SUSTAINABLE DEVELOPMENT: A STRATEGIC APPROACH FOR SUSTAINABLE BUSINESS PRACTICES IN TRADE EFFLUENT-GENERATING INDUSTRIES IN FRANCISTOWN IN BOTSWANA

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Doctor of Business Administration (DBA)

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Abstract

SUSTAINABLE DEVELOPMENT: A STRATEGIC APPROACH FOR SUSTAINABLE BUSINESS PRACTICES IN TRADE EFFLUENT-GENERATING INDUSTRIES IN FRANCISTOWN REGION IN BOTSWANA

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The qualitative case study investigated the integration of Sustainable Development (SD) principles in business practices in three (3) major trade effluent-generating industries. The investigation focused on various management levels for the industry based in the Francistown region in Botswana to recommend solutions for improvement to the industry and the government. The selected industries for the study are the major trade effluent-generating industries in the Francistown region in Botswana. These industries have consistently failed to comply with the discharge requirements for trade effluent quality for over 20 years posing a pollution threat. Twenty-eight out of thirty (28/30) research participants selected from the various management levels from the respective organisations took part in the qualitative semi–structured interviews. Due to the COVID-19 movement, restrictions and protocols interviews were conducted via a speakerphone. Document reviews augmented qualitative data from telephone interviews to enhance the study's validity and reliability. The use of e-mail and the internet provided a means for document collection. Textual data from the telephone interviews and document reviews were hand-coded. The themes derived from the hand-coded data answered the research questions. Botswana's trade effluent-generating industries have embraced the SD concept to support future businesses. However, balancing profit making with

environmental protection and social welfare is a challenge for the industry. The approach to SD integration differs for the three organisations, depending on the business type and business processes. This study has proven that adopting the TBL performance framework, improved leadership & governance, effective and efficient systems & processes are necessary for the uptake of SD by the industry. Stakeholder engagement & innovation is also vital for SD integrative approach for businesses. Adopting a sustainable strategic management approach may enhance the balance of the SD pillars of economic growth, environmental protection, and social development. The industry's strategic adoption of SD principles shall facilitate pollution prevention at source. However, the study revealed some impediments to the SD adoption by businesses, including limited financial resources, lack of skilled workforce, high operating costs, and lack of employee education and awareness of SD. These industries export their goods to the international markets, and pollution prevention at source is a competitive advantage that demonstrates responsible care by the business curbing the global challenge.

Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification.

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Dedication

This piece of work is dedicated to my husband Benny Dick, my daughter Cheludo and my son Omolemo who selflessly supported my DBA journey.

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I thank my husband, Benny Dick, for being a supportive partner in this journey by availing our family resources to enable my studies. My daughter Cheludo and my son Omolemo for their patience and understanding when I had to close myself up in the study room to complete my assignments. My heartfelt gratitude goes to my Supervisor, Dr. Pascale Hardy, for her constructive comments and guidance that has shaped my thoughts to enable the writing of this thesis. Her patience and constant Skype meetings were beneficial for completing this work. I thank UNICAF online studies for the partial scholarship that enabled this study. I thank my Employer, the Ministry of Lands, and Water Affairs (MLWA), for granting me the authority to study on a private part-time basis. Their support by granting ten days of study leave per module was beneficial. I thank Professor Julius Atlhopheng, Dr. Chandrasekhar Naidu Kurugundla, Dr. Joshua Buru, Dr. Obolokile Thothi Obakeng, Dr. Nkobi Moleele, and Dr. Casper Bonyongo for reading my initial drafts and providing comments that were very useful in guiding my thoughts. I am grateful to my co-workers at the Department of Water & Sanitation for their support every time I embarked on study leave to complete the chapters. I thank the trade effluent-generating industry and all the research participants for making this study possible by availing themselves to the interviews and providing the supporting documents. I thank all the colleagues; I met through my UNICAF journey who encouraged me to remain positive regardless of the hurdles and the pains. I thank the School of Doctoral Studies at UNICAF for all the support and guidance throughout the journey. Above all, I thank God for his faithfulness in granting me the strength and the focus to persevere to the finishing line.

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List of Acronyms

ABS	Association of Business Schools
AGOA	African Growth and Opportunity
AU	African Union
BCI	Best Cotton Initiative
BIH	Botswana Innovation Hub
BITRI	Botswana Innovation, Technology & Research Institute
BIUST	Botswana University of Science & Technology
CAQDAS	Computer –Assisted Qualitative Data Analysis Software
COVID - 19	2019 Novel Coronavirus
CSR	Corporate Social Responsibility
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
ICT	Information & Communication Technology
MDG's	Millennium Development Goals
MOOC	Massive Open Online Course
NOSA	National Occupational Safety Association
PPE	Personal Protective Equipment

RSA	Republic of South Africa
RSTI	Research, Science, Technology & Innovation
RQ	Research Questions
RSM	Rotterdam School of Management
SACU	Southern African Custom Union
SD	Sustainable Development
SDGs	Sustainable Development Goals
SSM	Sustainable Strategic Management
TMTs	Top Management Teams
TBL	Triple Bottom Line
UB	University of Botswana
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment & Development
UREC	University Research Ethics Committee
US	United States
VAT	Value Added Tax
VPO	Voyager Plant Optimisation

WIPO	World Intellectual Property Organisation
WBCSD	World Business Council on Sustainable Development
WCED	World Commission on Environment and Development
ZLD	Zero Liquid Discharge

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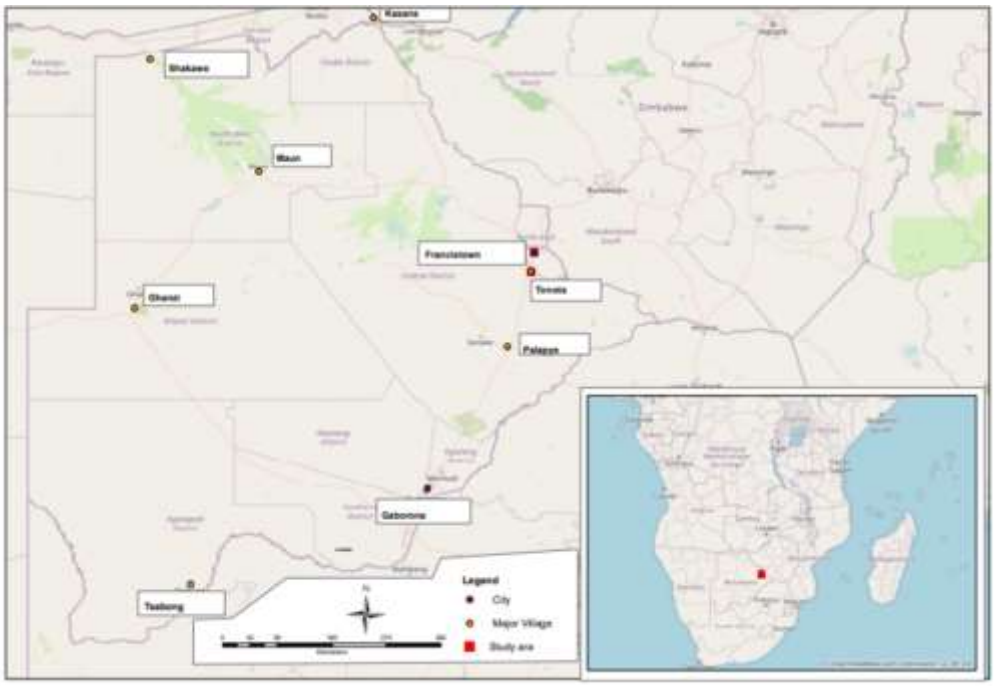
CHAPTER 1: INTRODUTION

Botswana is an economy in transition with an estimated Gross Domestic Product (GDP) of 15.78 billion US dollars in 2020, mainly contributed by mining, manufacturing, construction, agriculture, utilities, transport, and services (World Bank, 2021). The country is landlocked, semiarid, and situated in the southern part of Africa (Figure 1), with a total area of 581 730 km^2 (World Atlas, 2022), slightly smaller than France or the State of Texas. Botswana shares its border with Angola, Namibia, the Republic of South Africa, Zimbabwe, and Zambia, with an estimated population of 2, 374,697(Statics Botswana, 2020). The study explored the practice of Sustainable Development (SD) in manufacturing industries, specifically the major trade effluent-generating industries in the Francistown region, to solve pollution problems caused by effluent generated from these industries. Botswana's manufacturing industry cluster comprises the breweries, textiles, abattoirs, jewellery manufacturing, and car manufacturing. The research study was on three industries: the brewery and the textile industry in the City of Francistown, as well as another textile industry in the village of Tonota, 15 km away from the City of Francistown (Figure 1).

Figure 1

Map of Botswana Showing the Study Area

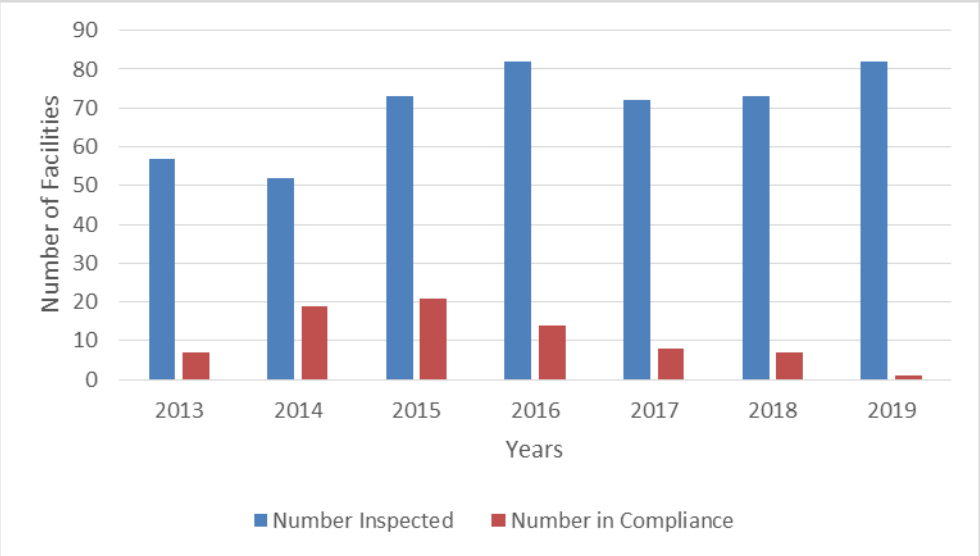


Note. The City of Francistown is the second largest City in Botswana and the most industrialised. Botswana is a landlocked country situated in Southern Africa. Trade effluent-generating industries in Francistown City and Tonota village are the major pollution facilities in the area. Own work.

The selected industries for the study have failed to comply with the Botswana wastewater discharge requirements (Botswana Bureau of Standards, 2012), based on the monitoring reports from the Botswana Government regulatory authorities (Figure 2). These non-compliance issues caused by the major trade effluent-generating industries are a pollution threat to the communities where these industries operate. Adopting SD principles into the industry's strategic management processes and business practices is a sustainable solution to end these pollution problems.

