn impacts sustainable performance.

Shrivastava (1995) argued for sustainable leadership as a leadership style that encourages the development of long-term value, in which an organisation's revenue is supported by factors related to its physical, social, ethical, and economic well-being. Sustainable leaders are thought to make decisions with the long term in mind, encourage innovation, nurture workers, generate high-quality goods, and add value for all. Fry (2003) argued for spiritual leadership, as a leadership style that includes principles, practices, and behaviours that serve to inspire oneself and others to feel spiritually alive through calling and membership, and a style of leadership that creates a vision, and followers get a sense of calling and that their lives have meaning. It involves fostering a social environment that values selfless love, care, and admiration for others as well as for oneself. Afsar, Badir and Kiani (2016), in their study, found that spiritual leadership positively impacted employee green behaviour, which ultimately impacted sustainable performance.

Environmentally-specific transformational leadership style was another leadership explored, in relation to sustainable performance. It is believed to stress environmental concerns and aims to support organisations' and employees' ecologically responsible behaviour, and ultimately drive sustainable performance (Robertson, 2018). It is a style believed to positively impact employees in a manner that they behave pro-environmentally, which in turn also impacts sustainable performance (Dey *et al*., 2022; Shoaib *et al*., 2022). On the other side, responsible leadership has been shown to have an effect on sustainable performance (Székely and Knirsch, 2005). It advocates for the interests of all stakeholders. Employees, suppliers, the general public, and shareholders are examples of stakeholders. Unlike other leadership styles

examined in the context of sustainable performance, responsible leadership was found to directly affect sustainable performance (Székely and Knirsch, 2005). The ethical climate and voluntary environmental behavior in the study by Dey *et al*. (2022) mediated the associations between the latent components included in the study.

2.5 Ethical Climate

An ethical climate within an organisation refers to the collection of behaviours, feelings and attitudes displayed daily by co-workers (Guerci *et al*., 2015). It is an environment believed to be created by a leader that displays ethical behaviour, honesty and trustworthiness (Brown & Treviño, 2006). In organisational context, an ethical climate is fostered by leaders who approve rules, code of ethics, policies and procedures that encourage ethical conduct, complies with same procedures and rewards or penalises ethical or unethical conduct, respectively (Pasricha, Singh & Verma, 2018). An ethical climate can also be created through the unwritten rules and values of ethical conduct.

Victor and Cullen (1998) provided a definition for ethical climate, as the persistent perception of the importance of ethical behaviour and practices. An organisation with a good ethical climate is one where a code of ethics is formally written, policies and procedures are in place to encourage ethical behaviour, and unethical behaviour is instantly dealt with (Schwepker, 2001). Unlike in Europe and North America where social control by the collective and the individual, respectively, are responsible for ethical conduct in business, top management is in Asia and Africa responsible for ethical conduct in business (Crane *et al*., 2019).

Discretion by management is key in influencing ethical behaviour, particularly in Asia and in Africa, where top management is ultimately responsible for ethical conduct in business. Ethical leadership has been demonstrated to have a major impact on the ethical climate. The influence of ethical leadership on sustainable performance was examined by Dey *et al*. (2022), and it was discovered that ethical leadership had a substantial effect on the ethical climate. Additionally, it was shown that ethical climate affected voluntary environmental behaviour, which in turn had a major impact on sustainable performance. Additionally, ethical climate acted as a mediator in the interaction between ethical leadership and voluntary environmental behaviour.

From the review of the role of ethical climate in sustainable performance, it appears that an ethical climate plays a substantial role in sustainable performance. The role of leadership in this is however also highlighted. In summary, literature suggests that leaders are critical in driving organisational ethical climate, and an ethical climate drives sustainable performance. This suggests three potentially significant relationship: a direct one between leadership style and ethical climate, an indirect one between leadership style and sustainable performance, which is also mediated by ethical climate, and a direct one between leadership style and voluntary environmental behaviour.

2.6 Voluntary Environmental Behaviour

When used in a business context, voluntary environmental behaviour refers to a person's willingness to act in a way that is environmentally friendly (Bissing-Olson *et al*., 2013). It can be evident in an employee who actively participates in environmental protection efforts, takes the initiative to act in environmentally friendly ways, and goes above and beyond what is required of them at work. It is said to aid organizations in establishing long-term success.

According to Paton (2002), environmental behaviour taken on a voluntary basis by employees can help businesses run sustainably. Employee behaviour that encourages energy efficiency and excellent waste management at work has a significant positive impact on an organization's ability to run sustainably. However, Dey et al. (2022) emphasized the importance of leadership in this. Leaders can promote sustainable performance by promoting staff pro-environmental behaviour (Kim *et al*., 2019).

In their research, Dey *et al* (2022), voluntary environmental behaviour was found to directly and significantly influence sustainable performance. Saleem *et al*. (2020) and Liu and Zhao (2019) made the same findings as Dey *et al*. (2022) in that voluntary environmental behaviour positively influences sustainable performance. Although some leadership styles have an impact on sustainable performance, a leader can influence employee behaviour, which in turn can influence sustainable performance.

The review of literature further highlighted two other significant relationships; the direct relationship between voluntary environmental behaviour and sustainable

performance, and the indirect relationship between leadership style and sustainable performance, mediated by voluntary environmental behaviour. Additionally, the review of literature highlighted the dominance of studies based on the impact of leadership styles that are of Western-origin. Heeding the call for African solutions for African problems, the role of an African value-based leadership style, such as ubuntu leadership style must be explored (Bekker, 2007; Ncube, 2010). The relationship between ubuntu leadership and sustainable performance has only received a small amount of investigation.

2.7 Sustainable Performance in Manufacturing Companies

In the manufacturing industry, different types of manufacturing companies have different degrees of sustainable performance (Burawat, 2019). However, most are focused on performing well in economic and environmental aspects, while social aspects are been neglected (Suppipat & Hu, 2022). Some focus on financial aspects, while some focus on applying environmentally-friendly practices. To achieve sustainable performance, manufacturing companies need to address challenges associated with organisational culture, resource availability, end-of life service, reputation, impact on society, and efficient waste management too. It is insufficient for manufacturing companies to rely solely on product-level sustainability; they need to tap into socio-technical systems too. This can be achieved through partnerships, embracing new markets, encouraging innovation, supporting diversity in teams, and integrating emerging technologies for social sustainability.

Critical to this process, are the driver, the facilitator, and a supporter (Suppipat & Hu, 2022). When these three key roles are in place, stakeholder participation, along with collaboration in supply chain can be facilitated. In this system, the driver is represented by a company that encourages innovation, while a facilitator is considered to be the leader or someone who ensures collaboration amongst the various stakeholders and drives a shared-vision, and a supporter can again be the company, or any other stakeholder, that supports the vision through information and resource-sharing.

In their investigation into the influence of steel recycling businesses on sustainable management, Taghipour *et al*. (2022) discovered that these businesses had a

significant impact on sustainable performance. Gerbens-Leenes, Moll, and Uiterkamp (2003) claimed that little is known about how food manufacturing businesses affect sustainable performance in another study on the use of environmental sustainability indicators for food production.

In summarising the entire Chapter 2, the role of leadership in sustainable performance has been highlighted, the role that both ethical climate and voluntary environmental behaviour can play in mediating the relationships has been highlighted, and lastly, less is known about how ubuntu leadership can influence all these. The review has also advanced the view that all organisations across the world have a duty to, and need to strive for sustainable performance (Henao, Sarache & Gómez, 2019). Van Norren (2020) called for the inclusion of ubuntu in meeting sustainability, and has as such, motivated for this study.

2.8 Conclusion

This chapter provided theoretical background, provided a definition for ubuntu leadership, its development and dimensions, provided a definition for sustainable performance, and its dimensions and development. Through the lenses of social learning and stakeholder theories, the chapter also gave a brief theoretical foundation on the relationship between leadership styles and sustainable performance. This was done to better comprehend the variables and structures. The research hypotheses are outlined in Chapter 3.

CHAPTER 3: RESEARCH HYPOTHESES

3.1 Introduction

This study aimed to build on prior findings, by exploring the potential relationships uncovered in Chapter 2. A conceptual model was developed, and is briefly explained in this chapter, highlighting the different relationships.

3.2 Development of the Theoretical Model

Following the review in Chapter 2, wherein the role of leadership in sustainable performance was highlighted, and the role that both ethical climate and voluntary environmental behaviour can play in mediating the relationships was highlighted, a theoretical model was developed, as seen in figure 1, to direct and guide the research design and methodology (Creswell & Creswell, 2017).

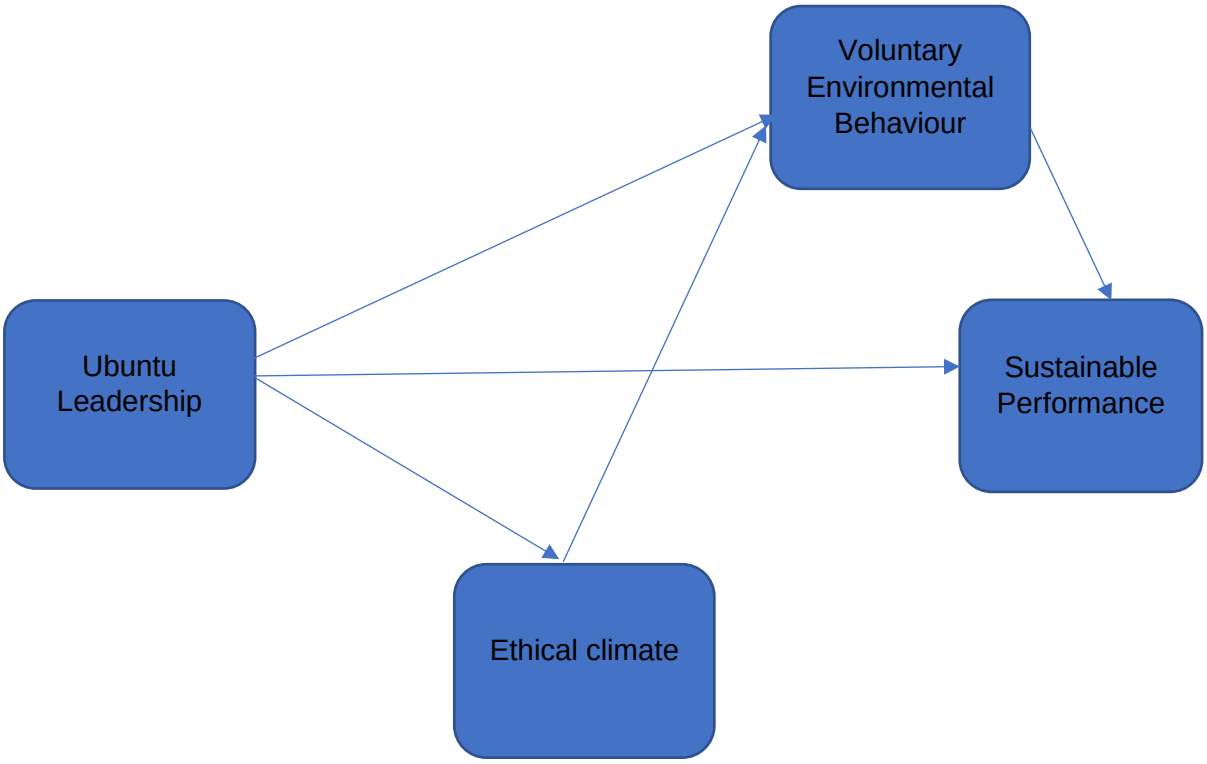

Figure 1: Development of the Theoretical Model

A quantitative study employs hypotheses to describe characteristics and relationships among variables (Creswell & Creswell, 2017, as such hypotheses were developed, as depicted in figure 2. Each hypothesis was developed, following a research question that this study aimed to answer.

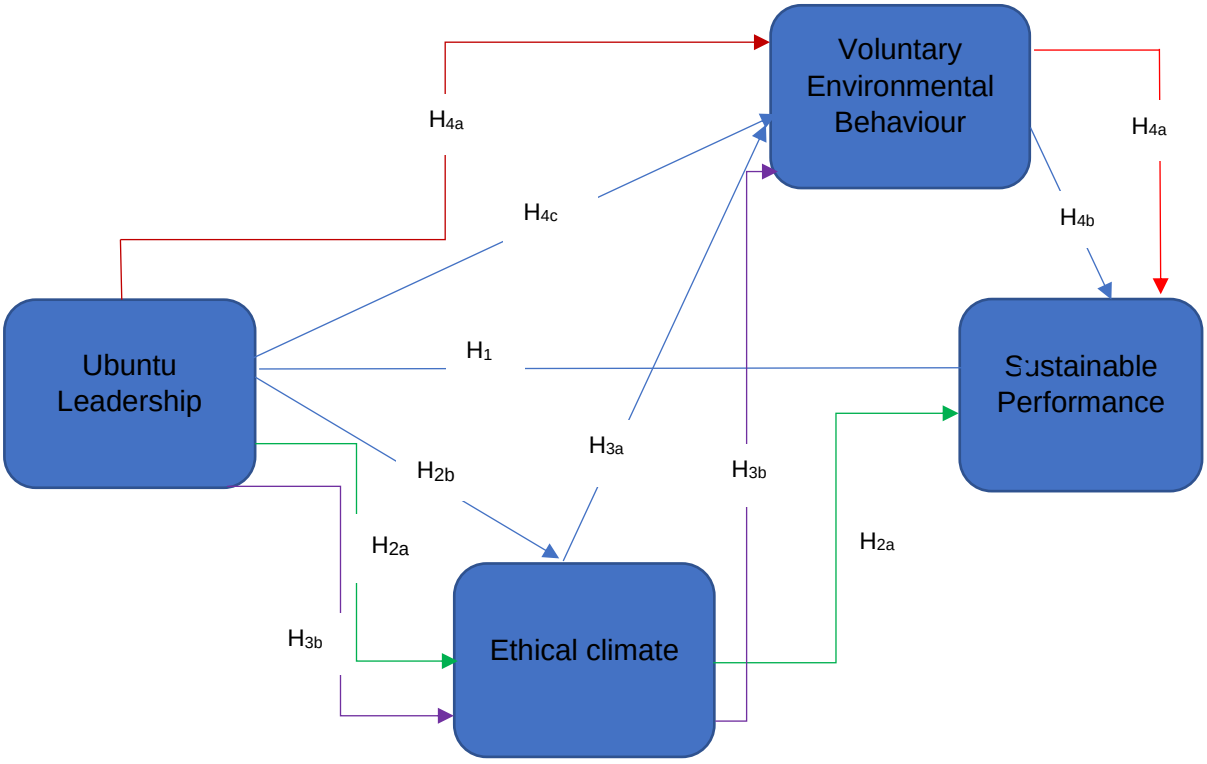

Figure 2: Theoretical Model with Hypotheses

3.3 Hypotheses

3.3.1 Hypothesis 1

Following the review of literature in Chapter 2, this study sought to explore the influence that ubuntu leadership has on sustainable performance. With the argument that ubuntu leadership holds a promise for sustainable performance (Ncube, 2010; Van Norren, 2020), the following research question was formulated;

RQ_1: To what extent does ubuntu leadership influence sustainable performance?

To address this question, the following hypothesis was tested;

H_1: Ubuntu leadership has a direct positive influence on sustainable performance.

3.3.2 Hypothesis 2

Past research also suggested, that an ethical climate facilitates the impact of leadership influence, in encouraging employees to voluntarily behave in pro-environmental ways. Dey *et a*l. (2022) found that an ethical climate within an organisation, mediated the impact of ethical leadership on voluntary environmental behaviour, which in turn significantly influenced sustainable performance. To contribute to this theory, the following research question was formulated;

RQ_{2a}: To what extent does ethical climate mediate the relationship between ubuntu leadership and sustainable performance?

To answer this question, the following hypothesis was tested;

H_{2a}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance.

However, Dey *et al*. (2022) also discovered a direct link between ethical leadership and ethical climate, with ethical leadership having a favourable influence on an ethical atmosphere within an organisation. Additionally, in order to support this notion, the following study question was developed;

RQ_{2b}: To what extent does ubuntu leadership influence ethical climate?

To adress this question, the following hypothesis was tested;

H_{2b}: Ubuntu leadership has a direct positive influence on ethical climate.

3.3.3 Hypothesis 3

Further building on Dey *et al*.'s (2022) findings, on the impact of an ethical climate on voluntary environmental behaviour, where ethical climate was found to influence voluntary environmental behaviour, this study sought to contribute to the theory, by testing whether, in the context of this study, same would be found. The following research question was therefore formulated;

RQ_{3a}: To what extent does ethical climate influence voluntary environmental behaviour?

To answer this question, the following hypothesis was tested;

H_{3a}: Ethical climate positively influences voluntary environmental behaviour.

It has however also been suggested, that an ethical climate, not only has a direct impact on voluntary environmental behaviour, but also facilitates the impact of leadership influence, in encouraging employees to voluntarily behave in pro-environmental ways. Dey *et a*l. (2022) found that ethical climate mediated the relationship between ethical leadership and voluntary environmental behaviour. This motivated the research question;

RQ_{3b}: To what extent does ethical climate mediate the relationship between ubuntu leadership and voluntary environmental behaviour?

To answer this question, the following hypothesis was tested;

H_{3b}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and voluntary environmental behaviour.

3.3.4 Hypothesis 4

According to Dey *et al*. (2022), voluntary environmental behaviour mediates the relationship between ethical leadership style and sustainable performance, as discussed in Chapter 2. To build on this theory, the following research question was formulated;

RQ4a: To what extent does voluntary environmental behaviour mediate the relationship between ubuntu leadership and sustainable performance?

To answer this question, the following hypothesis was tested;

H_{4a}: Voluntary environmental behaviour has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance.

Saleem *et al*. (2020), Dey *et al*. (2022) and Liu and Zhao (2019) made the same findings that voluntary environmental behaviour influences sustainable performance positively. To test the impact of voluntary environmental behaviour in this study's context, the research question was;

RQ_{4b}: To what extent does voluntary environmental behaviour influence sustainable performance?

To answer this question, the following hypothesis was tested;

H_{4b}: Voluntary environmental behaviour positively influences sustainable performance

Based on the principles of social learning theory, it is expected that a leader's style would be so influential that employees need not be prompted to behave in environmentally friendly ways, but that they would voluntarily seek to do good for the environment (Bandura & Walters, 1997). Dey *et al*. (2022) found it surprising that, in their study, ethical leadership style had no significant influence on employees' voluntary environmental behaviour. This motivated for the research question;

RQ_{4c}: To what extent does ubuntu leadership influence voluntary environmental behaviour?

To answer this question, the following hypothesis was tested;

H_{4c}: Ubuntu leadership positively influences voluntary environmental behaviour.

3.4 Conclusion

This chapter addressed questions that came up as a result of literature review, as well as the hypothesis that would be tested, in order to answer the questions. The choice of research methodology and research design are discussed in Chapter 4.

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

4.1 Introduction

Chapter 4 describes the methodology and design of the research. In addition, it describes the statistical analysis techniques used to analyse categorical (demographic) and continuous variables for statistical analysis. Chapter 4 elaborates on the selection of statistical methods for testing the hypotheses outlined in Chapter 3 and discusses the study's limitations.

4.2 Research Methodology

4.2.1 Research Philosophy

The study's goal was to explore the relationships between ubuntu leadership, ethical climate, voluntary environmental behaviour, and sustainable performance; investigating a social reality that was independent of the researcher and research subjects. A positivistic paradigm was deemed most appropriate (Creswell & Creswell, 2017; Saunders & Lewis, 2017). This philosophy focuses on observable phenomena, with the expectation that the collected data will be objective, thereby permitting evaluation of the relationships between independent and dependent variables. The purpose of the study was to examine this relationship using methods that yield facts based on observable data (Zyphur & Pierides, 2020).

Given the gap identified in the literature, in that limited research has been done on the influence of ubuntu leadership on sustainable performance, a quantitative study was done, to test the strength and significance of the relationships between ubuntu leadership and sustainable performance and the mediating effect that ethical climate and voluntary environmental behaviour may have on it (Creswell & Creswell, 2017).

4.2.2 Research Approach

The approach of the study was to gather quantitative data, for statistical testing of the hypothesised relationships (Creswell & Creswell, 2017). A deductive approach was

therefore taken, approached from the lens of social learning and stakeholder theories. Existing theories allow for a deductive approach, as opposed to an inductive approach which seeks to develop new theory (Saunders & Lewis, 2017). This study aimed to enhance understanding of the relationship between ubuntu leadership, ethical climate, voluntary environmental behaviour, and sustainable performance, as well as how ethical climate and voluntary environmental behaviour moderate the relationship between the constructs. Recent academic research examined and applied these constructs to the domains of leadership and sustainable performance, examining and explicating various research methodologies and models (Dey *et al*., 2022; Muller, Smith & Lillah, 2019). This study consisted of one main independent variable, ubuntu leadership and one main dependent variable, sustainable performance. In testing the various relationships however, there were instances where ethical climate and voluntary environmental behaviour were independent variables and dependent variables, respectively. Testing of the various relationships influenced the choice of a deductive approach.

4.2.3 Research Design

The purpose of this research was to study the relationships between the variables in the model, as well as to be able to produce accurate description of the relationships, thus an explanatory study (Saunders & Lewis, 2017). Evaluation of the strength and significance of the relationships between the latent constructs was another objective of the study. If the goal of the study had been to create a new theory, an exploratory strategy would have been acceptable, but this was not the case for this study (Harrison, Reilly & Creswell, 2020). A descripto-explanatory approach was therefore selected (Roberts-Lombard & Petzer, 2018; Saunders & Lewis, 2017). Using the hypotheses outlined in Chapter 3, testing them against the collected data, and accepting or rejecting the hypothesis based on the strength and significance of the relationship, the purpose of the study was attained (Creswell & Creswell, 2017; Hair *et al*., 2019).

4.2.4 Research Strategy

The descripto-explanatory design provided guidance for a structured survey research strategy (Roberts-Lombard & Petzer, 2018). This strategy allowed for collection of similar data from a sizeable sample (Saunders & Lewis, 2017) and for significant statistical analysis, as well as objective deduction of the results (Harrison, Reilly & Creswell, 2020). This strategy was also cost-effective and allowed for rapid collection of data. The survey was in a form of an online self-administered questionnaire.

4.2.5 Research Time Horizon

Although a longitudinal time horizon would have allowed for the study of changes and developments on the characteristics of the relationship between the variables over time, it was impractical to achieve in the limited time available to complete this study (Saunders & Lewis, 2017; Creswell & Creswell, 2017). This study was therefore conducted using a cross-sectional time horizon. Data was collected from respondents in a short period of time (six weeks in particular) and without taking into account the changes in the relationships between the variables over time.

4.3 Research Design

4.3.1 Population

Sustainable performance is expected from all types of organisations. Based on the SDGs and the call for all organisations to work towards these goals, all types of organisations have elements of sustainable performance. For the purpose of this study however, manufacturing companies, in South Africa, were selected as the population of the study. Manufacturing is one of the economic processes that have a substantial impact on the environment, and considered harmful to the environment (Gerbens-Leenes, Moll & Uiterkamp, 2003). Manufacturing companies, by virtue of their potential impact on the environment, are expected to have stricter measures in place, to ensure sustainable performance; therefore, selected for the study. Ubuntu leadership, on the other hand, has been argued as indigenous to Africa, with its origins from South Africa, implying its dominance in South Africa (Shutte, 2008), therefore expected to have been experienced by many individuals in South Africa.

The population relevant for this study was therefore all employees working for manufacturing companies in South Africa.

4.3.2 Unit of Analysis

The unit of analysis describes subjects of interest for the individuals or groups who contribute to the research (Creswell & Creswell, 2017). For this study, employees were asked to share their individual perceptions about their leaders, the ethical climate within the organisations they worked for, sustainable performance of the organisations, as well as about their own behaviour towards the environment. The unit of analysis was therefore at an individual level, as data was collected from the employees. This selection was appropriate as employees would have formed perceptions about those they report to (their leaders), and potentially have been influenced by them, to behave in a manner that achieves sustainable performance (Creswell & Creswell, 2017). Chief Executive Officers were not expected to form part of the respondents, as the expectation is that their next line of reporting would be the board. In similar studies, data was collected from individuals too (Dey *et al*., 2022; Iqbal *et al*., 2020).

4.3.3 Sampling Method

Ideally, a researcher should have a complete list of population members in order to employ probability sampling techniques and draw statistical conclusions about the population (Creswell & Creswell, 2017; Saunders & Lewis, 2017). This, however, was not possible for this research. Non-probability sampling was used because it permitted selection of a sample in the absence of a complete list of individuals.

Purposive non-probability technique was initially used for sampling in this study, where six manufacturing companies were identified, from which data could have been collected. These companies were selected as the sample was considered illustrative and representative, based on their size, and two of them granted permissions. To comply with the prescripts of the POPI Act, each company distributed the questionnaire to its employees. Following the low number of responses, volunteer sampling techniques were used, where the survey was made available via LinkedIn,

for employees in manufacturing companies to volunteer themselves to participate in the survey. In a similar study, where the theory was tested deductively, non-probability sampling technique was used and a sample of 281 was achieved, although convenience sampling technique was used (Dey *et al*., 2022). Convenience sampling was not preferred for this study, as the study would have lost its relevance. The study aimed for no less than 200 responses, in order to meet the requirement of statistical significance, and testing of mediating factors, through structural equation modelling (Hair *et al*., 2019).

4.3.4 Measurement Instrument

The questionnaire, as shown in appendix 1, circulated to the population, drew for existing measurement instrument, as the study was deductive in nature (Saunders & Lewis, 2017). The questionnaire was constructed using existing measurement scales, grouped according to the constructs being measured, and measured using a Likert scale ranging from one to five (Adeniran, 2019). The first section of the questionnaire described the objective of the study, followed by a section where respondents provided their demographic information. Following this section, respondents were asked 27 questions about their perceptions of their leaders, based on a combination of questions from different scholars' measure of ubuntu and ubuntu leadership; based on survival, spirit of solidarity, compassion, dignity and respect, modelling the way, vision-sharing, transparency, collectivism and fostering innovation. Following that, respondents were asked questions related to sustainable performance, based on an 8-item scale developed by Lee and Ha-Brookshire (2017), followed by questions to measure employees' perception of ethical climate within their organisations, based on a 7-item scale developed by Schwepker (2001). The last section asked respondents to answer questions based on employees' voluntary environmental behaviour, based on a 3-item scale developed by Bissing-Olson *et al*. (2013). The constructs were coded as shown in appendix 2. Appendix 3 summarises the items, scales and sources used in measuring the constructs.

These instruments were used before. However, new dimensions were explored under the ubuntu construct, based on Ncube's (2010) framework. For instruments used before, they were assumed to have had Cronbach's alpha in good range (Hair *et al*., 2019). Despite having Cronbach's alphas in good range however, the instruments

measured particular variables in particular circumstances. An exploratory factor analysis was conducted, to assess the validity and reliability of the instruments, under this study's specific circumstances (Henseler, Ringle & Sarstedt, 2015).

4.3.5 Pilot Survey

The questionnaire was subjected to an ethical consideration process, before it was distributed. Upon receipt of ethical clearance, presented in appendix 4, an internet-based survey was designed, using Survey Monkey, and distributed to 10 respondents representing employees of manufacturing companies, for pre-testing. Six responses were received, and none of the respondents, raised concerns, even though they were encouraged to, should they have any (Saunders & Lewis, 2017). The pilot survey was closed and data collected from the pilot study did not form part of this study's analysis.

4.3.6 Data Collection

A self-administered online questionnaire was distributed using Survey Monkey, to employees working for manufacturing companies in South Africa. Two companies granted permission, via electronic mail, to circulate the survey to its employees, on the researcher's behalf, therefore the survey link was shared with the two companies' Executive Managers, for distribution to their employees. Three weeks following the sharing of the link, response rates were not satisfactory. In an effort to increase response rates, the survey link was shared via LinkedIn, for those employees who work in manufacturing companies to volunteer to complete the survey. This choice of distribution channel eliminated the geographical and logistical constraints that would have slowed down the questionnaire's distribution (Saunders & Lewis, 2017). The internet-based application was chosen because it also allowed for survey customisation. This method further reduced the possibility of the researcher influencing respondents. The survey was made available for a total of six weeks.

All items of the survey were made mandatory to complete, to avoid having missing data which would negatively impact the execution of various statistical computations (Chen *et al*., 2020). The Likert scale was set up in such a manner that responses were presented in words, where strongly disagree was coded as one, and strongly

agree was coded as five. The data collected from the survey was stored in a secure, password-protected, cloud-based storage, on Google Drive.

4.4 Data Analysis

This section discusses the types of data analysis conducted. Before employing structural equation modelling for statistical analysis, a process of data preparation was followed, missing data was dealt with, and descriptive statistics were analysed. Prior to further statistical and hypotheses testing, the measurement model and the structural model were evaluated for fitness, following descriptive statistics analysis.

4.4.1 Data Preparation

Data was collected using a Likert scale, rendering the data quantitative, numeric and discrete of interval quality, in terms of statistical classification (Wegner, 2020). Survey Monkey, used to administer the online survey, enabled convenient downloading of the data into Microsoft Excel (Excel), from which missing data was dealt with, as discussed in the section below. The data was coded, to enable statistical analysis, as well as for easy referencing. Likert scale responses were presented with numeric values, where one equalled strongly disagree and five equalled strongly agree, corresponding with options on the Likert scale. Categorical, ordinal data such as level in organisation and organisational size were automatically coded by Survey Monkey, but verified in Excel, represented by numbers between one and eight. The question “What manufacturing industry do you work in”, was changed to “Manufacturing Company Type". The question was misworded at the time of circulation of the survey, therefore corrected.

4.4.2 Missing Data

For ease of statistical analysis, there should be no missing values from data (Chen *et al*., 2020). It was therefore necessary to deal with the missing values. In dealing with the missing data, two options were considered; firstly, substitution of the missing

values, which would have reduced variability as well as distort the distribution characteristics of the data, and secondly, deletion of the missing data.

After dealing with the missing values, the coded data was uploaded, from Excel into IBM Statistical Package for Social Sciences version 28 (SPSS), for descriptive statistical analysis and structural equation modelling purposes. The software was verified as set to a standard confidence level of 95%, to ensure that the parameters in the software were aligned to the data set (Chen *et al*., 2020).

4.5 Descriptive Statistics

Descriptive statistics were analysed, using SPSS. Using the demographic information collected in the survey, demographic descriptive statistics were analysed, to provide insight into the profile of the respondents. Descriptive statistics were also analysed per construct, to gain insight into the behaviour of the variables measured in the study. In addition to the overall trends, dispersion and skewness of the data was analysed, for normality, and the presence of outliers. The results are presented in Chapter 5.

4.5.1 Sample Demographics

Eight demographic questions were asked in the first section of the survey. This was done, so that respondents could be profiled (Wegner, 2020). The data collected included the type of manufacturing company the respondents worked for, the respondents' age, gender, race, their level in organisation, tenure in the organisation, the size of the organisation they worked for and the organisation's age.

4.5.1.1 Manufacturing company type

The question on the type of manufacturing company respondents worked in, was categorised into six groups; automobile, chemical products, rubber and plastics, food and beverages, textile, clothing, leather and footwear and iron, metal and steel. This question was asked not only to profile the respondents, but to also be able to test the argument that a relationship between manufacturing company type and sustainable performance exists. Gerbens-Leenes, Moll and Uiterkamp (2003) and Taghipour *et al*. (2022) argued, as discussed in Chapter 2, that the type of manufacturing a company is involved in, impacts on its level of sustainable performance. The possible effect of manufacturing company type was therefore controlled, to test the suggestion. This was done by means of hierarchical multiple regression.

4.5.1.2 Age

The question on age was categorised into six groups; 18-24, 25-34, 35-44, 45-54, 55-64 and 65+. This question was asked to profile the respondents.

4.5.1.3 Gender

The question on gender was categorised into three groups; female, male and an option was provided for those who preferred not to specify. This was asked, to also profile the respondents.

4.5.1.4 Race

The question on race was categorised into five groups; African, Coloured, Indian, White and other. This question too, was asked in order to profile the respondents.

4.6 Statistical Analysis

Before any statistical analysis could be performed, the model was evaluated for fitness and prediction capability (Hair *et al*., 2019). Following descriptive analysis of the constructs, the measurement model was analysed for normality, validity, and

reliability, following which a factor analysis was conducted. The structural model was also analysed for fitness, before any hypothesis testing could be done. These assessments were done, as violation of any of these, would prohibit the researcher from generalising any inferences made from the results (Cramer & Howitt, 2004). The results are presented in Chapter 5.

4.6.1 Normality

There is most often an assumption with statistical tests, that the data is normally distributed (Hair *et al*., 2019). When data normality is violated, interpretations and inferences become invalid and unreliable. The data's normality was therefore assessed, using skewness and kurtosis z-values, the Shapiro-Wilk test p-value and by visually assessing normal p-plots and scatter plots generated as part of the analysis output. For this study's sample size and level of significance (95%), skewness and kurtosis z-values in the range -2.58 to +2.58 were an acceptable indication that the data was normally distributed (DeCarlo, 1997). In smaller samples, skewness and kurtosis z-values between -1.96 and + 1.96 would have been acceptable. The null hypothesis for the Shapiro-Wilk test is that the data is normally distributed (Shaphiro & Wilk, 1965), and it is rejected when the p-value is below 0.05; meaning that any value above 0.05 indicates that the data is normally distributed.

4.6.2 Validity

Validity of a scale is the degree to which it measures what it is intended to measure accurately (Hair *et al*., 2019). Although the scales chosen for the measurement instruments were based on existing theory and were tested before, they were tested under distinct circumstances. It was therefore necessary to assess the degree to which the measurement scales measured the constructs in this study (Hair *et al*., 2019; Henseler, Ringle & Sarstedt, 2015). Convergent validity (average variance extracted) and discriminant validity (cross-loadings) were assessed, by means of partial least squares structural equation modelling (PLS-SEM). This technique was selected based on its capacity to test complex relationships between multiple latent constructs, and mainly due to its capacity to test for and validate the strength and

significance of the relationships (Astrachan, Patel & Wanzenried, 2014). Iqbal *et al*. (2020), used the same technique in a similar study, testing the relationship between sustainable leadership and sustainable performance, with more than three latent variables in the study, using a large sample size of 405. Validity was confirmed when each construct's average variance extracted (AVE) was larger than 0.5 and the squared AVE was greater than the correlations between the constructs (Fornell & Larcker, 1981).

AVE measures the amount of variance captured by the construct, relative to measurement error variance (Fornell & Larcker, 1981), and was calculated using below formula:

$$AVE = \frac{\Sigma \text{ Standardised Loadings}^2}{\text{Number of Indicators}}$$

4.6.3 Reliability

Although previous use of the measurement instruments (scales) suggests that the Cronbach's alphas were above the minimum threshold, the scales were used under distinct circumstances. Reliability of the scales was therefore necessary to assess and confirm (Hair *et al*., 2019). The Cronbach's alphas for each construct were therefore measured. Cronbach's alpha values of 0.7 confirmed reliability of the scales, with higher values indicating greater reliability (Brown, 2015).

4.6.4 Model Fit

A structural model was built in SPSS Analysis of Moment Structures (Amos), as depicted in figure 3. It was assessed, to determine its predictive ability in testing the relationships between the latent variables (Hair *et al*., 2019; Collier, 2020). Four indicators were used, to assess model fit; the chi-square p-value, which measures the overall fit of the model, the comparative fit index (CFI), the root mean-square error (RMSEA) and the standardised root mean-square residuals (SRMR) (Hair *et al*., 2019). The model was considered fit when the chi-square p-value was greater than 0.05, CFI was greater than 0.90, the RMSEA and SRMR values were below 0.08.

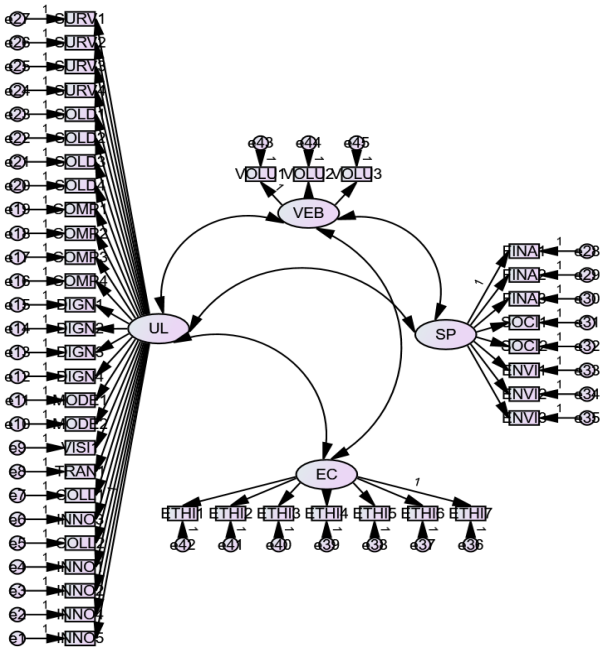

Figure 3: Initial Structural Model

4.6.5 Dimension Reduction

Following confirmation of the data's validity, reliability, and model fit, the remaining items were reduced, using oblique direct oblimin rotation (Blunch, 2012; Hair *et. al*., 2019). The data was first analysed for suitability for factor analysis, followed by factor extraction, and rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were first performed, to verify the data's suitability for factor analysis. KMO measured the extent to which the data correlates (Hair *et. al*., 2019). The test was set up to accept loadings of 0.3 and above, and an eigenvalue of 1 or more, using oblimin rotation. A KMO value of 0.6 or above and Bartlett's test significance of 0.05 or lower confirmed the data's suitability for factor analysis. Following confirmation of the data's suitability for factor analysis, components analysis was done, by inspecting the total variance explained, in order to determine components to use, as well as the factor loadings of items within the components. Items with loadings lower than 0.3 were removed.

Following confirmation of the extent of correlations between the factors, and confirmation that the data was suitable for an exploratory factor analysis, factor extraction was done. The principal axis factoring (PAF) with Kaiser normalisation was used to extract factors (Hair *et al*., 2019).

4.7 Hypotheses Testing

4.7.1 Multiple Linear Regression

Multiple linear regression is a statistical method for assessing the strength of the relationships between a number of variables (Hair *et al*., 2019). Using Pearson's multiple linear regression analysis, path coefficients within the model were analysed, to test the significance of the relationships between the variables. The significance of the relationships was determined by analysing the standard beta (β) value, standard deviation (STDEV), t statistics, and p-values. A β value and STDEV value greater than 0 confirmed the presence of a significant relationship, while the t-statistic value indicated the strength of the relationship and a p-value < 0.001 confirmed significance. A β value less than 0 indicated insignificant correlation.

Hierarchical regression analysis was done to test the possible effect of manufacturing company type that Gerbens-Leenes, Moll and Uiterkamp (2003) and Taghipour *et al*. (2022) suggested, had an impact on sustainable performance.

4.7.2 Mediation Analysis

A mediating variable acts as a facilitator of the relationship between constructs, and properties of the mediation are reflected in the results of its introduction, which are either not at all affective, partially affective, or fully affective (Jung & Takeuchi, 2019). Full mediation exists when the direct relationship between the independent variable(s) and the dependent variable(s) becomes insignificant when the effects of the mediating variable are controlled for (Baron & Kenny, 1986; Jung & Takeuchi, 2019). Where a significant direct relationship exists, when controlled for mediating effect, then partial mediation exists. For mediation to occur, there must be a significant direct relationship between all the constructs in the model (Baron & Kenny, 1986). Mediation analysis was performed, to test H_{2a}, H_{3b} and H_{4a}.

4.7.3 Assumptions of Multiple Linear Regression

There were test assumptions that had to be met before performing the regression analysis (Darlington & Hayes, 2017). These included the size of the sample, the normality of the data, multicollinearity, the presence of outliers in the dataset and the data's homoscedasticity. The sample size of 209 satisfied the assumption for a multiple linear regression analysis.

Multicollinearity is the correlation of two or more predictors (Daoud, 2017). When predictors are correlated, the standard error of the coefficients increases, and as a result, some independent variables' coefficients may be significantly different from zero, due to the standard errors being inflated. This also results in some variables being deemed statistically insignificant when they should be significant. Multicollinearity was therefore assessed, with every regression analysis done. Variance inflation factors (VIF) and the amount of variability (tolerance) were used to confirm the existence of collinearity issues. A VIF value of 1 suggested no correlation, while a value between 1 and 5 suggested moderate correlation and a value above 5 suggested high correlation (Daoud, 2017; Darlington & Hayes, 2017). Tolerance values less than 0.10 indicated collinearity.

4.8 Limitations

Quantitative research presents some limitations in data collection and analysis (Harrison, Reilly & Creswell, 2020). The limitations include bias, sample method and time constraints.

4.8.1 Bias

Individual perceptions were collected using an online survey instrument, and a degree of bias may have been present (Harrison, Reilly & Creswell, 2020), and this may reduce the findings' strength. In addition, it is recommended that missing data be deleted only when it accounts for less than 5% of the total data records (Hair *et al*., 2021; Schafer & Graham, 2002). In this study however, 8.5% of the data (1 095 of 12 879) was deleted, and this may increase the degree of bias.

4.8.2 Sample Method

Due to the lack of a sampling frame at the outset of the study, purposive non-probability and volunteer sampling techniques were used (Saunders & Lewis, 2017). These methods imply that some discretion was exercised in selecting participants who met the sampling criterion of being employed by South African manufacturing firms (Creswell & Creswell, 2017). These techniques therefore restricted the ability to generalise the findings to a larger population.

4.8.3 Time Constraints

This study utilised a cross-sectional design, due to time constraints. This means that the collected response data was based on employees' perceptions of their leaders at a point in time. A leader may have a change of heart and a change in behaviour over time, and that has not been factored for. Therefore, the selection of a cross-sectional study introduced bias into the results.

4.9 Conclusion

This chapter described the methodology selection and research design. It provided descriptive statistics of the sample population and outlined the statistical analysis techniques employed. Also presented, were statistical methods for testing the hypotheses. It concluded with a discussion of the limitations of the study. Chapter 5 presents the results of descriptive analysis, statistical analysis, and testing of hypotheses.

CHAPTER 5: RESULTS

5.1 Introduction

The results from the data collection and data analysis, for both descriptive and statistical analysis, are presented in Chapter 5.

5.2 Data Collection

The study aimed for no less than 200 responses, in order to meet the requirement of statistical significance (Hair *et al*., 2019). Three weeks following the circulation of the survey, only 46 responses had been received. Responses improved when the volunteer sampling technique was explored, after having posted the link to the survey on LinkedIn. At the time of closure of the survey, on 30 September 2022, 243 responses had been received.