Figure 2

Compliance Rate of Wastewater Discharge Facilities in Botswana



Note. Chart shows number of facilities inspected and number of facilities found in compliance with the Botswana standard for wastewater discharge (BOS 93:2012) for the period 2013 - 2019. Pollution data used to draw the graph was obtained from Botswana Department of Water and Sanitation monitoring reports. Own work.

1.1 Foundation of the Study

The study was grounded on the SD concept that emerged at the Stockholm Declaration on Human and Environment in 1972(Adams et al., 2016; Kolk, 2016). The World Commission on Environment and Development (WCED) (Alexius & Furusten, 2020; Karin et al., 2019) gave the concept shape through their report "Our Common Future" led by Gro Harlem Brundtland in 1987(Testafaye & Fougere, 2021). The Brundtland report defined sustainable development as "meeting the needs of today without sacrificing the future generations' ability to meet their needs" (Adams et al., 2016, p.3; Hosta & Zabkar, 2021, p.273).

The Agenda 21 on sustainable development was adopted at the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in, Brazil (Kolk, 2016; Walsh & Dodds, 2017) giving SD international recognition. The concept has been evolving, resulting in the United Nations Millennium Development Goals (MDGs) in 2000(Dobrovolska, 2018, Mio et al., 2020) and the Johannesburg Summit on Sustainable Development in 2002(Walsh & Dodds, 2017). The MDGs expired in September 2015(George et al., 2016; Sullivan et al., 2017) and paved the way for the Sustainable Development Goals(SDGs), which aims to end poverty, protect the environment, and promote social welfare by the year 2030 (Doh et al., 2017; Dobrovolska,2018; Wysokinska, 2017). The agenda 2030 on SD is a commitment that the national governments made to align policy and strategies with the global challenge (George et al., 2016; Kolk, 2016; Van Tulder, 2021), and this cannot be achieved without the contribution of the business sector (Sullivan et al., 2017; Rubio – Mozos et al., 2020).

Figure 3

The Seventeen Sustainable Development Goals

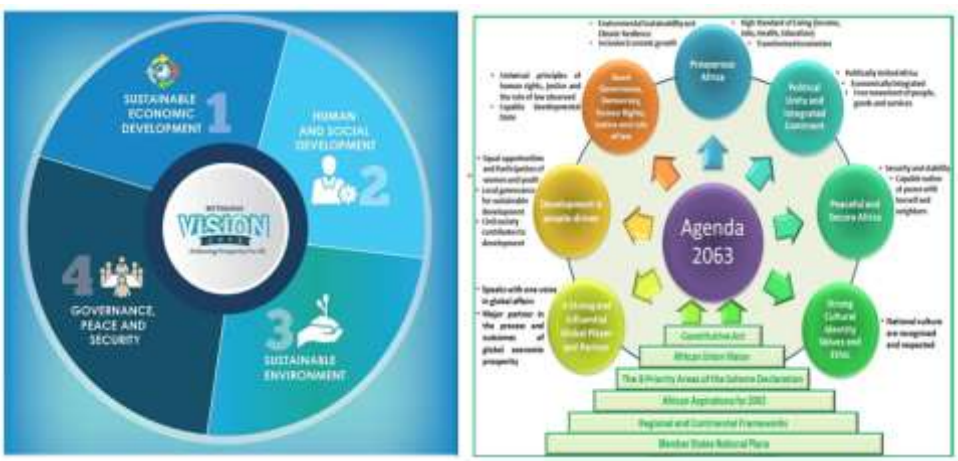
Note. The 17 SDGs are the blue print to the 2030 agenda on SD. From Transforming Our World: The 2030 Agenda for Sustainable Development, 2015.

(https://sustaianbledevelopment.un.org./post2015/transformimgourworld).

Botswana is among the 193 UN member states that adopted the seventeen SDGs (Figure 3) to end poverty, protect the environment, and promote social welfare. The Botswana SDGs Road Map and the United Nations Sustainable Development Framework (UNSDF) for Botswana Government aim to domesticate the SDGs. These documents align with the Botswana national strategy Vision 2036, ***"Achieving Prosperity for all."*** Botswana's vision for 2036 supports the socio-economic transformation agenda of the continent of Africa, **"The Africa We Want,"** by 2063. Therefore, commitment to the achievement of the global agenda by the business entities helps to drive national and continental priorities (Figure 4).

Figure 4

Botswana Vision 2036 and Africa Agenda 2063



Note. Both Botswana and Africa agenda 2063 align to the SDGs. Botswana Vision 2036 directly links with the SD pillars. Author merged the Botswana Vision 2036 picture and the Africa Agenda 2063 picture obtained online. From Botswana Vision 2036 photos, Know your Vision 2036 pillars by Botswana Government,2020.(https://web.facebook.com/ BotswanaVision2036/photos/pcb/).

Africa Agenda 2063 picture obtained from Agenda 2063: The Africa We Want. "A shared strategic framework for inclusive growth and sustainable development & a global strategy to optimise the use of Africa's Resources for the benefit of all Africans by African Union Commission, 2015. (https://au.int/sites/default/files/documents/33126-doc-framework-document-book).

After the Rio Summit of 1992, Elkington suggested the Triple Bottom Line (TBL) performance framework for the business to align with the global commitment of SD (Ferns et al., 2019; Walsh & Dodds, 2017). TBL performance framework aims to balance the business's environmental, social, and economic performance goals (Adams et al., 2016; Henry et al., 2019). The business of the 21st century can no longer implement strategies directed to profit making for the business owners alone(Majumdar, 2019). The business has to account for a broader range of stakeholders, including the natural environment and future generations (Frynas et al., 2017). Henry et al. (2019) have expressed the challenges businesses face in balancing profits with the needs of the people and the planet, which has resulted in the low uptake of the TBL performance framework worldwide (Murray et al., 2017, Motiel et al., 2020).

The suggestion of the TBL performance framework by Elkington for the business of the 21st century intended to balance profit making with social equity and environmental protection (Walsh & Dodds, 2017; Horak, Arya & Ismail, 2018) in response to the commitment made by the nations on the agenda 21 on sustainable development. Elkington realized that the industry's environmental challenges needed a strategic approach to achieve the SD agenda's requirements (Walsh & Dodds, 2017). Therefore, Integration of the SD principles into business practices is a strategic issue that

requires the capabilities and the involvement of the business leadership (Henry et al., 2019, Rego et al., 2015). This includes the ability of the business leaders to weave the SD principles in the organisation's strategic management process at all levels (Montiel et al., 2020; Carmine & De Marchi, 2020; Schneider, 2014; Walker & Dyck, 2014) as well as transforming the organisational cultures to align with the SD requirements (Ivory & Brooks, 2018; Sullivan et al., 2017). TheWorld Business Council on Sustainable Development (WBCSD) was formed in response to agenda 21 of SD to influence business actions toward sustainable development (O'Reilly et al., 2018; Kolk, 2016), thus facilitating the uptake of the SD principles by the business community.

Given the low uptake of the TBL performance framework by the business community since the adoption of agenda 21 on SD, Stead & Stead(2015) suggested sustainable strategic management(SSM) to weave the SD principles into the strategic management process from the strategic levels through the functional levels to the operational levels(Borland et al., 2016). Murray et al. (2017) have supported weaving the SD principles at all levels in the organisation to facilitate the uptake of the TBL performance framework. This calls for a commitment to the TBL performance framework by the business leadership (Henry et al., 2019; Goergen & Tonks, 2019) and the reflection of the TBL performance in practice by the people at the lower levels (Mio et al., 2020; Murray et al., 2017).

Integrating the SD principles in the strategic management process of the business is a principle of responsible care (Mees & Smith, 2019) that results in the protection of the environment and social welfare (Horak et al., 2018) from the adverse effects of the business. The adoption of SSM, as suggested by Stead & Stead (2015) and Borland (2009) facilitates the uptake of the TBL performance framework for the 21st-century business. Rubio – Mozos et al. (2020) have also emphasized the

importance of a Sustainable Strategic Management Model (SSSM) to facilitate the uptake of SD to make practical contributions to the TBL performance.

1.1.1 *Sustainable Strategic Management (SSM)*

Conventional strategic management can no longer sustain the business of the 21st century (Stead & Stead, 2015, Henry et al., 2019). Hence Stead & Stead (2015)suggested SSM to facilitate the integration of the SD principles into the business practices after realizing that the business was slow in up taking the TBL performance framework(Rego et al., 2015; Murray et al., 2017) that Elkington introduced after the Rio Summit of 1992(Walsh & Dodds, 2017, Ferns et al., 2019). Montiel et al.(2020) have also highlighted the importance of integrating economic, environmental, and social considerations throughout strategic management and operational management processes to benefit the present and future generations (Borland et al., 2016; Rubio – Mozos et al., 2020). The business of the 21st century is expected to strike a balance on profit making, social equity, and environmental protection (Horak et al., 2018, Joseph et al., 2020) with considerations for future generations (Majumdar, 2019).

The choice to protect the environment by businesses is a competitive advantage, thus developing valuable rare, difficult-to-imitate, non-substitutable resources related to pollution prevention, product stewardship, and sustainable development (Borland et al., 2016; Chan et al., 2021). The natural environment and the stakeholders, including the future generations, constitute the business's external environment that requires positioning by the firm (Horak et al., 2018; Rubio – Mozos et al., 2020; Walsh & Dodds, 2017). Bias in businesses of the 21st century is still toward profit making disregarding their impacts on the people and the planet (Healy et al., 2015; Burrit et al., 2020; Joseph et al., 2020). The complexity of sustainable development and the diverse needs of the stakeholders (George et al., 2016; Walsh & Dodds, 2017; Horak et al., 2018) challenge the business

traditional focus on profit making. As a result, a new paradigm shift in strategic management is required to cater for societal and environmental needs (Borland et al., 2016; Engert et al., 2016; Rubio – Mozos et al., 2020) essential for the business of today.

Previous studies confirmed the importance of balancing financial, environmental, and social goals to achieve SD (Henry et al., 2019; Horak et al., 2018). Therefore, SSM has become a vital element in achieving SD through businesses (Burrit et al., 2020; Engert et al., 2016; Gabriel & Nathwani, 2014; Van Tulder et al., 2021). As a new paradigm for the 21st-century, businesses have not fully understood the theory and practice of SSM (Henry et al., 2019, Tollin & Christensen, 2019; Rego et al., 2015). Business leaders worldwide view the concept of SD theory as an abstract (Borland et al, 2016; Henry et al., 2019), causing the integration of SD strategies in the corporate strategies of businesses to be slow (Van Zanten & Van Tulder, 2020; Clementino & Perkins, 2021; Murray et al., 2017).