5.3 Data Analysis

5.3.1 Data Preparation

Data was downloaded directly from SurveyMonkey, into Excel, for preparation. The data was stored in a secure, password-protected, cloud-based storage. To prepare for coding of the data, missing data were first dealt with. The data was coded, as shown in appendix 5.

5.3.2 Missing Data

Although all items of the survey were made mandatory to complete, there were missing values from 34 respondents from the raw data downloaded from Survey Monkey. Records from 23 of the 34 were missing from the section addressing ubuntu leadership, just after the section on demographics. The survey was initially designed to close off when the respondent did not report to a senior manager. One respondent alerted the researcher that the survey automatically closed after answering the demographic questions and therefore could not complete the survey, although they reported to a manager. The question was deleted from the survey, as it unintentionally

excluded employees reporting under any other level of management. The term senior manager was, in reflection, too restrictive. Managers at any level are considered leaders. Records from 3 of the 34 were missing from the section addressing sustainable performance. Records from 5 of the 34 were missing from the section addressing ethical climate and 2 of the 34 respondents did not complete the last section on voluntary employee behaviour. Participation in the survey was voluntary, with respondents given the option to withdraw at any time without penalty, therefore missing data could not have been completely avoided. Since a pattern however emerged, further analysis on the missing data was done, to confirm percentage of missing data. The results of the missing data are presented in Table 2.

Table 2: Missing Data

Missing Data	
Missing Records	1 095
Total Records	12 879
% Missing Records	8.50%

The one option of the two, considered in dealing with the missing data was to delete the missing data. Substitution of the missing values was not considered as it would have reduced the variability, as well as distort the distribution characteristics of the data. Although imputation by regression could have improved the variability of the data, it would have had to assume a lot of missing data at random, thus lead to implausible values. As there was no added benefit in imputation, but rather an increased bias potential, deletion was the preferred option (Chen *et al*., 2020).

Although Table 2 indicates that the missing data records were slightly higher than the recommended threshold of 5% or less, discretion was used to rather delete the missing data records. This decision was based on the large sample size that still remained (209), that allowed for statistical significance, and also because construct scores would not be affected (Hair *et al*., 2021). Following deletion of the missing data, data was coded, as indicated in appendix 5.

5.4 Descriptive Statistics

5.4.1 Sample Demographics

The data collected included the type of manufacturing company the respondents worked for, age, gender, race, level occupied in the organisation, tenure in the organisation, the size of the organisation and the organisation's age. The demographic profile of respondents is presented in Table 3.

Table 3: Demographics Profile of Respondents

Demographic Profile of Respondents (n = 209)			
Characteristics	Classifications	Frequencies	Percentage
Manufacturing Company Type	Automobile	16	8
	Chemical Products	56	27
	Rubber & Plastics	48	23
	Food & Beverages	61	29
	Textile, leather & footwear	1	0
	Iron, steel & metal	27	13
Age	18-24	1	1
	25-34	56	27
	35-44	90	43
	45-54	53	25
	55-64	9	4
Gender	Male	119	57
	Female	90	43
Race	African	114	55
	Coloured	11	5
	Indian	32	15
	White	46	22
	Other	6	3
Level in Organisation	Plant Worker	8	4
	Administration	21	10
	Junior	1	0
	Specialist/Technical	14	7
	Supervisor/Team Leader	13	6
	Middle Management	80	38
	Senior Management	67	32
	Other	5	2
Tenure in Organisation	<1 Year	15	7
	1-4 Years	60	29
	5-9 Years	70	33

	10-19 Years	46	22
	20+ Years	18	9
Size of Organisation	1-49 Employees	5	2
	50-199 Employees	27	13
	200+ Employees	177	85
Organisation Age	<1 Year	3	1
	1-4 Years	18	9
	5-9 Years	14	7
	10-19 Years	174	83

5.4.1.1 Manufacturing Company Type

Out of the 209 valid responses, 8% of respondents were from automobile companies, 27% from chemical products companies, 23% from rubber and plastics companies, 29% from food and beverages companies, less than a percentage from textile, clothing and footwear companies, and 13% from iron, metal and steel products companies. Figure 4 below depicts the number respondents, per type of manufacturing company.

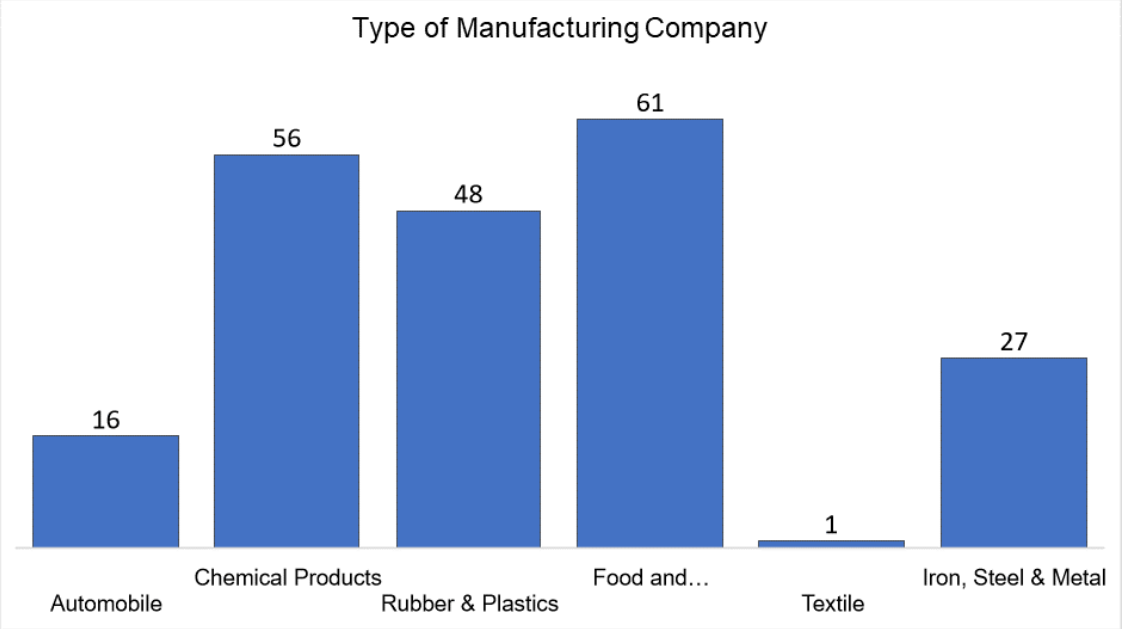

Figure 4: Manufacturing Company Types

The results of the hierarchical multiple regression analysis, wherein the type of manufacturing company was controlled, are shown in Table 4.

Table 4: Manufacturing Company Type; as a control variable

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.047[a]	.002	-.003	3.193	.002	.464	1	207	.496	
2	.336[b]	.113	.104	3.018	.111	25.740	1	206	<,001	
3	.607[c]	.369	.359	2.552	.256	83.026	1	205	<,001	1.909

a. Predictors: (Constant), Manufacturing Company Type

b. Predictors: (Constant), Manufacturing Company Type, UL

c. Predictors: (Constant), Manufacturing Company Type, UL, EC

d. Dependent Variable: SP

A hierarchical regression analysis was conducted, using manufacturing company type, ubuntu leadership and ethical climate as predictors of sustainable performance. The results revealed that there was not significant relationship between manufacturing company type and sustainable performance ($p = 0.50$). Significant change was observed to be brought about by both ubuntu leadership and ethical climate ($p < 0.005$). The R square change suggests that ubuntu leadership explains 11.3% of the variance in sustainable performance, while ethical climate explains 36.90% of the variance. It was inferred, from these results, that manufacturing company type had no significance on sustainable performance, it was the leadership and ethical climate within the organisation that did.

5.4.1.2 Age

Out of the 209 valid responses, less than a percentage were aged 18-24, 27% were aged 25-34, 43% were aged 35-44, 25% were aged 45-54, 4% were aged 55-64 and no responses were received from those aged 65+ years. Figure 5 depicts the age distribution, with the actual number of responses per age category.

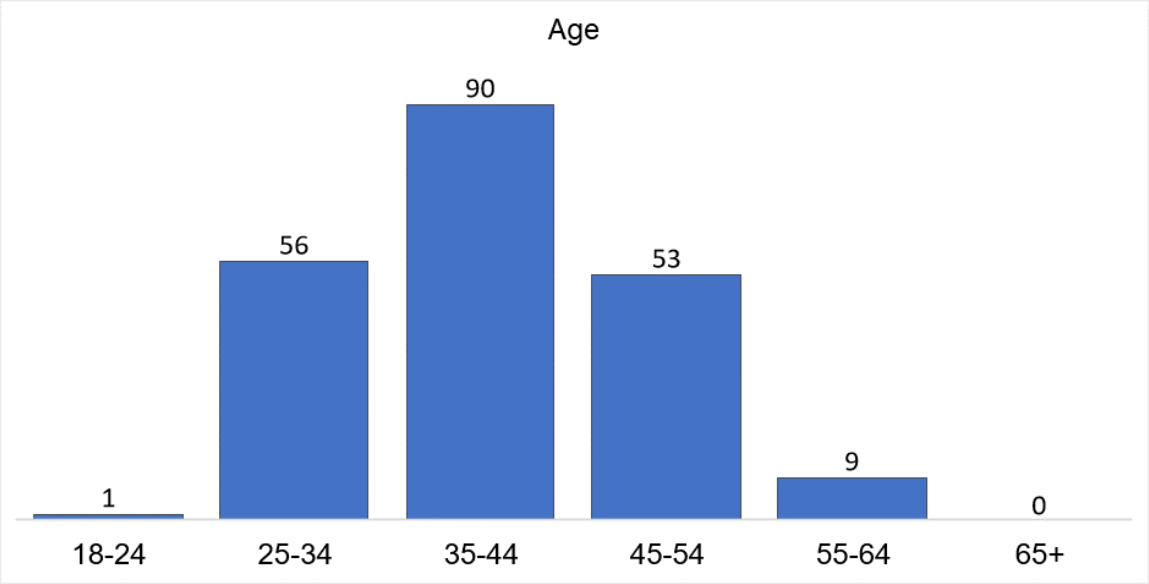

Figure 5: Age Distribution

5.4.1.3Gender

The question on gender demographics was categorised into three groups; male, female and prefer not to disclose. Out of the 209 valid responses, 57% were male and 43% were female, as depicted in figure 6.

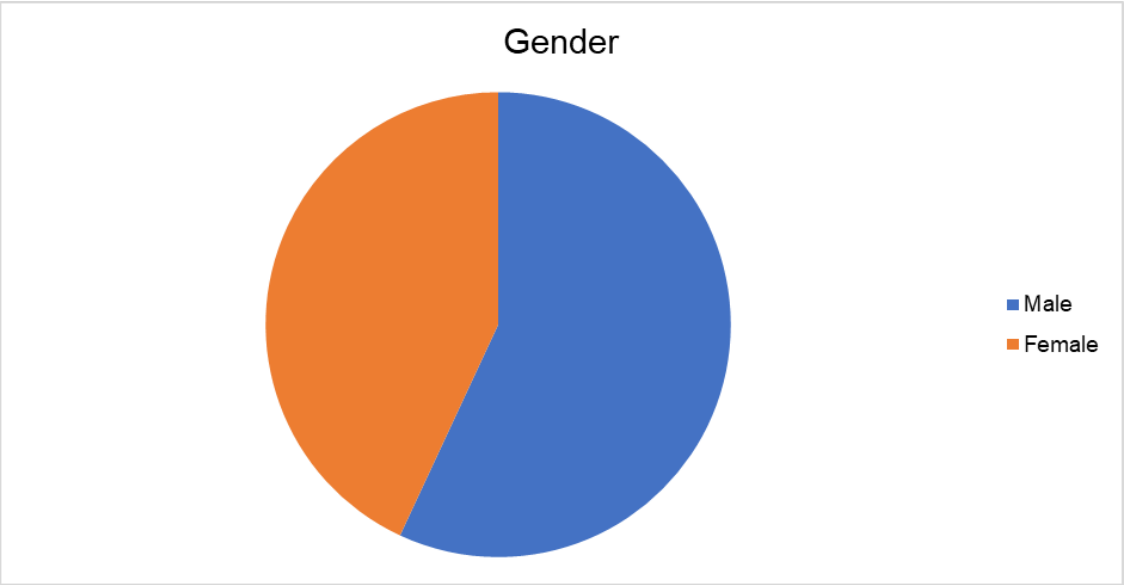

Figure 6: Gender Demographics

5.4.1.4 Race

The question on race was categorised into five groups; African, Coloured, Indian, White and other. Out of the 209 valid responses, 55% were African, 5% were Coloured, 15% were Indian, 22% were White, and 3% were other. Figure 7 depicts the race distribution, with the actual number of responses per race group.

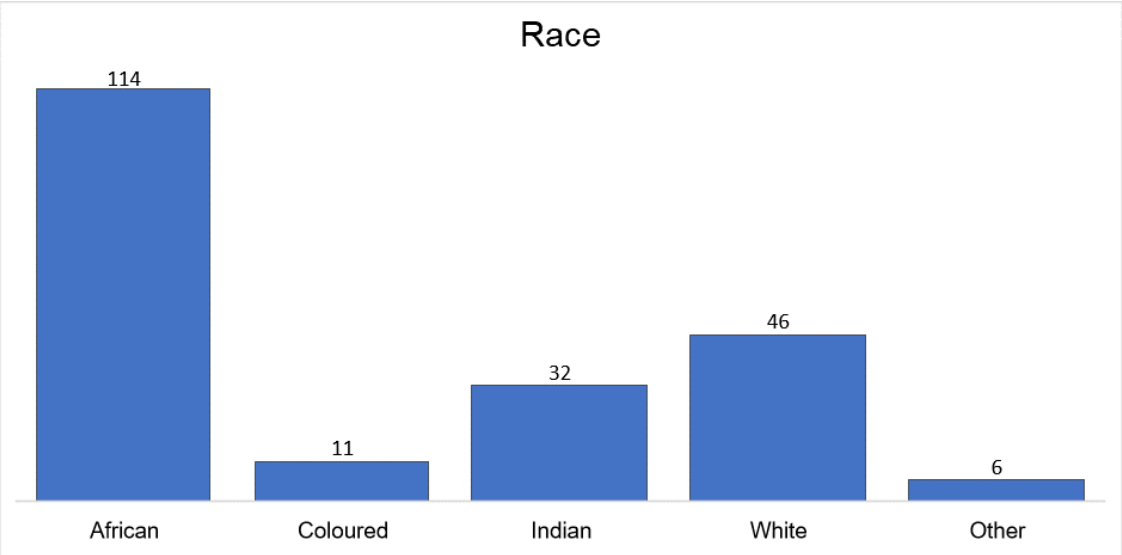

Figure 7: Race

5.4.1.5 Level in Organisation

The question on the level in the organisation, was categorised into eight groups; plant worker, administration, junior, specialist/technical, supervisor/team leader, middle management, senior management and other (with an option to specify). Out of the 209 valid responses, 4% were plant workers, 10% were at administrator level, 1% at junior level, 7% were at specialist or technical level, 6% at supervisor or team leader level, 38% at middle management level, 32% at senior management level and 2% did not specify. Figure 8 depicts the different levels the respondents occupied within the organisations, with actual numbers indicated.

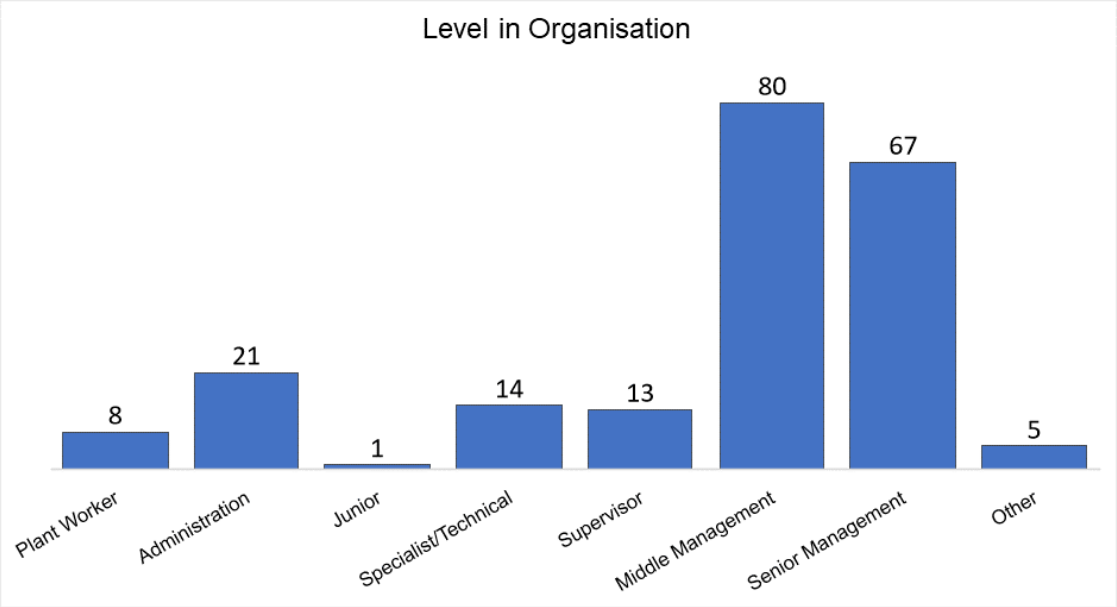

Figure 8: Level in Organisation

5.4.1.6 Tenure in Organisation

Respondents were asked the question about how long they have been working in the company, and the question was categorised into five groups; less than one year, 1-4 years, 5-9 years, 10-19 years, and 20+ years. Out of the 209 valid responses, 7% were with the organisation for less than one year, 29% were with the organisation for 1-4 years, 33% were with the organisation for 5-9 years, 22% were with the organisation for 10-19 years and 9% were with the organisation for 20 years and more. Figure 9 depicts the tenure in organisation, with actual numbers indicated.

Figure 9: Tenure in Organisation

5.4.1.7 Size of the Organisation

Respondents were asked a question about the size of the organisation they worked for, and the question was categorised into three groups; 1-49 employees, 50-199 employees and 200+ employees. Out of the 209 valid responses, 2% were working for a company with 1-49 employees, 13% were working for a company with 50-199 employees and 85% were working for a company with 200+ employees. Figure 10 depicts the different sizes of the organisations that the respondents worked for, with the actual numbers indicated.

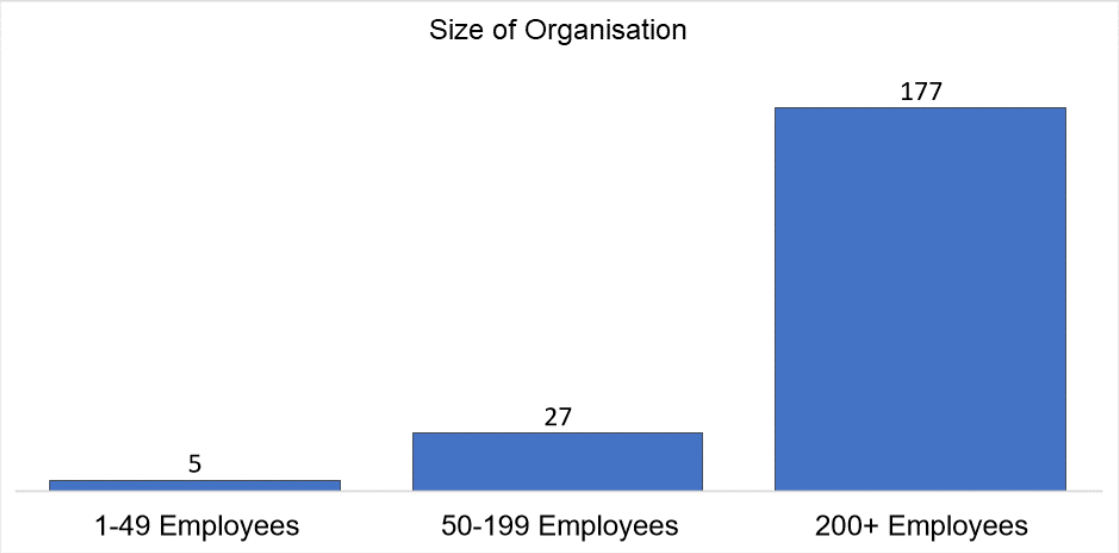

Figure 10: Size of Organisation

5.1.4.8 Organisation's Age

Respondents were asked about the age of their organisation, with the question divided into four categories: 1-4 years, 5-9 years, 10-19 years, and 20+ years. Out of the 209 valid responses, 1% was 1-4 years in existence, 9% were 1-4 years in existence, 7% were 5-9 years in existence and 83% were 20+ years in existence. Figure 11 depicts the different organisation ages, with the actual numbers indicated.