Economic performance indicators still dominate business performance evaluation at the expense of environmental protection and social development (Carmine & De Marchi, 2022; Joseph et al., 2020; Walsh & Dodds, 2017). Therefore to effectively balance the profits with environmental protection and social equity, performance measurement tools are required that would enable the measurement of the TBL performance (Burritt et al., 2020; Hansen & Schaltegger, 2016; Hristov et al., 2019). As a result, more research is needed to promote the theory and practice of SSM (Borland et al., 2016; Sullivan et al., 2017), thus facilitating the integration of SD into business practices (Ferns et al., 2019; Van Tulder et al., 2021). Thus increasing the uptake of the TBL performance framework as suggested by Elkington (Tarnanidis et al., 2019; Walsh &Dodds, 2017) for the 21st-century business.

Previous studies (Horak et al., 2018, Henry et al., 2019) have revealed some gaps in the practical guide to the industry on integrating the social, economic and environmental aspects in business practices (Montiel et al., 2020; Rego et al., 2015). Van Tulder et al. (2021) have also reiterated lack of practical guidance to the business sector on the implementation of SD by indicating the need for further research to demonstrate the support of the businesses to the SD agenda and contribution to international business (IB) scholarship. The background information on integrating the SD principles in business practices leads to the problem statement.

1.2 Statement of the Problem

The problem is that major trade effluent-generating industries in the Francistown region in Botswana are not fully integrating the SD principles in their business practices at various management levels, thus resulting in pollution problems. The industry's focus is on profit making and dividends, paying little attention to environmental protection and social development. Studies have revealed the importance of balancing profits with the safety of the environment and the people's welfare for 21st-century business (Dzhengiz & Niesten, 2020; Horak et al., 2018; Joseph et al., 2020). Keeping a focus on the financial gains and not balancing with environmental protection and the protection of the social welfare of the people may affect the businesses in the long run (Harrison & Felps, 2018; Martinez et al., 2016) due to pollution caused by trade effluents (Bhatia et al., 2017; Atuanya et al., 2018). Integration of the SD principles in the strategic management process of the business encourages the setting of green goals and targets (Borland et al., 2016, Horak et al., 2018), hence creating a balance in profit making and the protection of the planet and the people (Voronkova et al., 2019; Miska et al., 2018). The achievement of green goals and targets is a competitive advantage (Engert et al., 2016; Sullivan et al., 2017) that aligns the business with the global challenge of SD (Doh et al., 2017; Alexus & Furusten, 2020; Tesfaye & Fougere, 2021).

The chosen industries for this study have consistently failed to produce trade effluent quality that complies with the Botswana wastewater discharge standard (BOS 93:2012) for over 20 years, which is a pollution threat. The industry's engineering and scientific interventions including pre-treatment of the trade effluents before discharge into the main sewer line have not yielded positive results, prompting a different approach to solving pollution problems in these industries. Aggressive chemicals characterizing effluents released from these industries affect wastewater treatment at the end of the pipe. Previous studies have revealed that trade effluents from the manufacturing industries are the primary sources of water pollution (Peng et al., 2017; Bhatia et al., 2017; Ata & Tore,2019). Failure by the industry to comply with the national standards on pollution prevention violates the aspirations of the agenda 2030 on SD (Alexus & Furusten, 2020; Tesfaye &Fougere, 2021) that aims to end poverty, protect the environment and promote social welfare(Doh et al., 2017; Dobrovolska, 2018; Wysokinska, 2017). Therefore, a re-focus from profit making to balance the economic goals with the benefits to the planet and the people (Horak et al., 2018; Hahn et al., 2018) is a sustainable solution for the industry.

The uptake of the SD principles or the adoption of the TBL performance framework by the industry has to be included in the corporate strategy (Engert et al., 2016; Sullivan et al., 2017). Decisions made at strategic level have to be trickled down to the lower levels for implementation (Borland et al., 2016; Horak et al., 2018, Montiel et al., 2020). Traditional strategic planning is no longer suitable for business survival due to global challenges (Frynas et al., 2017; Walsh & Dodds, 2017; Miska et al., 2018). Therefore, the study proposes TBL performance framework reasoning (Ferns et al., 2019; Bilinska – Reformat et al., 2018) for these industries to balance profits with the needs of the planet and the people (Pedersen et al., 2018). Stead & Stead (2015), who suggested SSM to facilitate the business's TBL performance, has emphasized the importance

of implementing a sustainable strategy that involves the three levels of business management corporate, competitive, and operational. Borland et al. (2016) supported the importance of refocusing the business to benefit both the environment and the people where it exists.

The top leadership, which sets the organisational vision, mission, and values, has to connect with the operations that implement the organisation's sustainable development programs(Dzhengiz & Niesten, 2020; Henry et al., 2019; Beckman et al., 2014). A business that does not position itself to benefit the natural environment and all its stakeholders, including future generations, is no longer sustainable (Burritt et al., 2020; Van Tulder et al., 2021; Gabriel & Nathwani, 2014). Sustainable Strategic Management is the new paradigm shift that would help the business of the 21st century to be at a competitive advantage(Kuokkanen & Sun, 2019; Sullivan et al., 2017); this would also result in improved stakeholder relations, brand equity, profitability, resource efficiency, and company reputation (Borland et al., 2016, Horak et al., 2018).

The adoption of the TBL performance framework through the application of SSM is a challenge for organisations due to many factors, such as strategic agility(Ivory & Brooks, 2018) to adapt to the changing business environment as well as limited organisational internal capabilities(Borland et al., 2016; Henry et al., 2019). These include a lack of specialized skills in certain fields and limited leadership and management capabilities (Akhtar et al., 2018; Dobbins & Dundon, 2017) to facilitate the integration of SD principles at all levels (Dzhengiz & Niesten, 2020; Montiel et al., 2020). Although the global challenge (Doh et al., 2017; George et al., 2016) calls for a concerted effort between the Government and the business sector, no incentives are specified for good performance. Poor business leadership commitment, limited budgets, poor work ethics, and resistance to change contribute to the slow uptake of the SSM practice (Henry et al., 2019; Montiel et al., 2021).

1.3 Purpose of the Study

This qualitative case study aimed to investigate business practices in three (3) major trade effluent-generating industries in the Francistown region in Botswana to explore the integration of SD principles at various management levels and recommend solutions for improvement to the industry and Botswana Government. The three selected industries are the major trade effluent-generating industries in the Francistown region in Botswana and have consistently failed to comply with trade effluent quality requirements for over twenty(20) years as per the Botswana wastewater discharge standard(BOS 93:2012). Adopting the TBL performance framework (Horak et al., 2018; Walsh & Dodds, 2017) is a strategic solution to the pollution problem that has persisted for many years. The adoption of theTBL performance framework by the industry and having it weaved into the DNA of the organisation, starting from the corporate level, is a pollution prevention strategy (Engert et al., 2016, Sullivan et al., 2017), promoting the ideals of the circular economy (Ciliberto et al., 2021; Murray et al., 2017).

The expectation is that the Integration of SD principles into the corporate strategy for the chosen industries balances economic, environmental, and social goals (Borland et al., 2016, Henry et al., 2019). By doing so, the business will contribute to achieving Sustainable Development Goals (Tesfaye & Fougere, 2021). Business actions and government regulatory efforts have to be complementary to drive the SD agenda (George et al., 2016, Schere et al., 2016, Doh et al., 2017). Monitoring the SD initiatives alone at operational levels has proven not to be a solution to pollution by trade effluents, hence the need for a strategic approach. The study aims to explore the integration of SD principles into the chosen industries' strategic management process to assess the extent of SD practice in business. Previous studies have revealed that green strategies' integration into the traditional strategic management process improves resource efficiency, corporate image, and

stakeholder relationships (Dzhengiz & Niesten, 2020; Horak et al., 2018; Kuokkanen & Sun, 2019).

A sustainable strategy commits business leadership and operations to green practices (Borland et al., 2016). Studies have shown that the slow uptake of the TBL performance framework is due to the fragmentation between the sustainability strategy and the corporate strategy (Henry et al., 2019, Rego et al., 2015). The industry must view sustainability as a core value for the business to balance economic development with environmental protection and social welfare (Meijaard & Sheil, 2019; Miska & Mendenhall, 2018). Sustainable strategic practices are a competitive advantage and provide an opportunity for innovation in business process improvement and organisational efficiency (Adams et al., 2016; Mohsin et al., 2021). The SD agenda has mentioned innovations as necessary for achieving the goals, including green and social innovations (Testaye & Fougere, 2021). Sullivan et al. (2017) have also reiterated the importance of innovation to advance the SDGs and the need for research to demonstrate how businesses can set sustainability targets within their economic priorities.

1.4 Nature of the Study

The qualitative case study performed on three (3) selected major trade effluent-generating manufacturing industries in the Francistown region in Botswana intended to explore the practice of SD in the organisations in their natural setting (Marshall & Rossman, 2016, p.100, Creswell, 2016, p. 6). The study investigated the integration of sustainable development principles in business practices from the strategic to operational levels. The study design was a qualitative case study to enable an in-depth understanding of the selected organisations (Kalu & Bwala, 2017; Creswell, 2014, p.239). SD concept and the SSM theory, which is a new paradigm for the 21st-century business, grounded the study (Borland et al., 2016; Stead & Stead, 2015). The qualitative case study is the most suitable research method because it allows for exploring phenomena where there is little known (Creswell, 2016, p.13; Marshall & Rossman, 2016, p.6). The chosen research method approach for this study

provides an opportunity to interact with the subject to probe for more information, which cannot be achieved through quantitative or mixed research methods (Marshall & Rossman, 2016; Cresswell, 2014).

The qualitative case study design was the most preferred for this study because it allows learning the management setup in the chosen industries to identify areas of improvement. The study investigates sustainable business practices that must be studied in a typical organisational setting (Marshall & Rossman, 2016). Leadership, line managers, and some selected employees at operational levels in the chosen industries participated in semi-structured interviews. The study used ten (10) open-ended questions to collect qualitative data from the semi-structured interviews. Textual data collected through the semi-structured interviews were augmented with document reviews to improve the quality and rigor (Marshall and Ross. 2016; Creswell, 2016, p.266). Sources of documents for review were the public domain and the respective industries.

The advantage of the qualitative case study design is that it allows multiple methods of data collection to be used (Marshall and Ross, 2016). Hence improving the credibility and the trustworthiness of the data collected (Marshall and Ross. 2016, Creswell, 2016, p.266). The purpose of the study was to learn the management setup of the chosen industries. Therefore, other qualitative research approaches, including ground theory, ethnography, narrative research, and phenomenology designs (Marshall & Rossman, 2016, p.17; Creswell, 2016, p. 263, Merriam & Grennier, 2019, p.7), were not suitable for this study. Textual data collected from the semi-structured interviews and the document reviews were analyzed using content analysis (Elliot, 2018; Saladana, 2016).

1.5 Assumptions

The qualitative case study assumed that the information obtained from the semi-structured

interviews, document reviews, and literature review was valid to answer the research questions. This qualitative research assumes that the chosen field setting or the research participants are a source of valued information for the research topic (Yin, 2011, p.110; Marshall & Rossman, 2016, p. 2). These assumptions guide a qualitative inquiry (Creswell, 2016, p. 39) to ensure the qualitative study's reliability and validity (Yin, 2011, p.110). Several assumptions guided the study regarding the business entities' uptake of the SD principles. The fundamental assumption was that businesses had adopted the TBL framework as suggested by Elkington (Ciliberto et al., 2021; Walsh & Dodds, 2017) to actualize SD in their practices as per the Rio Summit of 1992(Dobrovolka, 2018; Helfaya et al., 2016).

The basis for this study was the SD theory, as explained by the Brundtland report of the World Commission on Environment and Development (Alexius & Furusten, 2020; Tesfaye & Fougere, 2021). Particular emphasis is paid on the SSM theory suggested by Stead & Stead (Stead & Stead, 2015, Borland, et al., 2016) to facilitate the uptake of TBL by business entities. Conventional strategic management can no longer sustain the business of the 21st century (Henry et al., 2019; Walsh & Dodds, 2017). Therefore companies have to align with the global challenge (Ferns et al., 2019), which is in line with the WBCSD vision of engraving the SDG's into business practices (Van Zanten & Van Tulder, 2018; O'Reilly et al., 2018).

Specific assumptions on this qualitative case study were that; (a) the qualitative case study on theselected three organisations is transferable to other management set-ups; (b) the researcher bias was removed on data collection and analysis by constant monitoring of the researcher experiences and feelings; (c) infusing the SD principles in the strategic management process of the chosen industries is viewed as a strategy for pollution prevention at its source; (d) the industry or the business entities are

currently not balancing the profit making, the needs of the people and the protection of the environment by setting green goals and targets which is viewed as a competitive advantage; (e) the research participants will answer the research questions with honesty and high ethical standards upheld throughout the research process.

1.6 Limitations

These are the weaknesses that are posed by the research approach to a study, and these limitations are generally derived from the conceptual framework and the study design (Marshall& Rossman, 2016, p.85). The study is framed on the SD theory and a new paradigm for the 21st-century business and has not been extensively researched (Borland et al., 2016; Murray et al., 2017). Peer-reviewed publications on the study were found to be limited. The study was conducted using case studies to learn the integration of SD principles in the management set-ups of three effluent-generating industries have chosen in Botswana's Francistown region. The results of the case studies could only be generalized for the studied cases (Creswell, 2016, p.267). However, the results can be replicated for other situations or management setups (Marshall & Rossman, 2016, p.85; Ridder, 2017).

Data collection for the study was done through semi-structured interviews and document reviews. Semi-structured interviews were conducted using a speakerphone, and documents were collected from the respective industries using e-mail and the internet. Data was collected during the COVID -19 pandemic when movements were restricted in Botswana. Conducting interviews using a telephone can be a disadvantage because you miss the interviews observations and verbal cues of the interviewees. These have also put some limitations on the researcher to be in the same space as the research participants to build rapport. The level of understanding of the SD principles by the research participants may have placed some limitations in answering the research questions. The use of Interview protocols provided consistency in conducting the interviews, and clarifications made

during the interviews caused understanding of the questions to the research participants.

1.7 Delimitations

These are the boundaries that are set for the study to control the scope and enable ease of management of the study (Cresswell, 2016, p.69; Marshall & Rossman, 2016, p.247). The study focused on exploring the SD principles in the strategic management processes for the three-trade effluent-generating industries selected in the Francistown region in Botswana. The geographic location of the study area was Francistown in Botswana, and focusing on trade effluent-generating industries defined the scope of the research study. Many other manufacturing industries in Francistown were not chosen for this study to narrow the scope. Thirty (30) research participants were chosen from a population of over seven hundred employees in the selected industries. Purposive sampling (Marshall & Rossman, 2016; p.260; Creswell, 2016, p.109; Ridder, 2017) was used to ensure that the chosen research participants could answer the research questions. Mostly peer;–reviewed journal articles published in the Academic Journal Guide, 2015 of the Association of Business Schools were used to research on the study topic to maintain the quality of the study. The search concentrated on peer-reviewed journal articles published between 2017 and 2022 to provide the most recent information.

1.8 Significance of the Study

The study investigated the integration of SD principles in business practices for trade effluent-generating industries. The study is anchored on the SD concept (Adams et al., 2016; Kolk, 2016), particularly the SSM theory and practice (Stead & Stead, 2015, Murray et al., 2017). SSM practice enables the weaving of the SD principles into the strategic management process of the business, thus facilitating the uptake of the TBL performance framework that Elkington suggested (Walsh & Dodds, 2017) for the industry after the UNCED in Rio de Janeiro in Brazil in1992(Dobrovolka, 2018, Helfaya; Kotb & Hanafi, 2016). In response to agenda 21, Elkington realized the industry needed a

strategic approach to tackle the environmental challenges associated with industrial operations (Ferns et al. 2019; Dhopte & Sinha, 2016). Industrial growth is never without environmental challenges, such as pollution due to emissions and effluent discharges (Doh et al., 2017; George et al., 2016; Mohsin et al., 2021). The TBL performance framework suggested by Elkington is ideal for curbing these challenges by balancing economic growth with environmental protection and social development (Walsh & Dodds, 2017; Horak et al.,2018).

The World Business Council for Sustainable Development (WBCSD) has adopted the SDGs to guide their vision for 2050(O'Reilly et al., 2018). Therefore, adopting the TBL performance framework (Horak et al., 2018), and weaving the SD principles into the strategic management process of trade effluent-generating industries supports the aspirations of the WBCSD vision (Kolk, 2016). There are benefits in balancing profits with the needs of the planet and the people, such as a positive image, trust with stakeholders, the efficiency of resource management, superior return on investment, increased profits, and competitive advantage (Mees & Smith, 2019; Horak et al., 2018; Mena et al., 2016, Jones et al., 2018). Studies have revealed that companies in Australia survived the economic recession of 2009 due to their excellent corporate governance influenced by the SD principles (Mees & Smith, 2019; Goegen & Tonks, 2019).

The results of this study will influence the culture of sustainability (Schere et al., 2016, George et al., 2016) in trade effluent-generating industries. Thus, promoting responsible care (Montiel et al., 2020) protects the environment from pollution and imparts social change to people's lives (Frynas & Stephens, 2015; Mohsin et al., 2021; Schere et al., 2016). Studies have indicated that since the adoption of agenda 21 and the suggestion of the TBL performance framework by Elkington for the industry, the uptake of SD principles by the business has been slow(Mio et al., 2020; Murray et al.,

2017). The slow rate of the uptake of SD principles was caused by a lack of practical guidance to the business (Henry et al., 2019). Mainstreaming SD principles across all development and decision-making were also found lacking and complex (Benkert, 2021; Montiel et al., 2020). This study will provide practical guidance on SD principles in businesses, hence a competitive advantage (Carmine & De Marchi, 2022; Borland et al., 2016). The advancement of SD in businesses is a sustainable solution for pollution prevention at the industry level, hence improving public policy on SD (Clementino & Perkins, 2020; Doh et al., 2017).

Engineering and Scientific interventions implemented in the past to curb pollution in the chosen industries have not yielded positive results. The industry has failed to meet the effluent quality discharge over the years. A strategic approach is being considered to commit top business leadership to sustainability issues and break the norm of fragmentation between corporate and sustainability strategies (Borland et al., 2016; Henry et al., 2019). Commitment to SSM practice and the TBL performance framework by the leadership influences the organisational culture towards sustainable actions (Meijaard & Sheil, 2019; Miska & Mendenhall, 2018), hence compliance with the national standards on pollution prevention and control. The adoption of the SD principles influences innovation, partnerships, and strategic positioning for the industry (Sullivan et al., 2017; Engert et al., 2016; Tesfaye & Fougere, 2021).

The SDGs are a global challenge (George et al., 2016) identified for future research in international business and management (Kolk, 2016; Van Tulder et al., 2021). Therefore, this study is an advancement of the SD theory, particularly the SSM theory, a new paradigm for the 21st-century business (Henry et al., 2019; Stead & Stead, 2015). Understanding the SSM theory by scholars will contribute to a body of knowledge on the SD concept, particularly the application of SSM. This would

provide guidance to the industry to weave the TBL into the strategic management process to balance the three pillars of SD. This means balancing profit making with environmental protection and social development (Horak et al., 2018, Henry et al., 2019). The study also provides some baseline data for quantitative analysis of the strategic benefits of SD principles for the business of the 21st century. Currently, there is limited research on the theory of SSM (Rego et al., 2015, Murray et al., 2017).

1.9 Qualitative Research Questions

Three (3) qualitative research questions were developed to guide the qualitative case study. The research questions developed for this study compared with the previous studies (Koksal et al., 2017; Busseto et al., 2020; Lindfors, 2020). The study conducted by Lindfors (2020) assessed the contribution of sustainability solutions to the sustainable development agenda using a qualitative research approach. Based on the method by these scholars (Koksal et al., 2017; Busseto et al., 2020; Lindfors, 2020), three (3) major qualitative research questions were developed for this qualitative case study

RQ1. How are the Sustainable Development (SD) pillars of economic growth, environmental protection, and social development embedded into the business practices in trade effluent-generating industries at various levels of management?

RQ1 was further broken down to form three sub-research questions, which addressed the three pillars of SD as;

RQ1.1. How is economic development embedded into business practices in trade effluent-generating industries at various levels of management?

RQ1.2. How is environmental protection embedded into business practices in trade effluent-generating industries at various levels of management?

RQ 1.3. How is social development embedded into business practices in trade effluent-generating industries at various levels of management?

RQ2. What are the challenges faced by the trade effluent-generating industries when balancing financial gains with environmental protection and social development?

RQ3. How does integrating sustainable development principles into the industry's strategy benefit the trade effluent-generating industry?

Semi-structured interviews were conducted in the three (3) selected trade–effluent-generating industries to answer the qualitative research questions targeting the three levels of management: corporate, business, and functional. Interview questions were developed based on the literature on SSM (Henry et al., 2019; Murray et al., 2017; Rubio – Mozos et ta.,2020), SD theory, and the TBL performance framework(Hahn et al., 2018; Joseph et al.,2020; Koksal et al., 2020). The research study developed the following interview questions to conduct semi-structured interviews. Research participants selected from the three (3) chosen industries generated qualitative data.

1. Explain the meaning of Sustainable Development (SD).
2. What does the SD agenda 2030 intend to achieve?
3. How have you included the SD principles in your business practices?
4. What strategies do you use to calculate SD principles at all management levels in theorganisation?
5. How is the implementation of the SD initiatives assessed in the company's performance?
6. What are the company's challenges when implementing the SDinitiatives?
7. How do you balance your company profits with environmental protection and the socialwelfare of the employees and the stakeholders?
8. How does the company communicate sustainability issues with its employees and stakeholders?
9. Explain the benefits of including SD principles in the company's business practices.