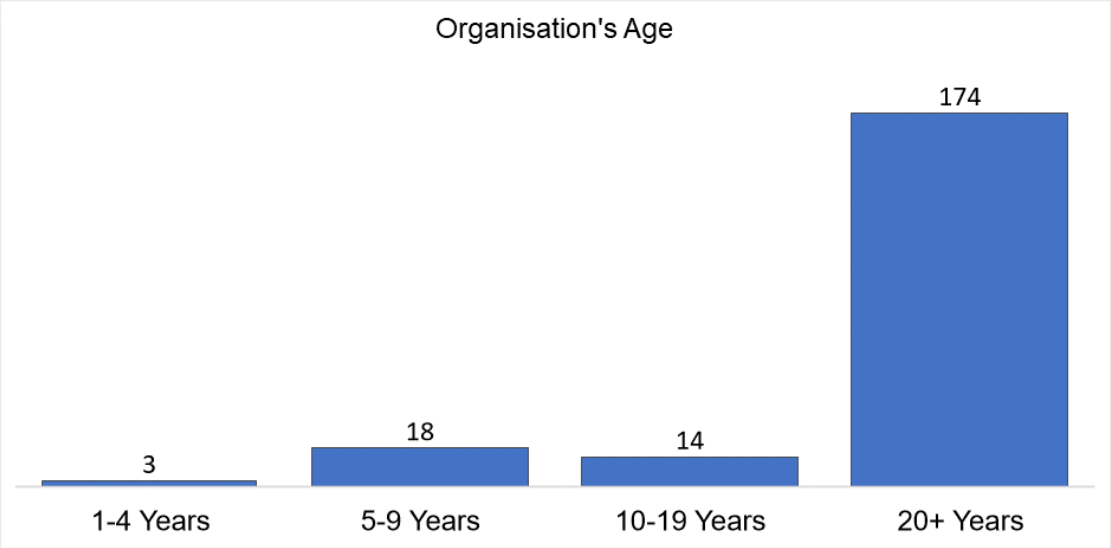

Figure 11: Organisation Age

5.4.2 Constructs Descriptive Statistics

The results of the descriptive statistics a presented per construct, although item statistics were also analysed, to gain better insight on the items.

Table 5: Descriptive Statistics_UL Construct

Statistics

ItemTotal_UL

N	Valid	209
	Missing	0
Mean		103.11
Median		108.00
Std. Deviation		23.769
Skewness		-.824
Std. Error of Skewness		.168
Kurtosis		.116
Std. Error of Kurtosis		.335
Minimum		29
Maximum		135

Table 5 illustrates that there were 209 participants in the study, the mean score for UL is 103.11 with a standard deviation of 23.77. Further analysis of the statistics per item, revealed that the measured variable with the highest mean score for the ubuntu leadership construct was SURV1, with a mean score of 4.53 and a standard deviation

of 0.83. COMP4 had the lowest mean score, with a mean of 3.33 and a standard deviation of 1.16.

Table 6: Descriptive Statistics_SP Construct

Statistics

ItemTotal_SP

N	Valid	209
	Missing	0
Mean		34.50
Median		35.00
Std. Deviation		4.027
Skewness		-.442
Std. Error of Skewness		.168
Kurtosis		-.449
Std. Error of Kurtosis		.335
Minimum		22
Maximum		40

Table 6 illustrates that there were 209 participants in the study, and the mean score for SP of 34.50, with a standard deviation of 4.03. Further analysis of the statistics per item, revealed that the measured variable that the measured variable with the highest mean score for the sustainable performance construct was SOCI2, with a mean score of 4.50 and a standard deviation of 0.62. FINA2 had the lowest mean score, with a mean of 3.99 and a standard deviation of 0.87.

Table 7: Descriptive Statistics_EC Construct

Statistics

ItemTotal_EC

N	Valid	209
	Missing	0
Mean		30.18
Median		31.00
Std. Deviation		4.231
Skewness		-.637
Std. Error of Skewness		.168
Kurtosis		-.487
Std. Error of Kurtosis		.335
Minimum		18
Maximum		35

Table 7 illustrates that there were 209 participants in the study, and the mean score for EC of 30.18, with a standard deviation of 4.23. Further analysis of the items revealed that the measured variables with the highest mean scores for the ethical climate construct were ETHI2 and ETHI3, each with a mean score of 4.52 and a standard deviation of 0.66 and 0.62, respectively. ETHI6 had the lowest mean score, with a mean of 4.01 and a standard deviation of 0.96.

Table 8: Descriptive Statistics_VEB Construct

Statistics

ItemTotal_VEB

N	Valid	209
	Missing	0
Mean		11.66
Median		12.00
Std. Deviation		2.286
Skewness		-.476
Std. Error of Skewness		.168
Kurtosis		.159
Std. Error of Kurtosis		.335
Minimum		5
Maximum		15

Table 8 illustrates that there were 209 participants in the study, and the mean score for VEB of 11.66, with a standard deviation of 2.29. Further analysis of the items revealed that the measured variable with the highest mean score for the voluntary environmental behaviour construct was VOLU2, with a mean score of 4.17 and a standard deviation of 0.75. VOLU3 had the lowest mean score, with a mean of 3.62 and a standard deviation of 0.99.

5.5 Statistical Analysis

5.5.1 Normality

The data's normality was assessed using skewness and kurtosis z-values, the Shapiro-Wilk test p-value and by visually assessing normal p-plots and scatter plots. The results for the skewness and kurtosis tests are presented in Table 9.

Table 9: Skewness and Kurtosis Test Results

Variables	Skewness			Kurtosis		
	Statistic	Std. Error	Z-value	Statistic	Std. Error	Z-value
SURV1	-2,508	0,168	-14,911	7,449	0,335	22,242
SURV2	-0,948	0,168	-5,632	0,340	0,335	1,014
SURV3	-0,973	0,168	-5,785	0,185	0,335	0,552
SURV4	-0,894	0,168	-5,314	0,128	0,335	0,383
SOLD1	-1,162	0,168	-6,908	1,026	0,335	3,062
SOLD2	-0,618	0,168	-3,675	-0,602	0,335	-1,796
SOLD3	-0,512	0,168	-3,046	-0,560	0,335	-1,673
SOLD4	-0,774	0,168	-4,601	-0,445	0,335	-1,328
COMP1	-0,849	0,168	-5,044	-0,037	0,335	-0,109
COMP2	-0,890	0,168	-5,291	-0,004	0,335	-0,012
COMP3	-0,793	0,168	-4,712	-0,140	0,335	-0,418
COMP4	-0,235	0,168	-1,395	-0,764	0,335	-2,282
DIGN1	-1,043	0,168	-6,198	0,208	0,335	0,622
DIGN2	-0,821	0,168	-4,879	-0,234	0,335	-0,698
DIGN3	-0,994	0,168	-5,911	0,264	0,335	0,789
DIGN4	-0,760	0,168	-4,518	-0,422	0,335	-1,260
MODE1	-0,691	0,168	-4,109	-0,596	0,335	-1,780
MODE2	-0,846	0,168	-5,026	-0,022	0,335	-0,066
VISI1	-0,727	0,168	-4,323	-0,416	0,335	-1,242
TRAN1	-0,609	0,168	-3,620	-0,567	0,335	-1,692
COLL1	-0,889	0,168	-5,287	0,097	0,335	0,290
INNO3	-0,941	0,168	-5,591	0,376	0,335	1,122
COLL2	-0,731	0,168	-4,348	-0,186	0,335	-0,555
INNO1	-0,693	0,168	-4,117	-0,360	0,335	-1,076
INNO2	-0,922	0,168	-5,481	0,231	0,335	0,688
INNO4	-1,138	0,168	-6,767	0,988	0,335	2,950
INNO5	-1,058	0,168	-6,289	0,780	0,335	2,330
FINA1	-1,099	0,168	-6,530	1,351	0,335	4,033
FINA2	-0,993	0,168	-5,905	1,251	0,335	3,736
FINA3	-1,088	0,168	-6,466	1,446	0,335	4,319
SOCI1	-1,354	0,168	-8,048	2,016	0,335	6,020
SOCI2	-0,963	0,168	-5,725	0,500	0,335	1,494
ENVI1	-1,560	0,168	-9,276	3,021	0,335	9,018
ENVI2	-1,266	0,168	-7,524	2,083	0,335	6,219
ENVI3	-1,075	0,168	-6,390	1,041	0,335	3,108
ETHI2	-1,235	0,168	-7,342	1,188	0,335	3,546
ETHI3	-1,056	0,168	-6,279	0,666	0,335	1,988
ETHI1	-1,304	0,168	-7,753	1,234	0,335	3,685

ETHI4	-1,180	0,168	-7,014	1,237	0,335	3,693
ETHI5	-0,753	0,168	-4,474	0,238	0,335	0,712
ETHI6	-0,823	0,168	-4,895	0,099	0,335	0,296
ETHI7	-1,440	0,168	-8,558	2,416	0,335	7,215
VOLU1	-0,714	0,168	-4,242	0,223	0,335	0,666
VOLU2	-1,043	0,168	-6,201	1,949	0,335	5,818
VOLU3	-0,151	0,168	-0,895	-1,012	0,335	-3,021

The results of the Shapiro-Wilk test are shown in Table 10.

Table 10: Shapiro-Wilk Test Results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FINA1	0,303	209	0,000	0,802	209	0,000
FINA2	0,299	209	0,000	0,818	209	0,000
FINA3	0,323	209	0,000	0,721	209	0,000
SOCI1	0,314	209	0,000	0,717	209	0,000
SOCI2	0,351	209	0,000	0,714	209	0,000
ENVI1	0,321	209	0,000	0,709	209	0,000
ENVI2	0,308	209	0,000	0,744	209	0,000
ENVI3	0,269	209	0,000	0,765	209	0,000
ETHI2	0,367	209	0,000	0,700	209	0,000
ETHI3	0,363	209	0,000	0,703	209	0,000
ETHI1	0,308	209	0,000	0,747	209	0,000
ETHI4	0,289	209	0,000	0,768	209	0,000
ETHI5	0,239	209	0,000	0,819	209	0,000
ETHI6	0,245	209	0,000	0,835	209	0,000
ETHI7	0,294	209	0,000	0,731	209	0,000
VOLU1	0,284	209	0,000	0,850	209	0,000
VOLU2	0,292	209	0,000	0,775	209	0,000
VOLU3	0,210	209	0,000	0,876	209	0,000
SURV1	0,371	209	0,000	0,591	209	0,000
SURV2	0,255	209	0,000	0,832	209	0,000
SURV3	0,257	209	0,000	0,828	209	0,000
SURV4	0,243	209	0,000	0,838	209	0,000
SOLD1	0,267	209	0,000	0,786	209	0,000
SOLD2	0,246	209	0,000	0,872	209	0,000
SOLD3	0,254	209	0,000	0,885	209	0,000
SOLD4	0,262	209	0,000	0,845	209	0,000
COMP1	0,264	209	0,000	0,847	209	0,000

COMP2	0,283	209	0,000	0,841	209	0,000
COMP3	0,267	209	0,000	0,855	209	0,000
COMP4	0,181	209	0,000	0,909	209	0,000
DIGN1	0,274	209	0,000	0,807	209	0,000
DIGN2	0,287	209	0,000	0,837	209	0,000
DIGN3	0,306	209	0,000	0,818	209	0,000
DIGN4	0,267	209	0,000	0,844	209	0,000
MODE1	0,265	209	0,000	0,848	209	0,000
MODE2	0,240	209	0,000	0,841	209	0,000
VISI1	0,260	209	0,000	0,852	209	0,000
TRAN1	0,271	209	0,000	0,870	209	0,000
COLL1	0,285	209	0,000	0,837	209	0,000
INNO3	0,322	209	0,000	0,826	209	0,000
COLL2	0,277	209	0,000	0,844	209	0,000
INNO1	0,265	209	0,000	0,862	209	0,000
INNO2	0,284	209	0,000	0,840	209	0,000
INNO4	0,304	209	0,000	0,804	209	0,000
INNO5	0,265	209	0,000	0,823	209	0,000

The skewness and kurtosis tests revealed that COMP4 and VOLU3 were the only items with normal distribution and that all other item responses were positively skewed. Only COMP4 and VOLU3 had z-values with the range -2.58 to +2.58. Responses to questions SURV1, SOLD1, FINA1, FINA2, FINA3, SOCI1, ENVI1, ENVI2, ENVI3, ETHI1, ETHI2, ETHI4, ETHI7, VOLU2 and VOLU3 displayed "peakedness", outside the acceptable range of -2.58 to +2.58. In terms of the Shapiro-Wilk test, all p-values are below 0.05. The null hypothesis for the Shapiro-Wilk test was thus rejected. The data was however accepted as a true reflection of the respondents' perceptions, and considered for further analysis. Although normality of the data was analysed, it would have made no substantial difference in the statistical analysis, due to the large sample size of this study (Hair *et al*., 2019; Tabachnick & Fidell, 2013).

5.5.2 Validity

Results of the average variance extracted (AVE) and squared AVE, for the purpose of determining both the convergent and discriminant validity are shown in Table 11 below:

Table 11: Average Variance Extracted (AVE) & Squared AVE Results

Average Variance Extracted (AVE) & Squared AVE Results		
	AVE	Squared AVE
UL	0.62	0.79
SP	0.61	0.78
EC	0.71	0.84
VEB	0.77	0.88

AVE for all constructs is > 0.5, therefore convergent validity was confirmed. Table 12 indicates the correlations between the latent variables:

Table 12: Squared AVE and Correlations Results

Squared AVE and Correlations				
UL	**0.79**			
SP	0.01	**0.78**		
EC	0.21	-	**0.84**	
VEB	0.09	0.08	0.09	**0.88**

All squared AVE were greater than the correlations between the laten variables. Discriminant validity was therefore confirmed.

5.5.3 Reliability

The reliability of the constructs was assessed based on the constructs' Cronbach's alphas. The Cronbach's alpha for the UL measurement scale is as depicted in Table 13.

Table 13: Cronbach's alpha_UL

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.978	.978	27

The Cronbach's alpha value of 0.978 suggests a very good internal consistency reliability for the scale measuring ubuntu leadership. However, from assessing the corrected item-total correlation, the item SURV1 "My manager expects me to assist colleagues during crises" had a value of 0.28 (less than the recommended minimum of 0.30). The item was removed, in pursuit for a good model fit. As a result, the Cronbach's alpha value changed to 0.98. The Cronbach's alpha for the SP measurement scale is as depicted in Table 14.

Table 14: Cronbach's alpha_SP

Reliability Statistics

Cronbach's Alpha	N of Items
.818	8

The Cronbach's alpha value of 0.82 suggests a very good internal consistency reliability for the scale measuring sustainable performance. Assessing the corrected item-total correlation, all items had a value above 0.30, indicating that the items were reliable to measure sustainable performance. The Cronbach's alpha for the EC measurement scale is as depicted in Table 15.

Table 15: Cronbach's alpha_EC

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.873	.878	7

The Cronbach's alpha value of 0.87 suggests a very good internal consistency reliability for the scale measuring ethical climate. Assessing the corrected item-total correlation, all items had a value above 0.30, indicating that the items were reliable to measure ethical climate. The Cronbach's alpha for the VEB measurement scale is as depicted in Table 16.

Table 16: Cronbach's alpha_VEB

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.828	3

The Cronbach's alpha value of 0.82 suggests a very good internal consistency reliability for the scale to measure voluntary environmental behaviour within this study. Assessing the corrected item-total correlation, all items had a value above 0.30, indicating that the items were reliable to measure voluntary environmental behaviour in this study's context. In summary, after deleting the one item SURV1, the measurement scales for all constructs were confirmed reliable.

5.5.4 Model Fit

Results from the model fit test are presented in Table 17.

Table 17: Model Fit Test Results

Model Fit Test Results					
Construct		Chi-square p-value	CFI	RMSEA	SRMR
	Threshold	> 0.05	> 0.90	< 0.08	< 0.08
UL		962.943	0.888	0.097	0.044
SP		293.946	0.646	0.257	0.134
EC		269.014	0.711	0.296	0.107
VEB		0.000	1.000	0.622	0.000

The CFI and RMSEA for UL were not within the acceptable threshold to consider the model fit as good. To try improve the model fit, SURV1, with an outer loading of 0.27 (less than the recommended minimum of 0.50), was removed, but the model was still not a good fit. The CFI, RMSEA and SRMR for SP were not within the acceptable threshold either, to consider the model fit as good. To try improve the model fit, FINA1, with an outer loading value of 0.32 and FINA2, with an outer loading value of 0.33,

were removed, but the model was still not a good fit. The CFI, RMSEA and SRMR for EC were also not within the acceptable threshold, to consider the model fit as good. All items within the construct had outer loading values larger than 0.50, therefore not attempt to try and improve the model fit was made. The chi-square p-value and RMSEA for VEB were not within acceptable threshold, therefore the model was also not a good fit. In conclusion, the model was not fit for generalising the study's findings to the larger population. This was one of the study's limitations.

5.5.5 Dimension Reduction

Prior to performing the factor analysis, suitability of the data for factor analysis was assessed. The KMO and Bartlett's Test results for the UL construct are shown in Table 18.

Table 18: KMO & Bartlett's Test Results_UL

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.973
Bartlett's Test of Sphericity	Approx. Chi-Square	5705.557
	df	325
	Sig.	.000

The KMO value of 0.97 and Bartlett's test significance of 0.000 confirmed the data's suitability for factor analysis. Furthermore, inspection of the correlation matrix revealed that all coefficients were above 0.30, supporting the factorability of the correlation matrix.

Principal components analysis revealed the presence of two components with eigenvalues exceeding 1, explaining 66.44% and 4.17% of the variance, respectively (a total of 70.61% of the variance). An inspection of the scree plot, shown in appendix 6, revealed a clear break after the first component. Based on the observation of the plot, it was decided to retain one component for further investigation. The one component solution explained 66.44% of the variance. To aid in the interpretation of the one component, oblimin rotation was performed. The results are shown in Table 19. There was a strong negative correlation between the two components (r = -0.72). The results of this analysis therefore, supported the use of component 1 items (Watson, Clark & Tellegen, 1988); meaning that items COMP2 "My manager is

sensitive to employees' personal problems", COMP3 "My manager empathises when employees are in pain", and SURV4 "My manager has deep concern for employees in times of difficulty" were removed. The unrotated loadings (component matrix) is included as appendix 7.

Table 19: Oblimin Rotation Factor Analysis Loadings_UL

Pattern Matrix			**Structure Matrix**		
	Component			Component	
	1	2		1	2
VISI1	1,005		MODE1	0,874	-0,690
COLL1	0,936		DIGN2	0,871	-0,803
COLL2	0,873		DIGN1	0,869	-0,714
TRAN1	0,837		DIGN3	0,857	-0,668
MODE2	0,825		DIGN4	0,856	-0,645
INNO3	0,817		INNO1	0,854	-0,795
DIGN4	0,816		INNO2	0,838	-0,672
MODE1	0,786		TRAN1	0,834	-0,601
DIGN3	0,784		COLL2	0,832	-0,574
DIGN1	0,740		MODE2	0,830	-0,603
INNO2	0,736		INNO3	0,828	-0,605
SOLD3	0,711		COLL1	0,809	-0,500
INNO4	0,688		VISI1	0,808	-0,453
SOLD1	0,653		INNO4	0,806	-0,661
SURV3	0,652		SOLD4	0,801	-0,727
INNO5	0,648		INNO5	0,788	-0,662
SURV2	0,645		SURV3	0,758	-0,618
DIGN2	0,608	-0,364	SOLD1	0,743	-0,596
INNO1	0,584	-0,373	SOLD3	0,726	-0,534
SOLD4	0,578	-0,309	SURV2	0,723	-0,575
COMP2		-0,871	COMP2	0,709	-0,928
SURV4		-0,835	COMP3	0,754	-0,908
COMP3		-0,760	COMP1	0,812	-0,860
SOLD2	0,358	-0,595	SOLD2	0,788	-0,854

COMP1	0,398	-0,573	SURV4	0,624	-0,850
COMP4	0,396	-0,481	COMP4	0,743	-0,767

KMO and Bartlett's Test results for the EC construct are shown in Table 20.

Table 20: KMO & Bartlett's Test Results_EC

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.782
Bartlett's Test of Sphericity	Approx. Chi-Square	891.048
	df	21
	Sig.	<,001

The KMO value of 0.78 and Bartlett's test significance of < 0.001 confirmed the data's suitability for factor analysis. Furthermore, inspection of the correlation matrix revealed that all coefficients, except ETHI6, were above 0.30, supporting the factorability of the correlation matrix.

Principal components analysis revealed the presence of two components with eigenvalues exceeding 1, explaining 57.98% and 16.19% of the variance, respectively (a total of 74.17% of the variance). Appendix 8, the scree plot, revealed a distinct break after the first component upon inspection. The decision was made to retain one component for further examination. The solution with one component explained 57.98% of the variance. For the purpose of facilitating the interpretation of the one component, oblimin rotation was performed. The results are shown in Table 21. There was a medium-strength negative correlation between the two components (r = -0.44). The results of this analysis supported the use of component 1 items (Watson, Clark & Tellegen, 1988); meaning that items ETHI2 "My company has a formal, written code of ethics" and ETHI3 "My company has policies regarding ethical behaviour" were removed. The unrotated loadings (component matrix) is included as appendix 9.

Table 21: Oblimin Rotation Factor Analysis Loadings_EC

Pattern Matrix			Structure Matrix		
	Component			Component	
	1	2		1	2
ETHI6	0,920		ETHI6	0,815	
ETHI1	0,779		ETHI1	0,810	-0,411
ETHI5	0,754		ETHI4	0,806	-0,647
ETHI7	0,712		ETHI5	0,791	-0,414
ETHI4	0,646	-0,365	ETHI7	0,779	-0,465
ETHI2		-0,965	ETHI2	0,400	-0,956
ETHI3		-0,891	ETHI3	0,498	-0,939

The KMO and Bartlett's Test results for the VEB construct are shown in Table 22.

Table 22: KMO & Bartlett's Test Results_VEB

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.700
Bartlett's Test of Sphericity	Approx. Chi-Square	241.948
	df	3
	Sig.	<,001

The KMO value of 0.70 and Bartlett's test significance of < 0.001 confirmed the data's suitability for factor analysis. Furthermore, inspection of the correlation matrix revealed that all coefficients were above 0.3, supporting the factorability of the correlation matrix.