10. What else can you tell me about the SD principles concerning your business practicesand the future of your company?

1.10 Summary

A qualitative research approach explored the application of the SD theory in trade effluent-generating industries to curb pollution at the industry level. A strategic approach to pollution prevention (Chan et al., 2021) by the trade effluent-generating industries was viewed as a sustainable solution to the long-term pollution problems in the area. Lindfors (2020) has demonstrated the positive contributions of sustainability solutions to the advancement of the SD agenda. The achievement of this global agenda is anchored on its alignment with the national strategies (Borgstedt et al., 2017), which in this case is also a benefit to the Africa Agenda 2063, "The Africa We Want." Therefore, a concerted effort between the governments and the business community is essential for pollution prevention and the achievement of the SD agenda (Van Zanten & Van Tulder, 2018). The literature review conducted in this study provided learning from other scholars on the integrative approach to SD principles in business before data collection and analysis.

CHAPTER 2: LITERATURE REVIEW

This qualitative case study aimed to investigate business practices in three (3) major trade effluent-generating industries in the Francistown region in Botswana to explore the integration of SD principles at various management levels and recommend solutions for improvement to the industry and the Botswana Government. The study selected three major trade effluent-generating industries in the Francistown region in Botswana. These industries had consistently failed to comply with the required trade effluent quality for the past 20 years. Integration of SD principles into the corporate strategies of the chosen industries will balance economic, environmental, and social goals (Henry et al., 2019; Joseph et al., 2020). Business actions and government regulatory efforts have to be complementary for the achievement of Sustainable Development Goals (Doh et al., 2017; Schere et al., 2016; van Tulder et al., 2021). The theory of SD is a policy issue aimed at the national level; businesses may see this as an opportunity for strategic positioning, building partnerships, and creating innovations (Sullivan et al., 2017; Tesfaye & Fougere, 2021).

Topics researched to explore the integration of SD principles in business practices of the chosen industries included the theory of SD, SSM, the TBL, Trade Effluents, Organisational Culture & Learning, and Globalisation. Keywords used for searching articles included *Sustainable Development, the evolution of sustainable development, sustainable strategic management, sustainability, corporate sustainability, triple bottom line, trade effluents, brewery effluents, textile effluents, abattoir effluents, organisational culture, organisational learning, corporate governance, globalisation, international business, Stakeholder management,* etc. Searching using a combination of these keywords yielded valuable articles for the literature review.

2.1 Conceptual Framework

SD was defined by the Brundtland report (Adams et al., 2016, p.3; Hosta & Zabkar, 2021) as

"meeting the needs of today without sacrificing the future generations' ability to meet their needs." Recognition of the concept by the international community was through the adoption of Agenda 21 on SD in Rio de Janeiro in 1992(Martinez et al., 2016; Walsh & Dodds, 2017). Since then, the concept has been evolving, resulting in the MDGs in 2000(Dobrovolska, 2018, Sullivan et al., 2017) and SDGs in 2015(Mio et al., 2020; Tesfaye, & Fougere, 2018; Van Tulder et al., 2021).

The aim of the SDGs is to end poverty, protect the environment, and promote social welfare by the year 2030(Wysokinska, 2017, Dobrovolska, 2018, Howlett & Saguin, 2018). These are broad, ambitious goals, which are the blueprint for the SD agenda to year 2030, classified as the grand challenges (Carmine & De Marchi, 2022; Doh et al., 2017; Kolk, 2016). Hence, a concerted effort is required from the government, the business community, and society for achievement (Benkert, 2020; Burritt et al., 2020; O'Reilly et. al., 2018). SD's anchor is the three pillars of economic growth, environmental protection, and social development (Baumgartner, 2014, Horak et al., 2018, Hahn et al., 2018). The promotion of SD in policymaking and research to achieve the 2030 agenda is evident (Kolk, 2016; Howlett & Saguin, 2018; Van Zanten & Van Tulder, 2020). Integrating SD principles into business practices is a competitive advantage and a contemporary paradigm shift to address social and environmental challenges (Bilinska - Reformat, 2018, Horak, 2018) that result due to economic growth (Villamil et al., 2021; Walsh & Dodds, 2017).

The inclusion of SD as a business strategy dimension appeared after the Rio summit of 1992(Walsh & Dodds, 2017, Engert et al., 2016). Elkington realized the environmental challenges facing the industry that were of strategic importance. These environmental challenges needed consideration in the business strategy to balance with the economic gains (Dhopte & Sinha, 2016; Ciliberto, 2021; Walsh & Dodds, 2017). Hence, the suggested TBL approach for balancing the

environmental, social, and economic performance goals (Dzhengiz & Niesten, 2020; Henry et al., 2019).

Today's industry cannot just focus on profit making without considering its impacts on the environment and the welfare of the people, including the future generations (Horak et al., 2018). The natural environment, the external stakeholders, and the future generations are considered for the industry's positioning in strategic planning (Bilinska - Reformat, 2018; Puglieri et al., 2022). Strategy formulation, implementation, and execution for the 21st-century business must address the SD concept (Edwards, 2020; Mio et al., 2020). The TBL framework provides the basis for sustainability planning and reporting, leading to the desired sustainable development outcomes (Qeke & Dubihlela, 2018; Ferns et al., 2019).

The study focused on exploring SD mainstreaming into the business practices in trade effluent-generating industries. These types of industries fall under manufacturing industries and discharge a lot of wastewater. Integrating SD in business practices throughout the organisation's management levels (Mio et al., 2020; Engert et al., 2016) changes the organisational culture toward sustainable development (Borland et al., 2016; Joseph et al., 2020). The paradigm shift from traditional strategic management(Ahammad et al., 2020; Su et al., 2016) to sustainable strategic management(Edwards, 2020; Rego et al., 2015; Rubio – Mozos et al., 2020) is a solution to pollution prevention at the industry level(Chan et al., 2020). Effluent discharge and emissions from the industry results in negative environmental and social impacts such as industrial pollution (Ahammad et al., 2021), water pollution, and environmental degradation (Lamb et al., 2017; Qeke & Dubihlela, 2018; Villamil et al., 2021).

Industrial practices are incompatible with sustaining life on the planet(Dobrovolska,2018;

Lamb et al., 2017), and diffusing SD principles into these practices will adapt the organisations to the contemporary environment (Julius et al., 2016, Bilinska – Reformat et al., 2018). Businesses tend to maximize profits (Baumgartner, 2014; Clementino & Perkins, 2019; Carmine & De Marchi, 2020) and pay little attention to the impacts caused by their operations on the natural environment and the welfare of the people (Henry et al., 2019; Ciliberto et al., 2021; Chan et al., 2021). An imbalance in managing the three aspects of SD is a problem for the business in the long run (Martinez et al., 2016, Schrempf – Stirling et al., 2016; Joseph et al., 2020; Puglieri al al., 2022). Sustainability outcomes and stakeholder benefits are connected. Hence, the business of the 21st century needs to look beyond profit making and consider the associated issues such as poverty alleviation, sustainable supply chains, and biodiversity conservation (Edwards, 2020; Sullivan et al., 2017; Tarnanidis et al., 2019).

Irresponsible care for the planet and the people's welfare by the industry may result in poor company reputations (Mena et al., 2014; Jones et al., 2018; Low, 2016) and loss of biodiversity (Sullivan et al., 2017; Carmine & De Marchi, 2022). Literature has revealed that large companies such as Ford and General Motors lost the respect and trust of their customers in the 50s for irresponsible care, which they had to restore to regain their reputation (Martinez et al.,2016). Such actions may cost the business in the future and affect future generations. Volkswagen and IBM had to pay for their past irresponsible actions made by the prior generations of managers. These past actions affected the present generation (Schrempf – Stirling et al., 2016).

Companies in the past practiced Corporate Social Responsibility (CSR), which dates back to the twentieth century, to cater to the people's needs and the planet (Jamali, 2017; Pisani et al., 2017; Low, 2016). CSR activities have proven not to be adequate for the business of the twenty-first century because there are viewed as isolated philanthropic actions and for legitimizing the company's actions

(Martinez et al., 2016, Stirling et al., 2016). SSM is the new paradigm shift for businesses to interweave the TBL with strategy elements to gain a competitive advantage in the 21st century (Carmine & De Marchi, 2022; Dhopte & Sinha, 2016; Edwards, 2020; Joseph et al., 2020) including the CSR activities(Kuokkanen & Sun, 2019).

Case studies explored the business practices at different management levels in the three selected trade effluent-generating industries, as suggested by Baumgartner (2014). Integrating SD principles into the strategic management process of the industry provides the contemporary paradigm (Mio et al., 2020; Edward, 2020) to address the industrial challenges upstream of the value chain (Bilinska – Reformat et al., 2018; Martinez et al., 2016). SD principles are dynamic and can be adopted into different business management models to effect continuous improvement (Montiel et al., 2020; Puglieri et al., 2022). SSM was found to be a strategic solution to industrial pollution problems (Chan et al., 2020; Ciliberto et al., 2021; Baumgartner, 2014) and, at the same time, tackle global challenges on SD (Carmine & De Marchi, 2022; Doh et al., 2017). The strategic inclusion of SD in business is in line with the principles of industrialecology (IE) that support the integration of sustainability into business practice for breakthrough performance to deliver sustainable business activities (Kuokkanen & Sun, 2019; Puglieri et al., 2022; Sullivan, 2017).

The implementation of SSM will enhance company reputation, stakeholder relationships, brand equity, resource efficiency, and competitive advantage (Bilinska - Reformat, 2018; Jones, 2018; Kuokkanen & Sun, 2019; Qeke & Dubihlela, 2018). However, complete integration of the SD principles in business practices is affected by a lack of human resource skills, lack of commitment by leadership, resistance to change, organisational culture, poor work ethics, and limited budgets (George et al., 2016, Henry et al., 2019, Horak et al., 2018). The study aims to identify opportunities and

challenges for the selected industries by incorporating SD principles into their business practices, from strategic decision-making to the operational levels (Burritt et al., 2020; Engert et al., 2016, Puglieri et al., 2022).

2.2 Industry Description

The study was based on the major trade effluent-generating industries in the second-largest city in Botswana, the City of Francistown, and in Tonota village, situated 15km away from Francistown, respectively (Figure 1). These facilities are the region's most significant wastewater-producing manufacturing industries that discharge industrial effluent directly into the sewer line. The two industries in the City of Francistown are a textile industry that manufactures towels and a brewery. In contrast, the industry in Tonota village is a textile industry that manufactures t-shirts. These major trade effluent-generating industries contribute positively to the country's employment rate through a workforce of $300 \leq 500$. Their existence contributes to poverty alleviation through employment creation in their local communities. They also positively contribute to the nation's Gross Domestic Product (GDP).

Edwards (2020) has described economic growth as a double-edged sword where industry contributes to creating wealth and employment while affecting the planet and the people due to its discharges and emissions. Likewise, the major trade effluent-generating industries chosen for this study are a major pollution threat in the area due to the release of untreated or partially treated trade effluents into the sewer line. The industrial effluents generated from these industries' operations harm the environment and the social welfare of the people due to pollution requiring a strategic focus(Carmine & De Marchi, 2022) to balance the environmental, social, and economic outcomes(Benkert, 2020; Burritt et al., 2020). The industry had implored end-of-pipe discharge into the sewer line. These reactive environmental measures (Chan et al. 2020), which are engineering and

scientific innovations, have not yielded positive results for over twenty (20) years.

Hence, solving pollution problems caused by wastewater discharge by these industries using the end of pipe strategies (Chan et al., 2020) has proven futile, calling for strategic action at the industry level. Pollution problems are systemic, and pollution prevention & control requires the involvement of the whole organisation (Mio et al., 2020). These include aligning all the business practices at all levels of management, including the corporate level, business management level, and functional level, with sustainable business practices (Burritt et al., 2020; Mohsin et al., 2021). The decisions made at the corporate level have to influence the actions taking place at the operational level (Benkert, 2021). Hence, the business leadership has to cultivate a culture of sustainability in the whole organisation (Edwards, 2020; Montiel et al., 2020).

2.2.1 *Industry Documents Review*

The industry has tried to embrace the SD principles through its policy documents. The Brewery has put in place comprehensive policy statements on safety, health, and environment to guide their employees and stakeholders on the requirements of SD. The environmental policy at the Brewery pivots on the SD definition as per the Brundtland Report (Adams et al., 2016, p.3; Hosta & Zabkar, 2021, p.273). The statement of their environmental policy read, "We are committed to sustainable development by operating in an environment that meets the needs of present and future generations" (Kgalagari Breweries PTY (LTD), 2019). The environmental policy at the brewery strongly advocates for pollution prevention through the sustainable use of natural resources and the promotion of reuse, reduction, and recycling strategies. Audits conducted by the industry to verify safety, health, and environmental management, including effluent discharge, follow international standards such as the NOSA integrated five-star system. The results of the previous audits conducted in the industry had indicated non – compliance to the discharge requirements by the industrial effluents, and treatment

before discharge into the sewer system was recommended. This non-compliance contributes to the national pollution problems (Fig 2) that threaten both the environmental quality and public health.

Botswana's textile and apparel sector is vital to the nation's economic growth. The sector is a source of semi-skilled employment that alleviates poverty and generates export revenue. The Government of Botswana influences the textile and apparel sector exports through free access to markets in Lesotho, Namibia, South Africa, and Swaziland through the Southern African Customs Union (SACU) agreement. The African Growth and Opportunity Act (AGOA) enacted by the US in 2000 for Sub–Saharan African countries also plays a significant role by providing access to the US markets with some incentives. The textile and apparel sector in Botswana has benefitted from this arrangement. The workforce in this sector is comprised of women alleviating poverty in many households. The sector is challenged by a shortage of skills that limits the industry from entering into higher value–add stages of the textile value chain, production inefficiencies due to lack of capacity, high input costs due to the high cost of raw materials and utilities such as water and electricity. Botswana is a landlocked country causing the cost of transportation to be very high via land. Connections between the textile firms in Botswana and the region are poor, lacking depth of coordination between trade organisations.

The two textile industries chosen for this study form the backbone of the textile and apparel sub-sector in Botswana. The combined workforce in these two industries is ~ 520. The textile company based in Francistown produces towel products ranging from terry towels, napkins, beach towels, etc. The company is SABS ISO 9001:2008 certified and has built a reputation among its customers for quality and reliability. The company supplies domestic markets and exports to the Republic of South Africa (RSA), Mauritius, Tanzania, Zimbabwe, and Namibia. The company prides

itself in being the leading supplier of top–quality cotton towels to the global market. The company in Tonota produces t-shirts and men's underwear. The company started operating in the year 2000 with a workforce of 800, which has now dropped to 150 because they lost the markets in the US and UK due to competition. There are currently selling to the local markets as well as Zimbabwe and RSA. Textile manufacturing industries produce large volumes of wastewater polluted with dye material, chemicals, additives, salts, and surfactants (Sahinkaya et al., 2019; Oktem et al., 2019). The two textile industries chosen for this study are no exception. Therefore, proper wastewater management and pollution prevention interventions are required to curb the pollution at its source to support the grand challenge of SD.

2.3 Definition of Terms and Concepts

Corporate Social Responsibility: A business model that helps the company to cater for the social needs of the communities where they operate (Crifo et al., 2019; Fisher et al., 2020).

Globalisation: An extensive network of political, economic, cultural, and social interconnections due to the flattening of national borders influenced by technological advancements (Galbreath, 2019; Ghobakhloo et al., 2021).

Organisational Culture: A set of values and norms that promotes the desired behaviours for achieving the organisational vision and mission (Obediet et al., 2020; Li et al., 2022).

Organisational Learning: The process of creating, retaining, and transferring knowledge in an organisation to facilitate change and cause improvements (Abbas & Sagsan, 2019; Feeney et al., 2022).

Sustainable Development (SD): Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (Hosta & Zabkar, 2021).

Sustainable Strategic Management (SSM): A transformational change from the closed-system strategic management to the open-system paradigm that allows strategic managers to focus on economic value as well as ecological and social value (Stead & Stead, 2019; Takacs et al., 2022).

Stakeholders: All those who are interested or are affected by the business, including employees, customers, suppliers, financiers, communities, government authorities, non-governmental organisations(NGO), political groups, shareholders, as well as the future generations(He et al., 2020; Stead & Stead, 2019; Wang et al., 2021).

Trade Effluents: Industrial wastewater discharged directly into the sewer line.

Triple Bottom Line (TBL): A performance measurement framework that measures the financial impacts and social and environmental effects in business entities (Sheth & Parvatiyar, 2021).

2.4 Sustainable Development (SD)

The concept of SD emerged at the UNCHE in Stockholm in 1972(Kolk, 2016; Dobrovolska, 2018). By then, the world was concerned with the impact of human activities on the environment considering the exploitation of natural resources in economic development (Dutra & Senna, 2017). At the emergence of the concept, the focus was on the limits of the environment in handling products (Dobrovolska, 2018) without necessarily considering the impacts of economic growth on the social welfare of the people (Adams et al.,2016; Akyuz, 2021; Jedrzejczak – Gas, 2019). The use of natural resources to meet the needs of today was causing some imbalances that resulted in a significant economic gap between the high–income and the low-income (Dobrovolska, 2018).

The theory took shape in 1987 through the Brundtland report "Our Common Future," which considered socio-economic aspects (Nadeem et al., 2017; Martinez et al., 2016). The Brundtland report defined SD as "meeting the needs of today without sacrificing the future generations' ability to meet their needs" (Adams et al., 2016, p. 6; Hosta & Zabkar, 2021). The Brundtland report gave the theory of SD an anthropocentric view compared to the Stockholm conference, which was solely ecocentric (Akyuz, 2021; Jedrzejczak-Gas & Barska, 2019), excluding the human aspect (Borland et al., 2016). According to Dobrovolska (2018), the Stockholm conference, commonly known as the

UNCHE, focussed on population growth and the limits of nature and not considering the imbalances caused by economic development to the welfare of the people. The Brundtland Report analysed issues such as international security, resource scarcity, overpopulation, and social exclusion and converged them into a single comprehensive concept that resulted in the institutionalization of a transnational sustainable development regime, thus encouraging interaction between the different actors (Alexus & Furusten, 2020; Sasse – Werhahn, 2020).

The main conclusion of the Brundtland report was that the significant environmental problems resulted from poverty in one part of the world and unsustainable consumption and production in the other. The report then proposed to strive for sustainable development based on the three pillars: economic viability, environment protection, and social and ethical acceptance. The "Brundtland report" aimed at safeguarding biodiversity, improving environmental quality, and protecting human and ecosystem health (Hens et al., 2018; Johnsen, 2021). The International community adopted SD through the Agenda 21 of the UNCED in Rio de Janeiro in 1992(Akyuz, 2021; Walsh & Dodds, 2017), intending to protect the environment and the well-being of the people in economic growth (Kolk,2016; Martinez et al., 2016). The anthropocentric view of SD attracted international recognition (Akyuz, 2021; Dobrovolska, 2018), and the theory has been evolving since then (Kolk, 2016; Tesfaye & Fougere, 2021).

2.4.1 ***Agenda 21 on Sustainable Development***

The international community to balance economic growth with environmental protection and the social welfare of the people (Dobrovolska, 2018, Helfaya et al., 2016, Kolk, 2016) adopted the agenda of the 21st century, commonly on SD, widely known as the agenda 21 on sustainable development. Agenda 21 has twenty (27) principles that guide environmental policy development at the local level by various governments (Dobrovolska, 2018; Zacher et al., 2921). The agenda broadly

explains the requirements of SD, focusing on all levels of social organisation in every area in which human activity affects the environment (McDonald et al., 2019). The document is intergovernmental and was formulated at the UNCED and adopted by the UN General Assembly in 1992. Agenda 21 on SD is divided into four(4) sections, which are; (a) Social and Economic Dimensions; (b) Conservation and Management of Resources for Development; (c) Strengthening the Role of Major Groups; and (d) Means of Implementation(Saner et al., 2019). Agenda 21 also explained therole of business and civil society in achieving SD (Walsh & Dodds, 2017; Zacher et al., 2021). The business community responded to agenda 21 of SD by the formulation of the Business Council for Sustainable Development (BCSD) and the World Industry Council for the Environment (WICE). These two entities later merged in 1995 to form the WBCSD to influence business leadership towards sustainable development (Kolk, 2016; Martinez et al., 2016; O'Reilly et al., 2018).

Scholars believed the formation of the WBCSD was a global partnership focused on exploring sustainable development alternatives for businesses, sharing knowledge, experiences, and efficient practices. The power and impact of this partnership lie in its cooperation with governments, NGOs, and intergovernmental organisations, running and financing the business initiatives and corporate sustainability (Burritt et al., 2020; Martínez et al., 2016). The WBCSD has affirmed its commitment to the SD agenda in its vision statement. The vision statement articulates the WBCSD's strong commitment to translating the SDGs into action. As established by the United Nations, the SDGs are ambitious policy goals intended for adoption by the business to solve problems and move beyond business as usual. These solutions are likely to assist the companies in risk management, the anticipation of consumers' demand, building positions in growth markets, strengthening the supply chains, and securing access to the needed resources (O'Reilly et al., 2018)

The WBCSD is comprised of CEOs of major international companies whose focus is on creating a sustainable future for the business, society, and the environment through a vision-to-action plan. However, this work often does not trickle down to help managers engage with sustainability issues concerning their values and daily practice (Allen et al., 2019). The establishment of the Principles of Responsible Investment (PRI) further enhanced these efforts in 2005 as part of the UN Global Compact to introduce international standards for business sustainability (Mees & Smith, 2019). Since 1992, SD has been growing, resulting in the MDGs, which aimed at reducing extreme poverty by the year 2015(Doh et al., 2017; Mio et al., 2020).