Principal components analysis revealed the presence of one component with an eigenvalue exceeding 1, explaining 74.45% of the variance. The one component was used as it was, for further investigation. The results are shown in Table 23.

Table 23: Component Matrix_VEB

Component Matrix[a]

	Component 1
VOLU1	.895
VOLU2	.871
VOLU3	.820

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

For statistical analysis, the constructs excluded the removed items.

5.6 Hypotheses Testing

Regression analysis was performed, to explore the relationships between the variables. Prior to the hypotheses being tested, violation of assumptions was checked, followed by evaluation of the model and finally evaluation of the variables. The assumption of adequate size of sample was not violated, as a sample size of 209 was used. All other assumptions were checked, per model in hypothesis testing, particularly for the bivariate regression analysis.

5.6.1 Hypothesis 1

H_1: Ubuntu leadership has a direct positive influence on sustainable performance

5.6.1.1 Checking for assumptions

Table 24 was assessed, to check for violation of the assumption of multicollinearity. Normal p-plots and scatter plots are included as appendix 10 and appendix 11, respectively.

Table 24: Correlation Coefficients_UL-SP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	21.640	.897		24.113	<,001	19.870	23.409		
	ItemTotal_UL	.051	.010	.332	5.061	<,001	.031	.070	1.000	1.000

a. Dependent Variable: ItemTotal_SP

The VIF value of 1.00 and tolerance value of 1.00 indicates the absence of collinearity. Assessing the normal p-plot, there were no significant departures from normality, because the points in the normal p-plot are located along a pretty straight diagonal line. The scatterplot's residuals are nearly rectangularly distributed and no unusual pattern exists, therefore the assumption of no outliers and no homoscedasticity was not violated

5.6.1.2 Model Evaluation

Table 25 and Table 26 were assessed to establish whether a relationship exists between UL and SP, and if it was significant.

Table 25: Model Summary_UL-SP

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.332[a]	.110	.106	3.016	.110	25.615	1	207	<,001

a. Predictors: (Constant), ItemTotal_UL

b. Dependent Variable: ItemTotal_SP

Table 26: ANOVA Results_UL-SP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	232.932	1	232.932	25.615	<,001[b]
	Residual	1882.379	207	9.094		
	Total	2115.311	208			

a. Dependent Variable: ItemTotal_SP

b. Predictors: (Constant), ItemTotal_UL

The results indicate a Pearson's correlation coefficient *r*, of 0.33. This indicates that there is a positive relationship between UL and SP, and the relationship is significant ($p < 0.001$). Furthermore, the R square value of 0.11 suggests that the model explains 11% of the variance of SP. Also noted, from Table 24, was that UL's lower bound, at a 95% confidence level, is 0.03 and its higher bound is 0.07. These results led to the inference that a positive relationship between UL and SP exists, and UL predicts SP. H_1, was therefore accepted.

5.6.2 Hypothesis 2

Hypothesis 2_a

H_{2a}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance.

Model 4 of Process v4.1 in SPSS was used to investigate the mediating effect of EC on the relationship between UL and SP. The results are presented in Table 27, Table 28, Table 29, with the rest of the model output appended as appendix 12.

Table 27: Total Effect of UL on SP

Total effect of UL on SP						
Effect	se	t	p	LLCI	ULCI	c_cs
0.051	0.010	5.061	0.000	0.031	0.070	0.332

Table 28: Direct Effect of UL on SP

Direct effect of UL on SP						
Effect	se	t	p	LLCI	ULCI	c'_cs
0.003	0.010	0.350	0.727	-0.16	0.023	0.023

Table 29: Indirect Effect of UL on SP

Indirect effect of UL on SP				
	Effect	BootSE	BootLLCI	BootULCI
EC	0.047	0.008	0.033	0.064

The results revealed a significant indirect effect of ubuntu leadership on sustainable performance (b = 0.05, t = 5.06). Furthermore, in the presence of a mediator, the direct effect of ubuntu leadership on sustainable performance, was found to be insignificant (b = 0.00, p = 0.73). This implies that ethical climate fully mediates the relationship between ubuntu leadership and sustainable performance. It was then inferred, that EC fully mediates the relationship between UL and SP. H_{2a} was therefore, accepted.

Hypothesis H_{2b}

H_{2b}: Ubuntu leadership positively influences ethical climate.

5.6.2.1 Checking for assumptions

Table 30 was assessed, to check for violation of the assumption of multicollinearity. Normal p-plots and scatter plots are included as appendix 13 and appendix 14, respectively.

Table 30: Correlation Coefficients_UL-EC

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	13.607	.876		15.541	<,001	11.880	15.333		
	ItemTotal_UL	.086	.010	.524	8.851	<,001	.067	.106	1.000	1.000

a. Dependent Variable: ItemTotal_EC

The VIF value of 1.00 and tolerance value of 1.00 indicates the absence of collinearity. Assessing the normal p-plot, there were no significant departures from normality, because the points in the normal p-plot are located along a pretty straight diagonal line. The scatterplot's residuals are nearly rectangularly distributed and no unusual pattern exists, therefore the assumption of no outliers and no homoscedasticity was not violated.

5.6.2.2 Model Evaluation

Table 31 and Table 32 were assessed, to establish whether a relationship exists between UL and EC, and if it was significant.

Table 31: Model Summary_UL-EC

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.524[a]	.275	.271	2.942	.275	78.336	1	207	<,001

a. Predictors: (Constant), ItemTotal_UL

b. Dependent Variable: ItemTotal_EC

Table 32: ANOVA Results_UL-EC

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	678.026	1	678.026	78.336	<,001[b]
	Residual	1791.668	207	8.655		
	Total	2469.694	208			

a. Dependent Variable: ItemTotal_EC

b. Predictors: (Constant), ItemTotal_UL

The results indicate a Pearson's correlation coefficient *r*, of 0.52. This signifies that there is a positive relationship between UL and EC, ad it is significant ($p < 0.001$). Furthermore, the R square value of 0.28 suggests that the model explains 27.5% of the variance of EC. It was also noted that UL's lower bound, at a 95% confidence level, is 0.07 and its higher bound is 0.11. These results indicate that a positive relationship between UL and EC exists, and that UL predicts EC. H_{2b}, was therefore accepted.

5.6.3 Hypothesis H_3

Hypothesis H_{3a}

H_{3a}: Ethical climate positively influences voluntary environmental behaviour.

5.6.3.1 Checking for assumptions

Table 33 was assessed, to check for violation of the assumption of multicollinearity. Normal p-plots and scatter plots are included as appendix 15 and appendix 16, respectively.

Table 33: Correlation Coefficients_EC-VEB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6.165	.909		6.782	<,001	4.373	7.957		
	ItemTotal_EC	.260	.042	.391	6.119	<,001	.176	.343	1.000	1.000

a. Dependent Variable: ItemTotal_VEB

The VIF value of 1.00 and tolerance value of 1.00 indicates the absence of collinearity. Assessing the normal p-plot, there were no significant departures from normality, because the points in the normal p-plot are located along a pretty straight diagonal line. The scatterplot's residuals are nearly rectangularly distributed and no unusual pattern exists, therefore the assumption of no outliers and no homoscedasticity was not violated.

5.6.3.2 Model Evaluation

Table 34 and Table 35, were assessed to establish whether a relationship between EC and VEB exists, and if it was significant.

Table 34: Model Summary_EC-VEB

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.391[a]	.153	.149	2.109	.153	37.446	1	207	<,001

a. Predictors: (Constant), ItemTotal_EC

b. Dependent Variable: ItemTotal_VEB

Table 35: ANOVA Results_EC-VEB

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.543	1	166.543	37.446	<,001[b]
	Residual	920.653	207	4.448		
	Total	1087.196	208			

a. Dependent Variable: ItemTotal_VEB

b. Predictors: (Constant), ItemTotal_EC

The results indicate a Pearson's correlation coefficient *r*, of 0.39. This indicates that there is a positive relationship between EC and VEB, and it is significant ($p < 0.001$). Furthermore, the R square value of 0.15 suggests that the model explains 15.3% of the variance of VEB. It was further noted, that EC's lower bound, at a 95% confidence level, is 0.18 and its higher bound is 0.34. The results indicate that a positive relationship between EC and VEB exists, and that EC predicts VEB. H_{3a}, was therefore accepted

Hypothesis H_{3b}

H_{3b}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and voluntary environmental behaviour.

Model 4 of Process v4.1 in SPSS was used to investigate the mediating effect of EC on the relationship between UL and VEB. The results are presented in Table 36, Table 37, Table 38, with the rest of the model output appended as appendix 17.

Table 36: Total Effect of UL on VEB

Total effect of UL on VEB						
Effect	se	t	p	LLCI	ULCI	c_cs
0.025	0.007	3.345	0.001	0.010	0.039	0.226

Table 37: Direct Effect of UL on VEB

Direct effect of UL on VEB						
Effect	se	t	p	LLCI	ULCI	c'_cs
0.003	0.008	0.391	0.696	-0.13	0.019	0.029

Table 38: Indirect Effect of UL on VEB

Indirect effect of UL on VEB				
	Effect	BootSE	BootLLCI	BootULCI
EC	0.022	0.005	0.012	0.033

The results revealed a significant indirect effect of ubuntu leadership on voluntary environmental behaviour (b = 0.02, t = 3.35). Furthermore, in the presence of a mediator, the direct effect of ubuntu leadership on voluntary environmental behaviour, was found to be insignificant (b = 0.00, p = 0.70). This implies that ethical climate fully mediates the relationship between ubuntu leadership and voluntary environmental behaviour. It was then inferred, that EC fully mediates the relationship between UL and VEB. H_{3b} was therefore, accepted.

5.6.4 Hypothesis H_4

Hypothesis H_{4a}

H_{4a}: Voluntary environmental behaviour has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance.

Model 4 of Process v4.1 in SPSS was used to investigate the mediating effect of VEB on the relationship between UL and SP. The results are presented in Table 39, Table 40, Table 41, with the rest of the model output appended as appendix 18.

Table 39: Total Effect of UL on SP

Total effect of UL on SP						
Effect	se	t	p	LLCI	ULCI	c_cs
0.051	0.010	5.061	0.000	0.031	0.070	0.332

Table 40: Direct Effect of UL on SP

Direct effect of UL on SP						
Effect	se	t	p	LLCI	ULCI	c'_cs
0.038	0.009	3.964	0.000	0.019	0.056	0.246

Table 41: Indirect Effect of UL on SP

Indirect effect of UL on SP				
	Effect	BootSE	BootLLCI	BootULCI
VEB	0.013	0.005	0.005	0.024

The results revealed an insignificant indirect effect of ubuntu leadership on sustainable performance (BootLLCI – BootSE = 0). Furthermore, in the presence of a mediator, the direct effect of ubuntu leadership on sustainable performance, was found to be significant (b = 0.04, p < 0.001). It was then inferred, that voluntary environmental behaviour does not mediate the relationship between ubuntu leadership and sustainable performance, as the indirect effect was insignificant. H_{4a} was therefore, rejected.

Hypothesis 4b

H_{4b}: Voluntary environmental behaviour positively influences sustainable performance

5.6.4.1 Checking for assumptions

Table 42 was assessed, to check for violation of the assumption of multicollinearity. Normal p-plots and scatter plots are included as appendix 19 and appendix 20, respectively.

Table 42: Correlation Coefficients_VEB-SP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	19.012	1.038		18.321	<,001	16.967	21.058		
	ItemTotal_VEB	.604	.087	.433	6.918	<,001	.432	.777	1.000	1.000

a. Dependent Variable: ItemTotal_SP

The VIF value of 1.000 and tolerance value of 1.000 indicates the absence of collinearity. Assessing the normal p-plot, there were no significant departures from normality, because the points in the normal p-plot are located along a pretty straight diagonal line. The scatterplot's residuals are nearly rectangularly distributed and no

unusual pattern exists, therefore the assumption of no outliers and no homoscedasticity was not violated.

5.6.4.2 Model Evaluation

Table 43 and Table 44 were assessed, to determine whether a relationship between VEB and SP exists, and if it was significant.

Table 43: Model Summary_VEB-SP

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.433[a]	.188	.184	2.881	.188	47.854	1	207	<,001

a. Predictors: (Constant), ItemTotal_VEB

b. Dependent Variable: ItemTotal_SP

Table 44: ANOVA Results_VEB-SP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	397.191	1	397.191	47.854	<,001[b]
	Residual	1718.120	207	8.300		
	Total	2115.311	208			

a. Dependent Variable: ItemTotal_SP

b. Predictors: (Constant), ItemTotal_VEB

The results indicate a Pearson's correlation coefficient *r*, of 0.43. This signifies that there is a positive relationship between VEB and SP. Furthermore, the R square value of 0.19 suggests that the model explains 18.8% of the variance of SP. This is a statistically significant contribution, with $p < 0.001$. Furthermore, it was noted that VEB's lower bound, at a 95% confidence level, is 0.43 and its higher bound is 0.78. The results indicate that a positive relationship between VEB and SP exists, and VEB is a significant predictor of SP. H_{4b}, was therefore accepted.

5.6.5 Hypothesis 4c

H_{4c}, ubuntu leadership positively influences voluntary environmental behaviour.

5.6.5.1 Checking for assumptions

As discussed in Chapter 4, the assumption of adequate size of the sample was not violated. Table 45 was assessed, to check for violation of the assumption of multicollinearity. Normal p-plots and scatter plots are included as appendix 21 and appendix 22, respectively.

Table 45: Correlation Coefficients_UL-VEB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	9.494	.664		14.292	<,001	8.185	10.804		
	ItemTotal_UL	.025	.007	.226	3.345	<,001	.010	.039	1.000	1.000

a. Dependent Variable: ItemTotal_VEB

The VIF value of 1.000 suggests no correlation and the tolerance value of 1.000 indicates the absence of collinearity. Assessing the normal p-plot, there were no significant departures from normality, because the points in the normal p-plot are located along a pretty straight diagonal line. The scatterplot's residuals are nearly rectangularly distributed and no unusual pattern exists, therefore the assumption of no outliers and no homoscedasticity was not violated

5.6.5.2 Model Evaluation

Table 46 was assessed, to evaluate whether a relationship between UL and VEB exists, and if it was significant.

Table 46: Model Summary_UL-VEB

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.226[a]	.051	.047	2.232	.051	11.187	1	207	<,001

a. Predictors: (Constant), ItemTotal_UL

b. Dependent Variable: ItemTotal_VEB

Table 47: ANOVA Results_UL-VEB

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.742	1	55.742	11.187	<,001[b]
	Residual	1031.454	207	4.983		
	Total	1087.196	208			

a. Dependent Variable: ItemTotal_VEB

b. Predictors: (Constant), ItemTotal_UL

The results indicate a Pearson's correlation coefficient *r*, of 0.23. This indicates that there is a positive relationship between UL and VEB, and it is significant ($p < 0.001$). Furthermore, the R square value of 0.05 suggests that the model explains 5.1% of the variance of VEB. In addition, it was noted that UL's lower bound, at a 95% confidence level, is 0.01 and its higher bound is 0.04. The results indicate that a positive relationship between UL and VEB SP exists, and UL is a significant predictor of VEB. H_{4c}, was therefore accepted.

5.7 Summary of Results

Table 48 provides a summary of the results.

Table 48: Summary of Results

Section	Sub-Section	Summary of Results
Data collection		The raw sample consisted of 243 respondents. Following data cleaning, the final sample size was 209.
Data Analysis	Data Preparation	Data was downloaded from SurveyMonkey, into Excel, for coding, in preparation for analysis.
	Missing Data	8.5% of missing data was deleted.
Descriptive Statistics	Sample Demographics	Majority of responses came from the food and beverages manufacturing companies, those aged 35-44, males, African, working at middle management level, those who have been with the organisations 5-9 years, working for organisations with 200+ employees and the companies have been in existence for 20+ years.
Statistical Analysis	Normality	The Skewness and Kurtosis results indicated that the data was not normally distributed. Visual assessment of the normal p-plots and scatter plots

		however confirmed the data distribution as acceptable.
	Validity & Reliability	The measurement scales used, were all reliable, with Cronbach's alphas as follows; UL: 0.98 SP: 0.82 EC: 0.87 VEB: 0.82
	Dimension Reduction	8 items, in total, were reduced, as a result of PAF.
	Structural Model Fit	The model was found to not be a good fit for generalisation of findings to the entire population.
Hypotheses Testing	H_1	Accepted
	H_{2a}	Accepted
	H_{2b}	Accepted
	H_{3a}	Accepted
	H_{3b}	Accepted
	H_{4a}	Rejected
	H_{4b}	Accepted
	H_{4c}	Accepted

5.8 Conclusion

The results of the data collection process and data analysis were presented in Chapter 5. This included presentation of descriptive statistics, statistical analysis and hypotheses testing results. The results are further summarised in Table 48. Chapter 6 provides a discussion of the results.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

Chapter 6 provides a discussion of the findings. It focuses on the results of the statistical analysis conducted in Chapter 5, together with discussions from chapter 2. It includes a discussion on the sample demographics, followed by descriptive statistics for each latent construct and lastly, results and findings of the hypotheses tested.

As indicated in chapter 5, data was collected through self-administered surveys from individuals working for manufacturing companies in South Africa. A total of 243 responses were received, achieving the target of no less than 200 responses. Following data clean-up however, a final sample size of 209 was used for statistical analysis. This sample size was considered large enough and suitable to perform descriptive and inferential statistical analysis (Hair *et al*., 2012).

6.2 Statistical Analysis

Considering the large sample size used in this study, the “non-normal” distribution of the data was acceptable and considered a true reflection of the respondents’ perceptions (Hair *et al*, 2019). Principal axis factoring with Kaiser normalisation was used to extract factors, reducing a total of eight items, across the four latent constructs; four from the ubuntu leadership construct, two from the sustainable performance construct and two from the ethical climate construct. The deletion of items within constructs supports the argument that theory evolves with time and can be contextually applied (Biglan, 2018).

The structural model was not fit for generalising the study's findings to the larger population, as would be expected with the use of non-probability sampling techniques (Collier, 2020; Hair *et al*., 2019). Zhang and Wei (2021) obtained poor fit indices on one of the models used in their study on the mediating role of environmental performance, on the relationship between SME’s charismatic leadership and financial performance, however went on to successfully conduct statistical analysis, using regression analysis, and make two major contributions to literature

6.3 Sample Demographics

Out of the individuals that responded, majority of them (29%) worked for food and beverages manufacturing companies, followed by 27% from chemical products companies, 23% from rubber and plastics companies, 13% from iron, metal and steel products companies and less than a percentage from textile, clothing and footwear companies. Gerbens-Leenes, Moll and Uiterkamp (2003) and Taghipour *et al*. (2022) had suggested, that manufacturing company-type has an impact on sustainable performance. A hierarchical regression analysis was conducted to test that theory. The results revealed that the relationship between manufacturing company type and sustainable performance was insignificant.

The sample comprised of 43% respondents aged 35-44, followed by 27% between the ages 25-34, and 25% between the ages 45-54. On gender, 57% of the sample was male and 43% female. On race, Africans were the most respondents, followed by White, Indian, Coloured and others. The participants occupied various levels in the organisations they worked for, from junior level, to executive management level. The sample is well-representative of South African demographics, both from a race perspective and a workforce perspective (Stats SA, 2021).

6.4 Ubuntu Leadership

The dimensions of UL, evolved with time, since the late 1980s. UL emerged from what was once a philosophical stance within the setting of postcolonialism in South Africa (Asante, 1987) to a leadership philosophy (Mbigi, 1997). Chinkanda (1990) defined it as a distinctive African humanism characterised by empathy, care, sensitivity to the needs of others, respect, compassion, and kindness. It began with survival and human dignity as its key dimensions. By the late 1990s, four main ubuntu leadership dimensions had developed and were used to measure ubuntu; survival, solidarity, compassion and dignity and respect. Prinsloo (2000) however critically assessed the inclusion of survival as a dimension of ubuntu leadership, arguing that the word survival in itself encouraged some form of competition between those who are resource-rich and those who are poverty-stricken, and should rather be replaced by the concept of love. It is the researcher's argument that perhaps survival needs to be understood in the context of collective-survival, rather than that which Prinsloo

(2000) argued against. Survival should not be viewed through the lens of being competitive, but rather as a collective concept. This is supported by the study's results, where at least two items of survival presented validity for being measured under the construct.

Four items under the ubuntu leadership construct were removed, due to their factor loading of < 0.30 (Hair *et al*., 2019). SURV1 "My manager expects me to assist colleagues during crises" and SURV4 "My manager has deep concern for employees in times of difficulty", were two of the four items removed; both from the survival dimension. Ironically, SURV1 scored the highest under the ubuntu leadership construct, with a mean of 4.53. Overall, the UL construct had a mean score of 103.11, with a standard deviation of 23.77.

Survival involves having concern for others and seeking to assist them (Poovan, Du Toit & Engelbrecht, 2006). Considering Prinsloo's (2000) critical view on the inclusion of survival as a dimension of ubuntu leadership, the researcher expected to see items under survival score the least. The researcher supports the inclusion of survival, as a dimension of ubuntu leadership, appreciating survival to be in the context of collective survival, and not the individualistic and competitive type that Prinsloo (2000) suggested. Survival, in this context, is not a competition between those who are resource-rich and those who are poverty-stricken. South Africans can best understand survival, in the same breath that the perseverance of black South Africans, during the apartheid regime had (Poovan, Du Toit and Engelbrecht (2006). The researcher posits that the respondents, majority of whom are African, understood survival, in African terms, as collective survival and not one of competitive nature.