2.4.2 *The Transition from the MDGs to the SDGs*

The MDGs were formulated at the New York summit of 2000(Dobrovolska, 2018; Lewis et al., 2021) to fight poverty to the year 2015(Ja Kim & Hall, 2021; Mukhi & Quental, 2018; Wysokinska, 2017). The MDGs were the commitments of United Nations Member States to reduce extreme poverty in all its forms: hunger, disease, gender inequality, lack of education and access to basic infrastructure, and environmental degradation (Mio et al., 2020; Wysokinska, 2017; UN, 2000). The MDGs had quantitative objectives targeting the year 2015(Mukhi & Quental, 2018). They played a pivotal role in international development policy by outlining the responsibilities of the rich countries to support developing countries through aid, debt relief, and improved market access (Ja Kim & Hall, 2021; Mukhi & Quental, 2018). The UN has made concerted attempts to introduce societal goals into economic policies and actions through the MDGs. These were followed by the SDGs, which represent the frameworks intended to guide policy, the actions of the private sector and the civic society, as well as the social welfare outcomes (Buckley, 2018; Van Tulder et al., 2021; Zacher et al., 2021).

The Millennium Declaration of 2000 approved eight goals for the international community, primarily focused on developing countries (Ja Kim & Hall, 2021; Wysokinska, 2017) to end poverty

by the year 2015(Mukhi & Quental,2018). The eight Millennium Development Goals contained in the Declaration are:

1. Eradicate extreme poverty and hunger.
2. Achieve universal primary education.
3. Promote gender equality and empower women.
4. Reduce child mortality.
5. Improve maternal health.
6. Combat HIV/AIDS, malaria, and other diseases.
7. Ensure environmental sustainability.
8. Develop a global partnership for development.

The MDGs expired in September 2015(Mio et al., 2020; Mukhi & Quental,2018; Sullivan et al., 2017) and were replaced by the SDGs, which were adopted by the world community in January 2016(Doh et al., 2017; George et al., 2016; Kolk, 2016). These are the seventeen (17) universal objectives to reduce extreme poverty, inequality, and social injustice, protect the planet and ensure economic prosperity by the year 2030(Dobrovolska, 2018; Ciliberto et al., 2021; Wysokinska, 2017).

The main difference between the MDGs and the SDGs is that the SDGs are more universal, more positively framed, partnering centred and opportunity based, and apply to developed and developing countries (Mio et al., 2020). The MDGs were primarily focused on developing countries and were state state-centred, negatively framed, and duty-based (van Zanten & van Tulder, 2018). The SDGs are universal goals with more details with explicit targets and indicators targeting the year 2030(Doh et al., 2017; Van Tulder et al., 2021). Compared to the MDGs, which were difficult to measure, the SDGs makes it better to facilitate implementation, monitoring, and evaluation (Ja Kim & Hall, 2021; Mukhi & Quental, 2018). The whole purpose of the SDGs is to drive the SD agenda to the

year 2030 (Alder, 2016; Dobrovolska, 2018; Wysokinska, 2017) in an inclusive manner, leaving no one behind (Wysokinska, 2017). Scholars classify these global goals as the grand challenges (GC's) (Doh et al., 2017; Carmine & De Marchi, 2020), and they have been identified for future research in International Business (IB) and management research (Kolk, 2016; Van Tulder et al., 2021).

The SDGs are an intergovernmental agreement that was formulated based on a multi-stakeholder engagement process – that urges the business community to help solve developmental challenges through strategic positioning, partnerships, and innovations (Mc Donald et al., 2019; Mukhi & Quental, 2019; van Zanten & van Tulder, 2018). Hence, all socio-economic sectors are encouraged to contribute to the SDGs to promote sustainable development (Allen et al., 2019; Van Tulder et al., 2021). The SDGs are ambitious and does not only require a commitment from the business community alone but instead require a collaborative effort between the governments, businesses, research institutions and non –governmental organisations to solve broader business and public policy challenges (Doh et al., 2017; Mio et al, 2020; van Zanten & van Tulder, 2018). There is limited knowledge on the business responses to the SD agenda (Clementino & Perkins, 2020). Limited knowledge on SD practice is attributed to inadequate methods and tools for sustainability performance evaluation (Hosta & Zabkar, 2020) and role clarity on the business' contribution to the agenda (van Tulder et al., 2021; van Zanten &Van Tulder, 2018). The WBCSD has responded positively to the SDGs by committing to translate the ambitious SDGs into business actions. The SDGs are enshrined into the WBCSD vision 2050 roadmap to achieve a global society within the planet's limits (Carreno et al., 2011; O'Reilly et al., 2018).

The SDGs put a lot of emphasis on the importance of corporate efforts in realizing sustainable development, and the statements made by the then-UN Secretary-General Ban Ki-moon, evidence this.

Ban Ki-moon urged Governments to take the lead in living up to their pledges. At the same time, he highlighted the importance of the private sector in driving the SD agenda. Helen Clark, the then head of the UN Development Programme shared the same sentiments that the new sustainable development agenda required action from the business community. Business representatives who were involved in the creation of the SDGs as stakeholders responded supportively to the idea of corporate sustainability to facilitate the SD agenda (van Zanten & vanTulder, 2018). Therefore, the business community has to align its actions with government policies and strategies to balance economic growth with environmental protection and social development (Walsh & Dodds,2017, Horak, Arya & Ismail, 2018). WBCSD has supported the importance of weaving SD principles into business activities to bring business value. IB acknowledged a gap in research regarding the role of business in advancing the SD agenda (van Zanten & van Tulder, 2018, Van Tulder et al., 2021).

Mainstreaming of the SD principles in business strategies and practices resonates with the requirements of the modern 21st-century business (Edwards, 2020; Horak et al., 2018). This has proven to improve corporate governance (O'Reilly et al., 2018; Mees & Smith, 2019). Australian businesses survived the economic depression of 2009 due to their excellent corporate governance, influenced by their embrace of sustainable development principles. Since 2009, the Australian investment community has been promoting PRI, which keeps them ahead in corporate governance compared to other investments in other parts of the world (Mees & Smith, 2019; Goergen & Tonks, 2019). A study conducted in Nigeria confirmed the importance of SD in good corporate governance at the firm level (Okaro et al., 2018). van Zanten & van Tulder (2018) have also demonstrated the importance of SD in the business value add. It provides an opportunity to rethink approaches to sustainable value creation and provides a clear framework to structure sustainability goals (Johnsen, 2021).

2.4.3 *WBCSD Vision 2050 Report: The New Agenda for Business*

Including the SDGs in business practices does not benefit the international community obligations alone (Doh et al., 2017, van Zanten & van Tulder, 2018). The goals are a partnership approach for public policy to facilitate action in SD at global, national, and local levels (MacDonald et al., 2019). Therefore, the practice of SD by the businesses in Botswana positively contributes to continental and national aspirations. At the same time, the business has to commit to the aspirations of the WBCSD as enshrined in the vision 2050(O'Reilly et al., 2018) for a competitive advantage in the global markets. The WBCSD (2010) developed a road map for the business through vision 2050, "The new agenda for business," to urge businesses to transform their business models by including sustainability actions to save the planet. The 40-year long-term vision outlines a pathway to a sustainable world through the nine elements: people's values, human development, economy, agriculture, forests, energy & power, buildings, mobility, and materials. The goal of the vision 2050 report is to ensure that the world population lives within the limits of the planet by sustaining life with the available natural resources, causing no harm to climate, biodiversity, and other ecosystems. Carreno et al. (2011) developed Vision 2050 Implementation Guide (IG) to guide strategic planning, help companies integrate sustainability into their organisational culture, and enable the achievement of the 2050 goals. The construction of the guide is in line with the framework for sustainable strategic development (FSSD), and the Vision 2050 report has identified business leadership as a catalyst for SD.

2.4.4 *Agenda 2063: "The Africa We Want."*

The African Union (AU) has developed a policy document to guide developments in the continent of Africa (African Union Commission, 2015; Sunge et al., 2021). The policy framework document aims to ensure inclusive growth and sustainable development in Africa and to optimise the use of Africa's resources for the benefit of all Africans. Domestication of the policy framework document by the member states involving all the stakeholders such as the governments, private sector,

the media, and civil society is essential. The agenda 20 63: **"The Africa we want"** policy framework document is a continuation of the Pan-African drive that encouraged unity, self–determination, freedom, progress, and collective prosperity pursued under Pan – Africanism and African Renaissance. The African Heads of State agreed on a vision "to build an integrated, prosperous, and peaceful Africa, driven and managed by its citizens and representing a dynamic force in the international arena" (African Union Commission, 2015, p.2; Adeleye et al., 2020, p.17). Seven aspirations derived from the African citizenry drive the agenda 2063. These aspirations are:

1. A prosperous Africa based on inclusive growth and sustainable development.
2. An integrated continent politically united based on the ideals of Pan-Africanism and the vision of Africa's Renaissance.
3. An Africa of good governance, democracy; respect for human rights, justice and the rule of law.
4. A peaceful and secure Africa.
5. An Africa with a strong cultural identity, common heritage, values, and ethics.
6. An Africa whose development are people driven, relying on the potential of African people, especial its women and youth and caring for children.
7. (7) Africa as a strong, united, resilient, and influential global player and partner.

The Africa we want directly connects to the aspirations of the agenda 2030 on SD (Figure 3). As a result, the African nations have to align national policy actions and strategies with the continental and the global agenda. The policy framework document is an instrument for Africa to innovate for the SDGs and advance research, practice, and teaching of business ethics in Africa (Adeleye et al., 2021; Zoogah & Zoogah, 2020). Zoogah and Zoogah (2020) have specifically mentioned the need for improvements in business ethics in Botswana to eradicate corruption and bribery when doing business,

which is in line with the aspirations of the Africa Agenda 2063. These aspirations and assertions align with Botswana's national Vision 2036, "Achieving Prosperity for all."

2.4.5 *Botswana Vision 2036 and National Guiding Policy Documents*

The Botswana Vision 2036, based on the four pillars of; Sustainable Economic Development, Human and Social Development, Sustainable Environment and Governance, Peace & Security is "Achieving Prosperity for all." The aspirations of vision 2036 are in line with the SDGs and the Africa Agenda 2063, supporting peace and prosperity for the people and the planet. The vision has committed explicitly to pollution prevention through the statement, "Environmental pollution is one of the challenges facing the country, and we acknowledge that if not contained, it will intensify in the future due to population and economic growth" (Botswana Vision 2036, 2016). Botswana has put in place some policy framework documents to support the national vision as well as the regional and global commitments. The most essential framework documents that drive the SD agenda include the Botswana SDGs Road Map 2017 – 2023, the Government of Botswana and United Nations Sustainable Development Framework (UNSDF) 2017 – 2021, and the Botswana Trade Policy Framework.

Botswana has put in place a roadmap to guide the implementation of the SDGs from 2017 – 2023. The document's purpose is to domesticate the SDGs and mainstream them into national policies, sector plans, and strategies. The implementation of the document requires the involvement of a multi-stakeholder representation from government, academia, Civil Society Organisations, development partners, and the private sector. The UNSDF for Botswana spanned 2017 – 2021 to guide partnerships between Botswana and the United Nations Development System (UNDS). The document outlines how the UNDS provides support to broad-based partnerships towards the realisation of the 2030 agenda for SD that encompasses the SDGs and the Africa agenda 2063. The framework has indicated the country's Human Development Index (HDI) of 0.703, ranking in the medium HDI category. A

significant factor in the HDI ranking of the country has been life expectancy in Botswana, affected by a high HIV – AIDS-related mortality rate.