COMP4 "My manager is willing to sacrifice self-desires for the benefit of others", scored the lowest, with a mean of 3.33, while COMP2 "My manager is sensitive to employees' personal problems", and COMP3 "My manager empathises when employees are in pain" were removed, based on their low factor loadings. Mindful of the pain and difficult times, not just South Africa, but the world recently went through, with the COVID-19 pandemic, the researcher expected to see compassion score in the higher range. Brubaker (2013) argued that the greatest measure of compassion is a leader's willingness to go the extra mile to assist others, their level of sensitivity towards employees' personal problems, their ability to empathise when employees are in pain, and their willingness to sacrifice self-desires for the benefit of others.

Although still above average, a higher score was expected. If there was any period that best awakened compassion in leaders, it had to be the “COVID-19 period”.

Ncube (2010) introduced new dimensions of ubuntu leadership, which included modelling the way, vision-sharing, transparency, collectivism and innovation. This study adopted the position of the many scholars who used survival, solidarity, compassion and dignity and respect to measure ubuntu (Brubaker, 2013; Lutz, 2009; Mangaliso, 2001; Mbigi, 1997; Muchiri, 2011 & Poovan *et al*., 2006), but also included Ncube’s (2010) dimensions. A Cronbach’s alpha value of 0.98 indicated the reliability of the measurement instrument. Following these findings, the researcher supports the inclusion of these dimensions, in measuring ubuntu leadership. Modelling the way, vision-sharing, transparency, collectivism and innovation are other dimensions that need to be considered when measuring ubuntu leadership (Ncube, 2010).

The researcher expected an “above average” scores for INNO4 “My manager allows employees to take initiative” and INNO5 “My manager encourages innovation”, as that would imply that leaders in this sample group, encouraged innovation. The score is not low; however, a better score was expected. Metz (2018) had been sceptical about innovation and its compatibility with ubuntu leadership. The results, particularly the reliability of the item as one of the items that measure ubuntu leadership, is an indication that encouraging innovation could help achieve sustainable performance. Historically, organisational performance was measured based on its financial performance (Chin, Tat & Sulaiman, 2015). The results confirm, that measuring organisational performance based on financial performance, is a thing of the past.

6.5 Sustainable Performance

Two items under the sustainable performance construct were removed, due to their factor loading of < 0.30, FINA1 “My company is growing in sales and profit” and FINA2 “My company is financially efficient”, both from the financial performance dimension. Only one item under the financial performance dimension remained, as it had a good factor loading > 0.60, and that was FINA3 “My company has a good reputation and a valuable brand”. A Cronbach’s alpha value of 0.82 confirmed that the instrument used was reliable for use. The deletion of the two items supports the notion by Chin, Tat and Sulaiman (2015) that measuring organisational performance based on its

financial performance, is historic. The items indicated not to measure what they were intended to measure in this study. Overall, the mean score for SP was 34.50, with a standard deviation of 4.03.

The item SOCI2 “My company has a policy to respect business ethics”, measured the highest, with a mean score of 4.50. This item measured organisations’ social performance. Considering the SDG sustainability agenda, and the drive for organisations to achieve sustainability goals, and be good corporate citizens, the researcher expected this high score. Organisations are expected to build value for all stakeholders, and this includes societies within which they operate (Székely and Knirsch, 2005). The researcher also expected to, based on the pressure placed on organisations to achieve sustainability, see a high score for SOCI1” My company has a policy to strive to be a good corporate citizen”, and indeed the score was high, with a mean of 4.42.

On environmental performance, all three items achieved high scores. ENV1 “My company takes initiative to reduce, reuse, and recycle waste”, with a mean score of 4.43, ENV2 “My company takes initiative to reduce the negative environmental impact of the products it manufactures”, with a mean score of 4.39, and ENV3 “My company takes initiative to improve energy efficiency at work”, with a mean score of 4.30. The increase in sustainable performance consciousness is evident (Henao, Sarache & Gómez, 2019). Significant focus is being paid to sustainable performance (Yong, Yusliza & Fawehinmi, 2019). Sustainable performance also considers the ethical practices and trade-offs between economic, environmental, and social performance (Crane *et al*., 2022). Meaning that organisations are expected to adopt ethical practices while building value for all stakeholders (Székely and Knirsch, 2005).

6.6 Ethical Climate

Two items under the ethical climate dimension were removed, due to their factor loading of < 0.30, ETHI2 “My company has a formal, written code of ethics” and ETHI3 “My company has policies regarding ethical behaviour”. A Cronbach’s alpha value of 0.87 confirmed that the instrument was however reliable for use. Ironically, both ETHI2 and ETHI3 had the highest scores, each with a mean score of 4.52. ETHI6 “My company defines success not just by results but also the way they are

obtained had the lowest mean score, with a mean of 4.01". Overall, the mean score for EC was 30.18, with a standard deviation of 4.23.

These results suggest that there is a collection of behaviours, feelings and attitudes displayed in the workplace (Guerci *et al*., 2015) and that leaders are themselves displaying ethical behaviour, honesty and trustworthiness (Brown & Treviño, 2006). When there are policies and procedures in place, it is easier to drive a culture of ethical behaviour (Pasricha, Singh & Verma, 2018). An organisation with a good ethical climate is one where a code of ethics is formally written, policies and procedures are in place to encourage ethical behaviour, and unethical behaviour is instantly dealt with (Schwepker, 2001).

6.7 Voluntary Environmental Behaviour

No items were removed under the voluntary environmental behaviour. The instrument was valid and reliable, as it was, with a Cronbach's alpha value of 0.82. These results indicated that the instruments used, in the context of this study, were valid and reliable (Henseler, Ringle & Sarstedt, 2015). The measured variable with the highest mean score was VOLU2 "I take initiative to behave in environmentally-friendly ways at work", with a mean score of 4.17 and VOLU3 "I do more for the environment at work than I am expected to", mean score of 3.62. The overall mean score for VEB was 11.66, with a standard deviation of 2.29.

6.8 Hypothesis Testing

H_1: Ubuntu leadership has a direct positive influence on sustainable performance.

This hypothesis aimed to examine the existence of a relationship between UL and SP. The research question RQ1 "to what extent does ubuntu leadership influence sustainable performance" was answered by testing the hypothesis "ubuntu leadership has a direct positive influence on sustainable performance". The test indicated that there is a positive direct influence of UL on SP, although the level of prediction of UL on SP was "not so strong". The adjusted R^2, which attempts to rectify for bias, is 0.11, implying that UL explains only 10.6% of the variability of SP.

Unlike Dey *et al*. (2022), Iqbal *et al*. (2020), Saleem *et al*. (2020) and Shoaib *et al*. (2022), Székely and Knirsch (2005) had found a direct influence of leadership style, on sustainable performance. Székely and Knirsch (2005) found that responsible leadership directly influenced sustainable performance. This study's findings are more in line with Székely and Knirsch's (2005), that a leadership style can directly influence sustainable performance. Although a correlation between ubuntu leadership and sustainable performance exists, there is over 80% of the unexplained variability that can inform future research. As a starting place however, this finding supports the belief by Ncube (2010), that ubuntu leadership bears hope for Africans, in addressing challenges of sustainability; addressing poverty, social ills and the unequal distribution of resources. This finding further supports Metz (2007) proposal of ubuntu leadership as a social learning theory with an impact on stakeholder theory, in that it promotes harmonious social relations, based on a shared identity and solidarity among people. This finding gives hope for an African principle that can challenge Western moral principles (Bekker, 2007).

6.8.1 Hypothesis 2

H_{2a}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance.

This hypothesis aimed to examine the mediating effect of ethical climate on the relationship between ubuntu and sustainable performance. The research question "to what extent does ethical climate mediate the relationship between ubuntu leadership and sustainable performance", was answered by testing the hypothesis "ethical climate has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance".

Although in the study by Dey *et al.* (2022), ethical climate was studied for its mediating role in the relationship between ethical leadership and voluntary environmental behaviour, it motivated for further investigation of what role it would play in mediating the relationship between ubuntu leadership and sustainable performance. In both instances, ethical climate mediates the relationships fully. Full mediation suggests that the direct relationship between ubuntu leadership and sustainable performance becomes insignificant when the effects of ethical climate are controlled for (Baron & Kenny, 1986; Hair *et al*., 2019). This finding highlights the importance of an ethical

climate within the workplace, in getting employees to be part of the plight towards achieving sustainable development goals and supports the suggestion by Bissing-Olson *et al*. (2013), that if leaders want to encourage employees to get actively involved in work that protects the environment, they need to create the culture for them to do so. Employee voluntary environmental behaviour can assist organisations in achieving sustainable performance, and ethical climate even more so (Paton, 2000).

To create an ethical climate, leaders need to behave in an ethical manner themselves (Brown & Treviño, 2006; Mustamil & Najam, 2020). Leaders need to act with honesty and trustworthiness, and one of the means to creating an ethical climate is in ensuring that rules, codes of ethics, policies and procedures are developed, approved and implemented. Leaders need to also reward or penalise ethical or unethical conduct in the workplace, if an ethical climate is to be successfully created (Pasricha, Singh & Verma, 2018).

H_{2b}: Ubuntu leadership has a direct positive influence on ethical climate.

This hypothesis aimed to examine the existence of a relationship between ubuntu leadership and ethical climate. The research question "to what extent does ubuntu leadership influence ethical climate" was answered by testing the hypothesis "ubuntu leadership has a direct positive influence on ethical climate". The test indicated that there is a positive direct influence of ubuntu leadership on ethical climate. The test further indicated that the level of prediction of ubuntu leadership on ethical climate was "fairly "good". The adjusted R^2, which attempts to rectify for bias, is 0.27, meaning that ubuntu leadership explains 27.1% of the variability of ethical climate.

In line with H_{2a}, this finding supports Sambala, Cooper and Manderson (2020) and Brown and Treviño (2006), in that ubuntu leadership establishes the standard against which an ethical climate is created. Ubuntu leadership encourages decision-making for the common good, and not for sole gain. It advocates for ethical behaviour and the demonstration of appropriate conduct. Dey *et al*. (2022) argued that an ethical climate fostered by ethical leadership fostered an environment in which employees felt empowered.

6.8.2 Hypothesis 3

H_{3a}: Ethical climate positively influences voluntary environmental behaviour

This hypothesis aimed to examine the existence of a relationship between ethical climate and voluntary environmental behaviour. The research question “to what extent does ethical climate influence voluntary environmental behaviour” was answered by testing the hypothesis “ethical climate positively influences voluntary environmental behaviour”. The test indicated that there is a positive direct influence of ethical climate on voluntary environmental behaviour. The test further indicated that although ethical climate predicted voluntary environmental behaviour, the level of prediction was “not that strong”. The adjusted R^2, which attempts to rectify for bias, is 0.15, meaning that ethical climate explains 14.9% of the variability of voluntary environmental behaviour

This study supports the finding by Dey *et al*. (2022), that ethical climate significantly influences voluntary environmental behaviour. In their study, the standardised β was 0.47, while in this study it was 0.39. This suggests that in the context of their study, ethical climate had a stronger effect on voluntary behaviour, than it did in this study’s context. Dey *et al*. (2022) collected data from 327 mid-level managerial employees from an industry in Bangladesh, over two phases. Notably, their majority respondents were male and those aged 31-40 years, similar to this study’s, with majority respondents being male and those aged 35-44 years. Not just the context of the study, but sample size too, are suspected to have been the cause for the stronger effect (Wolf *et al*., 2013).

H_{3b}: Ethical climate has a positive mediating effect on the relationship between ubuntu leadership and voluntary environmental behaviour

This hypothesis aimed to examine the mediating effect of ethical climate on the relationship between ubuntu leadership and voluntary environmental behaviour. The question “to what extent does ethical climate mediate the relationship between ubuntu leadership and voluntary environmental behaviour” was responded to by testing the hypothesis “ethical climate has a positive mediating effect on the relationship between ubuntu leadership and voluntary environmental behaviour”. The test indicated that in the presence of a mediator, the direct relationship between ubuntu leadership and voluntary environmental behaviours becomes insignificant. The test further indicated

that ethical climate fully mediates the relationship between ubuntu leadership and voluntary environmental behaviour.

This is in line with findings made by Dey *et al.* (2022), where ethical climate fully mediated the impact of leadership on voluntary environmental behaviour. Similar to the findings made in this study, there was a direct and significant relationship between the leadership style and voluntary environmental behaviour, in their study, until the introduction of a mediator made it insignificant. Comparing the effects of the mediation, between this study and that of Dey *et al*. (2022), the effect of the mediation in this study was 0.022, and 0.100 in the other study. This could be attributed to the difference in the two leadership styles; ethical leadership and ubuntu leadership. It would make good theoretical contribution if the cause for the difference in effect could be researched.

6.8.3 Hypothesis 4

H_{4a}: Voluntary environmental behaviour has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance

This hypothesis aimed to examine mediating effect of voluntary environmental behaviour, on the relationship between ubuntu leadership and sustainable performance. The research question “to what extent does voluntary environmental behaviour mediate the relationship between ubuntu leadership and sustainable performance” was answered by testing the hypothesis “voluntary environmental behaviour has a positive mediating effect on the relationship between ubuntu leadership and sustainable performance”.

The results revealed that voluntary environmental behaviour does not mediate the relationship between ubuntu leadership and sustainable performance. This again, highlights the importance of an ethical climate in achieving sustainable performance. Much as employees may voluntarily choose to behave in environmentally friendly ways, them doing so does not affect a leader’s role in achieving sustainable performance

H_{4b}: Voluntary environmental behaviour positively influences sustainable performance

This hypothesis aimed to examine the existence of a relationship between VEB and SP. The research question "to what extent does voluntary environmental behaviour influence sustainable performance" was answered by testing the hypothesis "voluntary environmental behaviour positively influences sustainable performance**".** The test indicated that there is a positive direct influence of VEB on SP. The test further indicated that the level of prediction of VEB on SP was "good". The adjusted R^2, which attempts to rectify for bias, is 0.43, meaning that VEB explains 43.3% of the variability of SP. This finding supports those of Saleem *et al*. (2020), Liu and Zhao (2019), and Dey *et al*. (2022), that voluntary environmental behaviour positively influences sustainable performance.

Environmental behaviour is an integral component of environmental performance, which stimulates and enhances the overall performance of an organisation (Mousa & Othman, 2020). When employees choose eco-friendly practices, it can assist organisations in transitioning to more sustainable industries. Although this study found a direct correlation between VEB and SP, Kim *et al*. (2019) argue that leaders play a crucial role in setting the scene, by encouraging pro-environmental behaviour from employees. From the principles of social learning theory, this argument holds (Bandura & Walters, 1997).

Comparing the strengths of the effects of VEB on SP in this study and that of Dey *et al*. (2022), the strongest effect was observed in this study, with a standardised β of 0.43, compared to that in Dey *et al*.'s (2022) standardised β of 0.28. Again, context matters. Future research could include the investigation of these contextual elements that influence the strength of the effect of VEB on SP.

H_{4c}: Ubuntu leadership positively influences voluntary environmental behaviour

This hypothesis aimed to examine the existence of a relationship between UL and VEB. The research question "to what extent does ubuntu leadership influence voluntary environmental behaviour" was answered by testing the hypothesis "ubuntu leadership positively influences voluntary environmental behaviour". The test indicated that there is a positive direct influence of UL on VEB. The test however

indicated that the level of prediction of UL on VEB was “very weak”. The adjusted R^2, which attempts to rectify for bias, is 0.05, meaning that UL explains only 4.7% of the variability of VEB.

6.9 Summary of Results

This study's primary objective was to examine the effect of ubuntu leadership on sustainable performance and that has been achieved. The results revealed that ubuntu leadership has a direct positive influence on sustainable performance. A further objective of this study was to investigate the impact of variables that serve as mediators in the relationship between ubuntu leadership style and sustainable performance and that too has been achieved. Two variables were investigated as potential mediators in the relationship between ubuntu leadership and sustainable performance; ethical climate and voluntary environmental behaviour, and one of them was found to have a positive mediating effect on the relationship between ubuntu leadership and sustainable performance. Ethical climate was found to fully mediate the relationship between ubuntu leadership and sustainable performance.

The study suggests that ubuntu leadership plays a significant and direct role in achieving sustainable performance. These findings are significant, because scholars discovered that Western leadership styles such as ethical leadership, sustainable leadership, spiritual leadership, and transformational leadership had no significant direct influence on sustainable performance. This highlights the important role of ubuntu leadership, in achieving sustainable performance.

In summary, the results of the hypothesis testing supported all hypotheses with the exception of H_{4a}. Figure 12 below, presents a graphical summary of the accepted hypothesis and thus a proposed model, including the number of dimensions, for achieving sustainable performance.

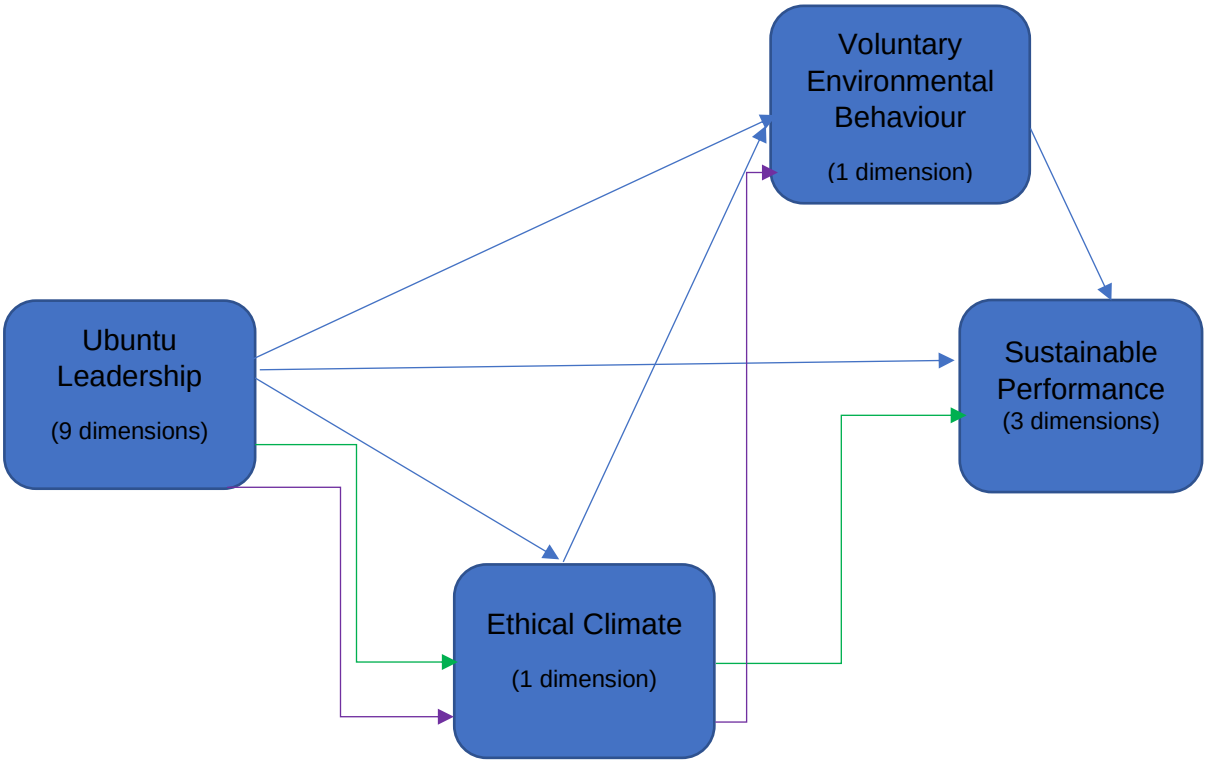

Figure 12: Proposed model for achieving sustainable performance

6.10 Conclusion

Chapter 6 provided a summary and discussion of the findings. Conclusions and recommendations for future research are provided in Chapter 7.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

Chapter 7 highlights the principal conclusions and discusses the implications of the research for business. In addition, this chapter discusses the implications of the research for academia, limitations of the research and concludes with recommendations for future research in the areas of ubuntu leadership and sustainable performance.

7.2 Principal Conclusions

This study's main objective was to examine the influence of ubuntu leadership on sustainable performance, while building on existing literature. A call for an African-based leadership style for achieving sustainable performance was made (Van Norren, 2020), thus motivating for this study. Furthermore, the work done by Dey *et al*. (2022) helped formulate hypotheses that could be tested in exploring the influence of ubuntu leadership on sustainable performance.

The sample used for the study consisted of 209 individuals who work for manufacturing companies in South Africa. As already discussed, the sample was well-representative of South Africa and the South African workplace (Stats SA, 2021). Majority of the respondents were African, followed by White, Indian, Coloured and other. Majority of respondents were also male.

The high level of ubuntu leadership and the high level of sustainable performance, found in this study, supports the notion of ubuntu leadership as a ray of hope in addressing sustainability challenges; addressing poverty, social ills, and any unequal distribution of resources.

7.3 Business and Managerial Implications

As mentioned in Chapter 1, organisations, worldwide, are expected to commit to sustainable performance and business leaders expected to lead the way (Hargreaves & Fink, 2004; UN, 2020). Sustainability provides long-term growth, competitive advantage, financial viability and development opportunities for organisations (Kim &

Hall, 2021). Given this study's findings, that ubuntu leadership significantly influences sustainable performance, business leaders will benefit from being aware of the indicator variables that make up ubuntu leadership, as adapted from various scholars (Brubaker, 2013; Lutz, 2009; Mangaliso, 2001; Mbigi, 1997; Muchiri, 2011; Ncube, 2010; Poovan, Du Toit & Engelbrecht, 2006)

Those are;

i) My manager distributes resources in a manner that enables the department to carry out its work
ii) My manager is prepared to make personal sacrifices in order to achieve our departmental goals
iii) My manager encourages us to work collectively
iv) My manager treats people like one would members of one's family
v) My manager makes decisions based on consensus within the department
vi) My manager sees herself/himself as one of us in the workplace
vii) My manager goes out of her/his way to be helpful towards employees
viii) My manager is willing to sacrifice self-desires for the benefit of others
ix) My manager shows respect for others
x) My manager is considerate of my personal values and those of my colleagues
xi) My manager exercises authority in a humane manner
xii) My manager is considerate of my personal values and those of my colleagues
xiii) My manager does not look down on others
xiv) My manager leads by example
xv) My manager models ethical behaviour
xvi) My manager shares her/his vision of the future with us
xvii) My manager is transparent
xviii) My manager is more concerned with what we achieve as a collective, than individually
xix) My manager fosters collaboration
xx) My manager makes effort to build relationships with employees
xxi) My manager empowers others
xxii) My manager allows for different perspectives to be tabled
xxiii) My manager allows employees to take initiative
xxiv) My manager encourages innovation

7.4 Theoretical Implications & Contribution

This research extends on the work of Dey *et al*., (2022), finding that ubuntu leadership influences sustainable performance, and that ethical climate plays a significant role in mediating the relationship between ubuntu leadership and sustainable performance, as well as the relationship between ubuntu leadership and voluntary environmental behaviour. Future research should consider a comparative study of the two leadership styles, ubuntu leadership and ethical leadership, by quantifying their impact on sustainable performance.

The role that cultures and context play in the relationship between ubuntu leadership and sustainable performance is another important implication. Future research could provide new theoretical insights in light of the substantial unexplained variability of ubuntu leadership on sustainable performance.

7.5 Limitations

7.5.1 Bias

As discussed in Chapter 4, individual perceptions were collected using an online survey instrument, and a degree of bias may have been present (Harrison, Reilly & Creswell, 2020), thus reducing the findings' strength.

7.5.2 Sample Method

Again, due to the lack of a sampling frame at the outset of the study, purposive non-probability and volunteer sampling techniques were used (Saunders & Lewis, 2017). These methods imply that some discretion was exercised in selecting participants who met the sampling criterion of being employed by South African manufacturing firms (Creswell & Creswell, 2017). These techniques therefore restrict the ability to generalise the findings to a larger population.

7.5.3 Time Constraints

This study utilised a cross-sectional design, due to time constraints. This means that the collected response data was based on employees' perceptions of their leaders at a point in time. A leader may have a change of heart and a change in behaviour over time, and that has not been factored for. Therefore, the selection of a cross-sectional study introduced bias into the results.

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APPENDICES

Appendix 1: Survey Questionnaire

A. Informed Consent

Dear Participant

I am currently a student at the University of Pretoria's Gordon Institute of Business Science (GIBS) and completing my research in partial fulfilment of an MBA.

I am conducting research on the relationship between ubuntu leadership and sustainable performance, and the mediating role of organisational ethical climate and employee voluntary environmental behaviour in the relationship. To that end, you are asked to participate in an online survey.

Completing the survey should take no longer than 15 minutes of your time. Your participation in the survey is voluntary and you can withdraw at any time without penalty. All data will be reported anonymously and stored without any identifiers. Your participation is anonymous and only aggregated data will be reported.

By completing this survey, you indicate that you are voluntarily participating in this research. Should you have any concerns, please contact either myself or my supervisor. Both our details are indicated below:

Researcher Name: Lerato Magalo
E-mail: 21072672@mygibs.co.za
Phone: 079 884 8506

Supervisor Name: Prof Gavin Price
E-mail: priceg@gibs.co.za
Phone: 011 771 4223

Section 2

Please tick the applicable box, **about yourself**

Demographic	Range	
Do you report to a Senior Manager / Executive	Yes	
	No	Survey closes and thanks the participant
Age	18-24	
	25-34	
	35-44	
	45-54	
	55-64	
	65+	
Gender	Female	
	Male	
	Prefer not to disclose	
Race	African	
	Coloured	
	Indian	
	White	
	Other	
Level in Organisation	Plant Worker	
	Administration	
	Junior	
	Specialist/Technical	
	Supervisor/Team Leader	
	Middle Management	
	Other	
Tenure in organisation	Less than 1 year	
	1 – 4 years	
	5 – 9 years	
	10 – 19 years	
	20+ Years	

Please tick the applicable box, about your organisation

Size of Organisation	1 - 49	
	50 - 199	
	200+	
Organisation's Age	1 – 4 years	
	5 – 9 years	
	10 – 19 years	
	20+ Years	

Organisation's Main Manufacturing Activity	Food Packaging	
	Non-Food Packaging	
	Both Food & Non-Food Packaging	

All variables will be measured on a scale of 1 to 5, where;

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Please respond to below questions, by ticking the most applicable box.

Section 3:

1. My manager expects me to assist colleagues during crises
2. My manager distributes resources in a manner that enables the department to carry out its work
3. My manager is prepared to make personal sacrifices in order to achieve our departmental goals
4. My manager has deep concern for employees in times of difficulty
5. My manager encourages us to work collectively
6. My manager treats people like one would members of one's family
7. My manager makes decisions based on consensus within the department
8. My manager sees herself/himself as one of us in the workplace
9. My manager goes out of her/his way to be helpful towards employees
10. My manager is sensitive to employees' personal problems
11. My manager empathises when employees are in pain
12. My manager is willing to sacrifice self-desires for the benefit of others
13. My manager shows respect for others
14. My manager is considerate of my personal values and those of my colleagues
15. My manager exercises authority in a humane manner
16. My manager does not look down on others
17. My manager leads by example
18. My manager models ethical behaviour
19. My manager shares her/his vision of the future with us
20. My manager is transparent
21. My manager is more concerned with what we achieve as a collective, than individually
22. My manager allows for different perspectives to be tabled
23. My manager fosters collaboration
24. My manager makes effort to build relationships with employees
25. My manager empowers others

26. My manager allows employees to take initiative
27. My manager encourages innovation

Section 4:

28. My company is growing in sales and profit
29. My company is financially efficient
30. My company has a good reputation and a valuable brand
31. My company has a policy to strive to be a good corporate citizen
32. My company has a policy to respect business ethics
33. My company takes initiative to reduce, reuse, and recycle waste
34. My company takes initiative to reduce the negative environmental impact of the products it manufactures
35. My company takes initiative to improve energy efficiency at work

Section 5:

36. My company has a formal, written code of ethics
37. My company has policies regarding ethical behaviour
38. My company does not tolerate any unethical behaviour
39. My company enforces policies regarding ethical behaviour
40. My company reprimands behaviour that leads to personal gain
41. My company defines success not just by results but also the way they are obtained
42. In my company, everyone is expected to comply with company policies and standards over and above other considerations

Section 6:

43. I take initiative to get involved in environmental protection at work
44. I take initiative to behave in environmentally-friendly ways at work
45. I do more for the environment at work than I am expected to

Appendix 2: Constructs Codes

High-order constructs		Low-order constructs	
Acronym	Name	Acronym	Name
UL	Ubuntu Leadership	SURV	Survival
		SOLD	Spirit of Solidarity
		COMP	Compassion
		DIGN	Dignity & Respect
		MODE	Modelling the Way
		VISI	Vision Sharing
		TRAN	Transparency
		COLL	Collectivism
		INNO	Innovation
SP	Sustainable Performance	FINA	Financial Performance
		SOCI	Social Performance
		ENVI	Environmental Performance
EC	Ethical Climate	ETHI	
VEB	Voluntary Environmental Behaviour	VOLU	

Appendix 3: Items, Scales and Sources

Item	Variable: Survival	Sources
SURV1	My manager expects me to assist colleagues during crises	Poovan, Du Toit & Engelbrecht, 2006; Mbigi, 1997
SURV2	My manager distributes resources in a manner that enables the department to carry out its work	
SURV3	My manager is prepared to make personal sacrifices in order to achieve our departmental goals	
SURV4	My manager has deep concern for employees in times of difficulty	
Item	Variable: Spirit of Solidarity	Sources
SOLD1	My manager encourages us to work collectively	Brubaker, 2013; Lutz, 2009; Mangaliso, 2001
SOLD2	My manager treats people like one would members of one's family	
SOLD3	My manager makes decisions based on consensus within the department	
SOLD4	My manager sees herself/himself as one of us in the workplace	
Item	Variable: Compassion	Sources
COMP1	My manager goes out of her/his way to be helpful towards employees	Muchiri, 2011; Poovan, Du Toit & Engelbrecht, 2006; Brubaker, 2013
COMP2	My manager is sensitive to employees' personal problems	
COMP3	My manager empathises when employees are in pain	
COMP4	My manager is willing to sacrifice self-desires for the benefit of others	
Item	Variable: Dignity and Respect	Sources
DIGN1	My manager shows respect for others	Brubaker, 2013; Poovan, Du Toit & Engelbrecht, 2006
DIGN2	My manager is considerate of my personal values and those of my colleagues	
DIGN3	My manager exercises authority in a humane manner	
DIGN4	My manager does not look down on others	
Item	Variable: Modelling the way	Sources
MODE1	My manager leads by example	Ncube, 2010
MODE2	My manager models ethical behaviour	
Item	Variable: Vision Sharing	Source
VISI1	My manager shares her/his vision of the future with us	Ncube, 2010
Item	Variable: Transparency	Source
TRAN1	My manager is transparent	Ncube, 2010

Item	Variable: Collectivism	Source
COLL1	My manager is more concerned with what we achieve as a collective, than individually	Ncube, 2010
COLL2	My manager fosters collaboration	
Item	Variable: Innovation	Source
INNO1	My manager makes effort to build relationships with employees	Ncube, 2010
INNO2	My manager empowers others	
INNO3	My manager allows for different perspectives to be tabled	
INNO4	My manager allows employees to take initiative	
INNO5	My manager encourages innovation	
SUSTAINABLE PERFORMANCE		
Item	Variable: Financial Performance	Source
FINA1	My company is growing in sales and profit	Lee & Ha-Brookshire, 2017
FINA2	My company is financially efficient	
FINA3	My company has a good reputation and a valuable brand	
Item	Variable: Social Performance	
SOCI1	My company has a policy to strive to be a good corporate citizen	
SOCI2	My company has a policy to respect business ethics	
Item	Variable: Environmental Performance	
ENVI1	My company takes initiative to reduce, reuse, and recycle waste	
ENVI2	My company takes initiative to reduce the negative environmental impact of the products it manufactures	
ENVI3	My company takes initiative to improve energy efficiency at work	
Item	Variable: Ethical Climate	Source
ETHI1	My company does not tolerate any unethical behaviour	Schwepker (2001)
ETHI2	My company has a formal, written code of ethics	
ETHI3	My company has policies regarding ethical behaviour	
ETHI4	My company enforces policies regarding ethical behaviour	
ETHI5	My company reprimands behaviour that leads to personal gain	
ETHI6	My company defines success not just by results but also the way they are obtained	

ETHI7	In my company, everyone is expected to comply with company policies and standards over and above other considerations	
Item	Variable: Voluntary Environmental Behaviour	Source
VOLU1	I take initiative to get involved in environmental protection at work	Bissing-Olson *et al*. (2013).
VOLU2	I take initiative to behave in environmentally-friendly ways at work	
VOLU3	I do more for the environment at work than I am expected to	

Appendix 4: Ethical Clearance Approval

Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Lerato Magalo,

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.

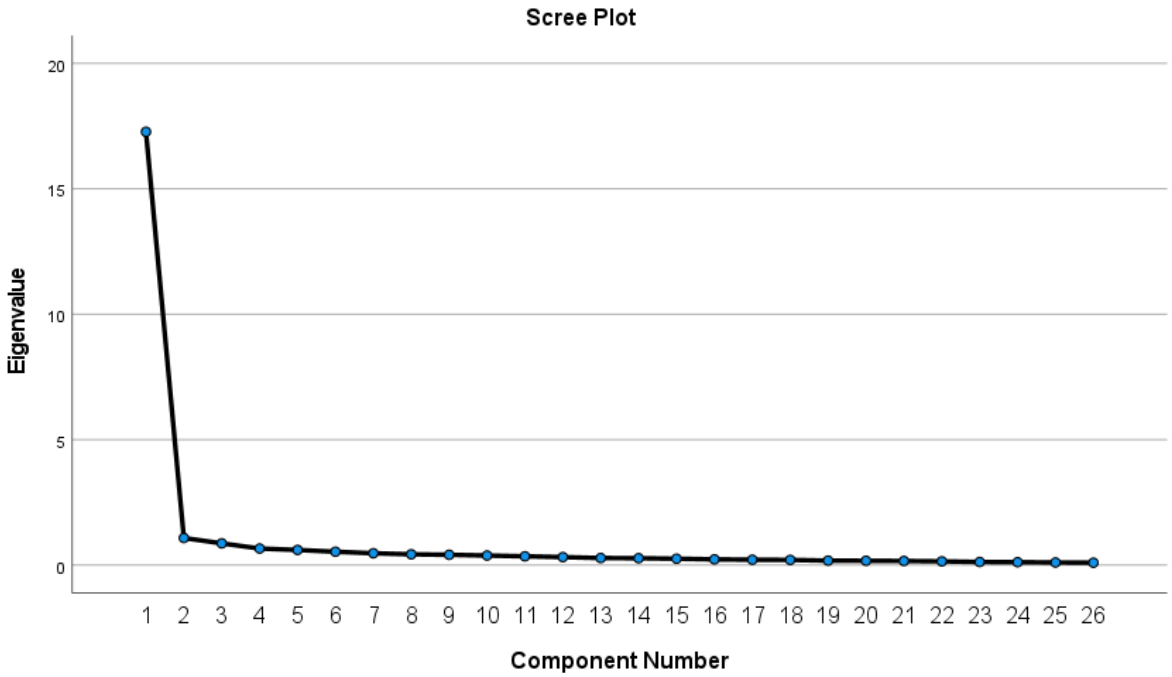
Ethical Clearance Form

Kind Regards

Appendix 5: Coded Descriptive Data

Demographics	
Manufacturing Company Type	
Automobile	1
Chemical Products	2
Rubber & Plastics	3
Food & Beverages	4
Textile, Clothing & Footwear	5
Iron, Metal & Steel Products	6
Age	
18-24	1
25-34	2
35-44	3
45-54	4
55-64	5
Gender	
Male	1
Female	2
Race	
African	1
Coloured	2
Indian	3
White	4
Other	5
Level in Organisation	
Plant Worker	1
Administration	2
Junior	3
Specialist/Technical	4
Supervisor/Team Leader	5
Middle Management	6
Senior Management	7
Tenure in Organisation	
Less than 1 year	1
1-4 years	2
5-9 years	3
10-19 years	4
20+ years	5
Size of organisation	
1 - 49	1
50 - 199	2
200+	3
Organisation’s Age	
1 – 4 years	1
5 – 9 years	2
10-19 years	3
20+ years	4

Appendix 6: Scree Plot_UL



Appendix 7: Unrotated Loadings_UL

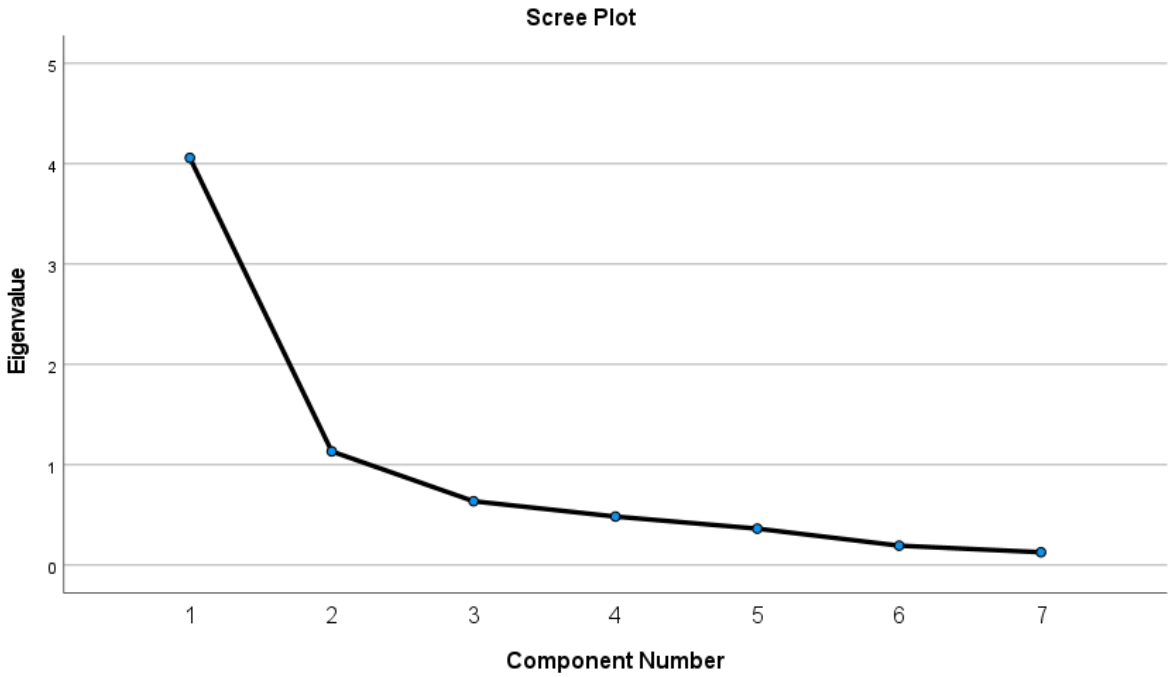
Component Matrix[a]

	Component	
	1	2
DIGN2	.904	
INNO1	.888	
DIGN1	.877	
COMP1	.875	
MODE1	.874	
SOLD2	.854	
DIGN3	.854	
DIGN4	.846	
COMP3	.844	-.364
INNO2	.840	
SOLD4	.828	
TRAN1	.817	
COMP2	.815	-.448
MODE2	.814	
INNO3	.813	
INNO4	.813	
COLL2	.807	
INNO5	.799	
COMP4	.795	
COLL1	.768	
SURV3	.763	
VISI1	.754	.346
SOLD1	.745	
SURV4	.727	-.441
SURV2	.724	
SOLD3	.714	

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Appendix 8: Scree Plot_EC



Appendix 9: Unrotated Loadings_EC

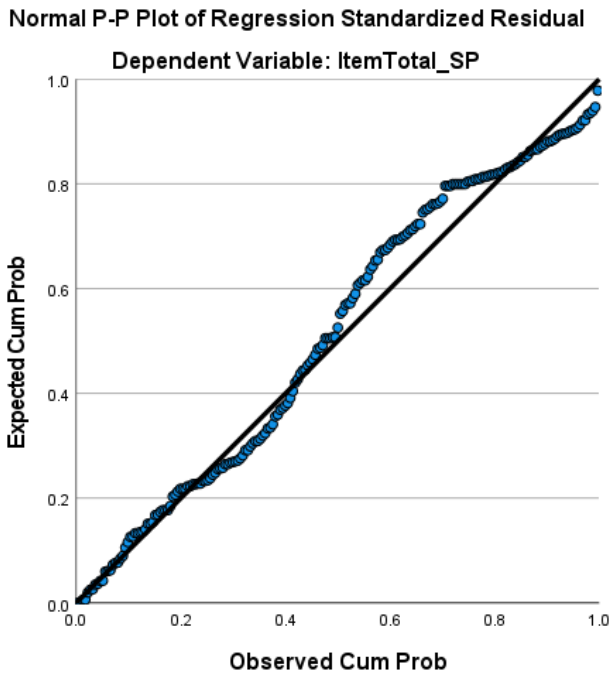
Component Matrix[a]

	Component	
	1	2
ETHI4	.870	
ETHI3	.772	-.543
ETHI7	.771	
ETHI1	.770	
ETHI5	.758	
ETHI2	.708	-.643
ETHI6	.664	.520

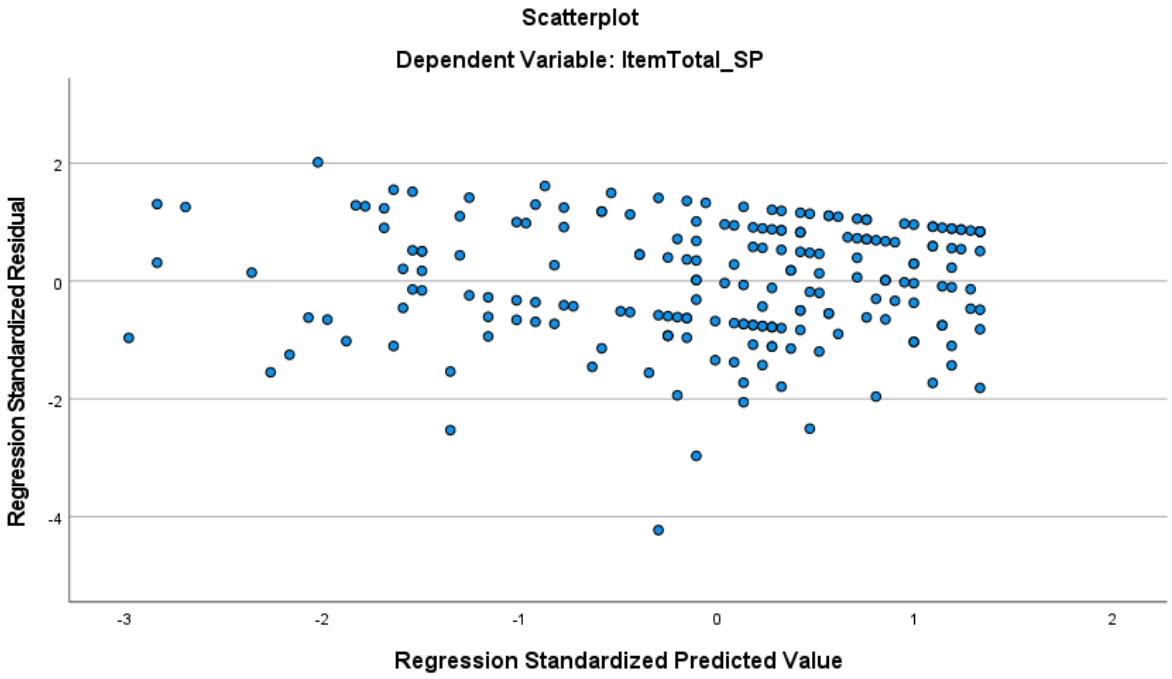
Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Appendix 10: Normal P-Plot_UL-SP



Appendix 11: Scatter Plot_UL-SP



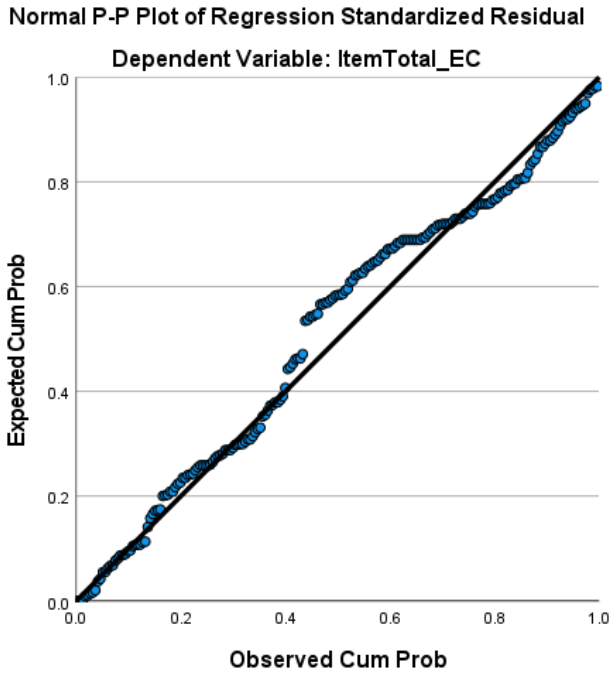
Appendix 12: Model 4 Process 4.1 Output_UL-EC-SP

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1
*****************

          Written by Andrew F. Hayes, Ph.D.
www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************
***************
Model  : 4
    Y  : SP
    X  : UL
    M  : EC

Sample
Size:  209

**************************************************************
***************
OUTCOME VARIABLE:
 EC

Model Summary
          R       R-sq        MSE          F         df1
df2          p
       ,524        ,275      8,655     78,336      1,000
207,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     13,607       ,876     15,541       ,000
11,880     15,333
UL             ,086       ,010      8,851       ,000
,067       ,106

Standardized coefficients
        coeff
UL       ,524

**************************************************************
***************
OUTCOME VARIABLE:
 SP

Model Summary
```

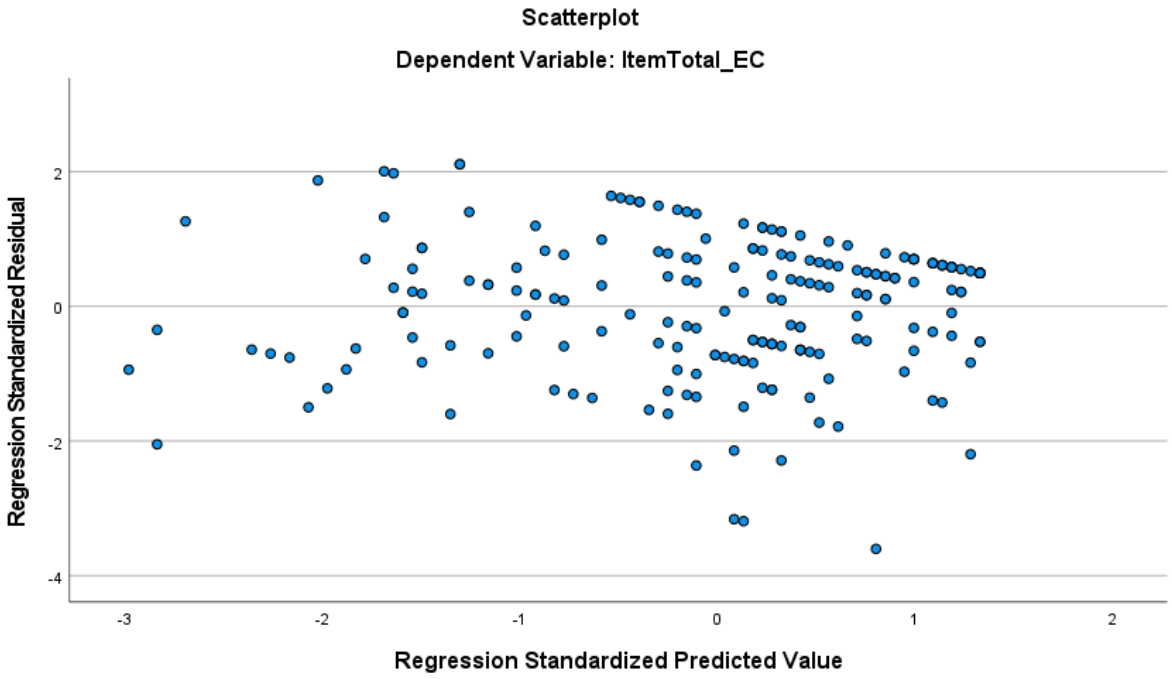
```
          R       R-sq        MSE          F        df1
df2          p
       ,602       ,362      6,547     58,549      2,000
206,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     14,214      1,121     12,681       ,000
12,004     16,423
UL              ,003       ,010       ,350       ,727      -
,016       ,023
EC              ,546       ,060      9,029       ,000
,427       ,665

Standardized coefficients
        coeff
UL       ,023
EC       ,590

Test(s) of X by M interaction:
          F        df1        df2          p
       ,648      1,000    205,000       ,422

************************** TOTAL EFFECT MODEL
****************************
OUTCOME VARIABLE:
 SP

Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,332       ,110      9,094     25,615      1,000
207,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     21,640       ,897     24,113       ,000
19,870     23,409
UL              ,051       ,010      5,061       ,000
,031       ,070

Standardized coefficients
        coeff
UL       ,332

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON
Y **************

Total effect of X on Y
```

```
     Effect         se          t          p       LLCI
ULCI       c_cs
       ,051       ,010      5,061       ,000       ,031
,070       ,332

Direct effect of X on Y
     Effect         se          t          p       LLCI
ULCI      c'_cs
       ,003       ,010       ,350       ,727      -,016
,023       ,023

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
EC       ,047       ,008       ,033       ,064

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
EC       ,309       ,052       ,217       ,418

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap
confidence intervals:
  5000

------ END MATRIX -----
```

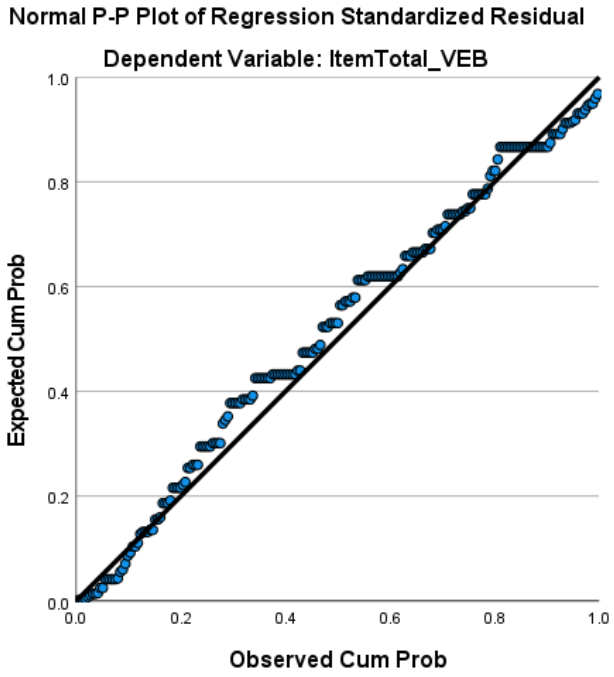
Appendix 13: Normal P-Plot_UL-EC



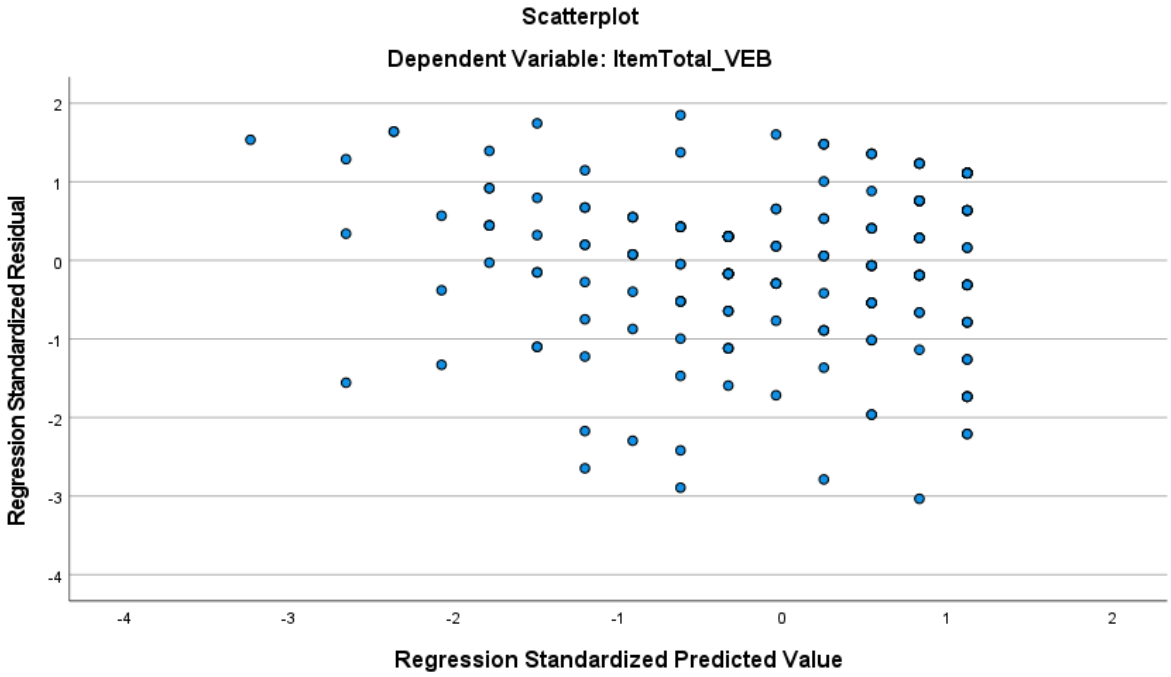
Appendix 14: Scatter Plot_UL-EC



Appendix 15: Normal P-Plot_EC-VEB



Appendix 16: Scatter Plot_EC-VEB



Appendix 17: Model 4 Process 4.1 Output_UL-EC-VEB

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1
*****************

          Written by Andrew F. Hayes, Ph.D.
www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************
***************
Model  : 4
    Y  : VEB
    X  : UL
    M  : EC

Sample
Size:  209

**************************************************************
***************
OUTCOME VARIABLE:
 EC

Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,524        ,275      8,655     78,336      1,000
207,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     13,607       ,876     15,541       ,000
11,880     15,333
UL             ,086       ,010      8,851       ,000
,067       ,106

Standardized coefficients
        coeff
UL       ,524

**************************************************************
***************
OUTCOME VARIABLE:
 VEB

Model Summary
```

```
          R       R-sq        MSE          F        df1
df2          p
       ,392       ,154      4,466     18,723      2,000
206,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant      6,100       ,926      6,590       ,000
4,275      7,925
UL             ,003       ,008       ,391       ,696      -
,013       ,019
EC             ,249       ,050      4,996       ,000
,151       ,348

Standardized coefficients
        coeff
UL       ,029
EC       ,376

Test(s) of X by M interaction:
          F        df1        df2          p
     13,245      1,000    205,000       ,000

************************** TOTAL EFFECT MODEL
****************************
OUTCOME VARIABLE:
 VEB

Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,226       ,051      4,983     11,187      1,000
207,000       ,001

Model
              coeff         se          t          p
LLCI       ULCI
constant      9,494       ,664     14,292       ,000
8,185     10,804
UL             ,025       ,007      3,345       ,001
,010       ,039

Standardized coefficients
        coeff
UL       ,226

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON
Y **************

Total effect of X on Y
```

```
     Effect         se          t          p       LLCI
ULCI       c_cs
       ,025       ,007      3,345       ,001       ,010
,039       ,226

Direct effect of X on Y
     Effect         se          t          p       LLCI
ULCI      c'_cs
       ,003       ,008       ,391       ,696      -,013
,019       ,029

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
EC       ,022       ,005       ,012       ,033

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
EC       ,197       ,045       ,115       ,296

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap
confidence intervals:
  5000

------ END MATRIX -----
```

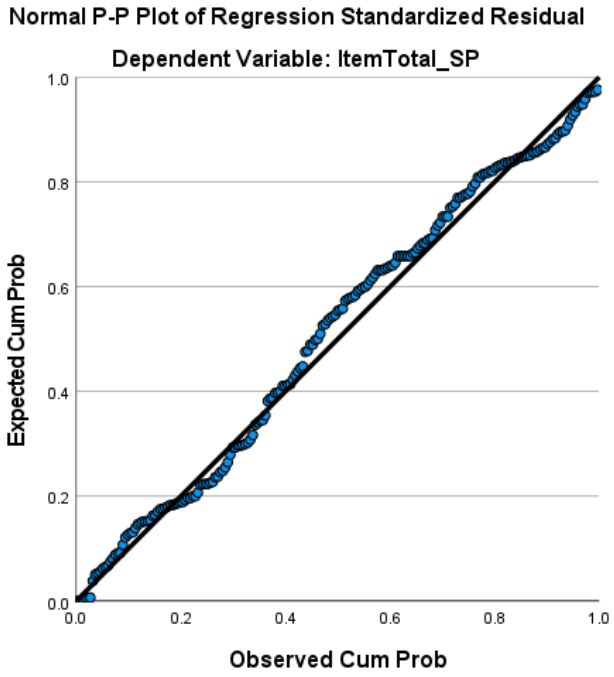
Appendix 18: Model 4 Process 4.1 Output_UL-VEB-SP

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1
*****************

          Written by Andrew F. Hayes, Ph.D.
www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************
***************
Model  : 4
    Y  : SP
    X  : UL
    M  : VEB

Sample
Size:  209

**************************************************************
***************
OUTCOME VARIABLE:
 VEB

Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,226       ,051      4,983     11,187      1,000
207,000       ,001

Model
              coeff         se          t          p
LLCI       ULCI
constant      9,494       ,664     14,292       ,000
8,185     10,804
UL             ,025       ,007      3,345       ,001
,010       ,039

Standardized coefficients
        coeff
UL       ,226

**************************************************************
***************
OUTCOME VARIABLE:
 SP
```

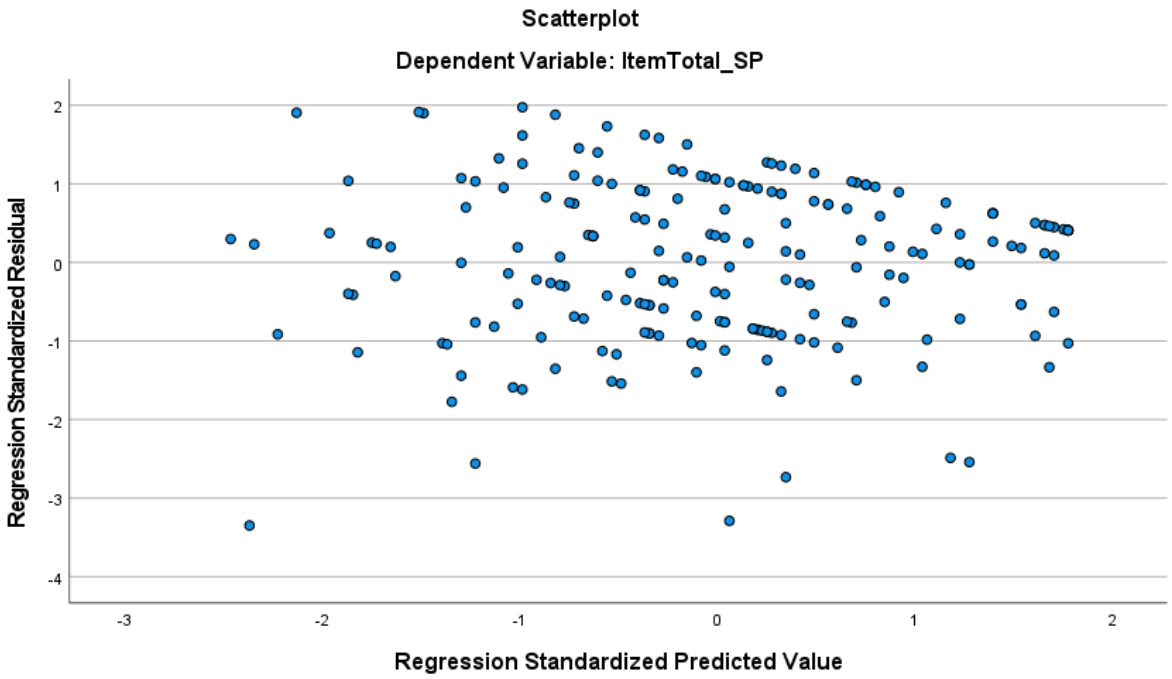
```
Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,495       ,245      7,749     33,487      2,000
206,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     16,640      1,168     14,250       ,000
14,338     18,942
UL             ,038       ,009      3,964       ,000
,019       ,056
VEB            ,527       ,087      6,076       ,000
,356       ,698

Standardized coefficients
         coeff
UL        ,246
VEB       ,378

Test(s) of X by M interaction:
          F        df1        df2          p
       ,105      1,000    205,000       ,746

************************** TOTAL EFFECT MODEL
****************************
OUTCOME VARIABLE:
 SP

Model Summary
          R       R-sq        MSE          F        df1
df2          p
       ,332       ,110      9,094     25,615      1,000
207,000       ,000

Model
              coeff         se          t          p
LLCI       ULCI
constant     21,640       ,897     24,113       ,000
19,870     23,409
UL             ,051       ,010      5,061       ,000
,031       ,070

Standardized coefficients
        coeff
UL       ,332

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON
Y **************
```

```
Total effect of X on Y
     Effect         se          t          p       LLCI
ULCI       c_cs
       ,051       ,010      5,061       ,000       ,031
,070       ,332

Direct effect of X on Y
     Effect         se          t          p       LLCI
ULCI      c'_cs
       ,038       ,009      3,964       ,000       ,019
,056       ,246

Indirect effect(s) of X on Y:
        Effect     BootSE   BootLLCI   BootULCI
VEB       ,013       ,005       ,005       ,024

Completely standardized indirect effect(s) of X on Y:
        Effect     BootSE   BootLLCI   BootULCI
VEB       ,085       ,029       ,034       ,145

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap
confidence intervals:
  5000

------ END MATRIX -----
```

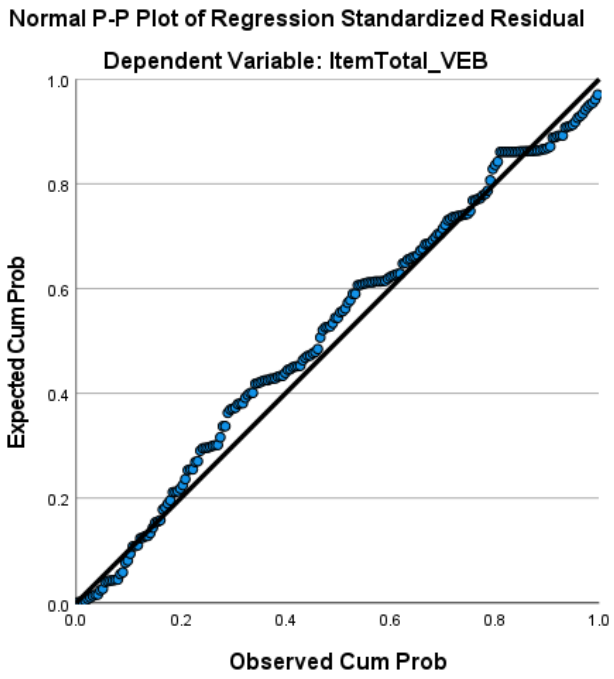
Appendix 19: Normal P-Plot_VEB-SP



Appendix 20: Scatter Plot_VEB-SP



Appendix 21: Normal P-Plot_UL-VEB



Appendix 22: Scatter Plot_UL-VEB