Botswana revised its national trade policy in 2016 to improve the country's participation in the world trading system. The trade policy is essential for linking the world markets and the national economy. International trade is a crucial contributor to economic development; hence, this document plays an essential role in the country's economic growth. The vision of the trade policy is to foster economic growth and job creation and contribute to alleviating poverty. The trade policy framework has three elements considered when describing a country's foreign trade: the level of trade openness, the products exported, and the main export markets. Botswana is implementing this policy with the National Industry Policy and the Economic Diversification Drive to broaden the industrial base in the country.

2.4.6 *Challenges of SD implementation*

The definition of SD sounds simple, but it is a broad, ambiguous concept causing different understandings in different nations and to other people (Okaro et al., 2018, George et al., 2016). Howlett & Sanguin, (2018) have confirmed that SD is an old concept not yet fully understood in business and policy practice. Therefore, there are still some questions of what SD means in theory and practice. Complexities in implementing SD at the firm level is experienced, and these requires a paradigm shift in the leadership and management to align the business operations (Goergen & Tonks, 2019; Henry et al., 2019; Mees & Smith, 2019) with the global challenges. Business leadership and management thinking must be eco-centric and radically reflexive to effect sustainable business practices for the 21st-century business (Allen et al., 2019; Borland et al., 2016).

Therefore the integration of SD principles into business practices will vary from one

organisation to another and from one nation to another depending on many factors, including the stage of economic growth, scarcity of resources, leadership styles employed, governance structures, and ethics (Painter– Morland et al., 2019; Dobrovolska, 2018). Conventional management of business operations affects the quality of the physical environment and the social welfare of the people due to pollution (Dobrovolska, 2018; Walsh & Dodds, 2017). However, the business community at the international level has expressed the willingness to embrace the SD agenda to improve the business value (van Zanten & van Tulder, 2018; O'Reilly et al., 2018). The integration of SD into corporate strategy and business practices has proven difficult (Henry et al., 2019; Murray et al., 2017) due to a lack of practical guidance. IB research has not kept pace with the expanding role of the business community in sustainable development, especially its evolution and transformation to the MDGs or SDGs frameworks (van Zanten & van Tulder, 2018).

As a result, applied research conducted in business entities is a way of facilitating the implementation of the SD principles into business practices (Henry et al., 2019; Murray et al., 2017) and advancing the sustainable development agenda(Allen et al., 2019). Conventional strategic management (Bilinska – Reformat et al., 2018) can no longer sustain the modern business that has to cater to a wide range of stakeholders, including future generations and the natural environment (Borland et al., 2016; Horak et al., 2018; Jones et al., 2016; Rao & Tilt, 2015). The protection of the natural environment and the value added to society have to be in balance with profits (O'Reilly et al., 2018; George et al., 2016). Previous studies have a long time revealed that the integration of economic and social development with environmental protection in business is still outstanding. There is urgency for TBL performance framework adoption by businesses and good governance at local, national, regional, and international levels (Mukhi & Quental, 2019).

Driving business toward sustainable development tackles global challenges (George et al., 2016; Van Zanten & Van Tulder, 2018) and simultaneously creates a competitive advantage for the firm (Leonidou et al., 2015, Horak et al., 2018). Scholars in sustainability support the integration of SD in business practices at all management levels to address the interconnectedness and interdependent of the environment, society, and economic dimensions (Jones, 2016; Painter – Morland et al., 2019). In their research, Rao and Tilt (2015) identified a gap in social and environmental reporting to enhance corporate governance that needs filling. The earlier studies also confirmed the performance measurement gap that revealed a lack of methodologies and tools to measure sustainability in businesses (van Zanten & van Tulder, 2018).

The UN Secretary-General Kofi Annan instigated the Principles for Responsible Investment (PRI) as part of the UN's Global Compact, which proposed international standards for business sustainability in 2005 (Mees & Smith, 2019). Corporate environmental reporting remains a challenge for many companies worldwide due to a lack of transparency (Borgstedt et al., 2019). The company's performance on the sustainability objectives should reflect on its actions (van Zanten & van Tulder, 2018). Companies make good statements about the future intention that contain a clear subject, extent, and period. Still stakeholders cannot validate such information. Hence the "green washing" on the pretext of informing stakeholders about future actions regarding the ecological environment and social development because it is difficult for stakeholders to identify transparent reporting (Borgstedt et al., 2019; van Zanten & van Tulder, 2018). The inclusion of statements that businesses make about environmental protection and social development should be included in official audits to instil transparency and accountability in the industry to reduce green washing (Borgstedt et al., 2017).

The adoption of sustainability standards and norms through PRI has proven positive for

Australian investment businesses since 2009(Mees & Smith, 2019). Sullivan et al. (2017) have highlighted some global benchmarks for monitoring progress in sustainability performance using the Global Reporting Initiative (GRI), ISO 14001, and the Carbon Disclosure Project (CDP). UNEP established GRI in 1997 to assist with developing guidelines and frameworks for reporting. The GRI aims to ensure the dissemination of voluntary environmental reporting guidelines to enhance the quality, comparability, thoroughness, and usefulness of sustainability reporting. Research has proven that the GRI set principles do not bind the companies to sustainability commitments because there is no evaluation to ensure that the companies pursue the claimed objectives (Borgstedt et al., 2019). Transparency and honesty in sustainability performance reporting are vital, and official audits should be performed taking into account the statements made by the companies regarding sustainability. Currently, sustainability reporting is not mandatory for the business (Torelli, et al., 2019), and companies report sustainability as a form of green washing (Borgstedt et al., 2019; van Zanten & van Tulder, 2018) primarily to alleviate pressure from the stakeholders(Adomako et al., 2022; He et al., 2020).

Corporate sustainability reporting has been ongoing since after the Brundtland report on SD. Due to the SD theory's growth, the reporting must align with emerging issues. Currently, the 17 Sustainable Development Goals (UN_SDGs) enriched the SD concept after the United Nations conference in New York in September 2015 for adopting the 2030 Agenda. Due to these changes, many international organisations have suggested various ways to assist firms in incorporating UN_SDGs into strategic management and sustainability reporting. In particular, the GRI, UN Global Compact, and WBCSD have suggested UN_SDGs for the strategic management of firms to contribute to sustainable development. Similarly, GRI and UN Global Compact have suggested a guideline for firms to measure their sustainability performance and introduce these goals into corporate

sustainability reports (Tsali et al., 2020; Francesco & Diniz, 2019).

The guidance that is provided by the GRI and UN Global Compact to the firms on sustainable strategic management and sustainability reporting is not mandatory (Torelli et al., 2019; Borgstedt et al., 2019) but voluntary (van Zanten & van Tulder, 2018). Firms mostly put up SD statements that are comparable and consistent with the GRI and UN Global compact guidelines for sustainability for compliance and adherence to stakeholder pressures (Torelli et al., 2019; Francesco & Diniz, 2019). These statements are not auditable to hold the firms accountable (Borgstedt et al., 2019, van Zanten & van Tulder, 2018). van Zanten and van Tulder (2018) have lamented lack of role clarity for the business in their contribution to the SD agenda, especially the multi-national enterprises (MNE). Borgstedt (2019) bolstered their sentiments and buttressed their beliefs, indicating that firms put objectives and statements that align with the GRI reporting guidelines to manipulate the stakeholder perceptions and expectations without making some internal adjustments. The use of statements and objectives in line with the GRI and the UN Global Compact are mainly for green washing with the pretext of caring for future generations (Allen et al., 2019; Borgstedt et al., 2019).

Allen et al. (2019) have highlighted the importance of human development in SD, to enable the integration of SD principles in the organisation at all levels. Studies have demonstrated that mainly sustainability issues are superficially approached (Borgstedt et al., 2019) to overcome pressures from the stakeholders (Torelli et al., 2019). There is a need to learn new ways of discharging sustainability to prevent incidences of green washing (Allen et al., 2019). The theory of SD has been evolving over the years, and the 17 SDGs currently enrich it. The integration of the SD principles at the firm level has to consider these changes to align with the global agenda. These changes disrupt traditional strategic management paradigms to align with emerging issues (Sullivan et al., 2017). Concepts such

as industrial ecology (IE) (Sullivan et al., 2017; Lozano, 2019), SSM (Borland et al., 2016), cleaner production, TBL, corporate sustainability, design for the environment, eco-efficiency etc. (Lozano, 2019), all need capacity building at the firm level. Hence, there is need to transform management thinking and practice (Allen et al., 2019) to enable the implementation of these practices and initiatives. Francesco & Diniz (2019) have confirmed that in adopting new sustainability practices and guidelines, the focus tends to be on the regulatory instruments and stakeholder pressure, neglecting the internal organisational factors, such as structural, organisational characteristics, governance, and performance.

Further research is required to investigate how the business has integrated the SD principles into its business practices (Henry et al., 2019; Murray et al., 2017; van Zanten & van Tulder, 2018). Schaltegger & Burritt (2015) has also posited that the inclusion of social and environmental goals in the firm's performance management system reduces end-of-pipe measures, which could have increased costs and reduced profits. Studies have revealed that practical guidance on implementing SD strategies at the firm level is currently lacking (Pedersen et al., 2016, Murray et al., 2017), and further studies can improve it. The adoption of the TBL performance framework by the businesses (Henry et al., 2018; Hahn et al., 2017; Tate & Bals, 2016) is expected to yield positive results where an equilibrium is created on profit making with the planet and the people (Doh et al., 2017; Kolk, 2016) advancing the SD agenda(van Zanten & van Tulder, 2018). Engert et al. (2016) have demonstrated corporate sustainability's importance in aligning the business environment with ecological and social trends. This would require a shift in strategic management thinking to cater for sustainability at all levels (Borland et al., 2016) to align the business with the changes in its external environments.

SD mainstreaming into business practices was found to be of strategic importance (Kolk, 2016, O'Reilly, Allen & Ready, 2018) for the first time after the Rio Summit of 1992(Walsh & Dodds, 2017). Elkington developed the TBL framework to encourage businesses to balance economic, environmental, and social dimensions in decision-making (Adams, Jeanrenaud, Bessant, Denyer & Overy, 2016), to deliver the people, planet, and profit performance goals (Kolk, 2016; Painter – Morland et al., 2019). The changes challenge businesses to remain connected to society and the natural environment through continuous learning and capacity building for survival (Goworek & Leeuw, 2019; Mees & Smith, 2019; Painter – Morland et al., 2019). Scholars have supported the importance of integrating SD into the business strategy to address the interdependent and interconnected environmental, social, and economic aspects at different levels of management (Baumgartner, 2014; Bilinska – Reformat, 2017).

2.5 Triple Bottom Line (TBL) Framework

The TBL performance framework appeared for the first time after the Rio Summit of 1992 as a dimension for business strategy (Walsh & Dodds, 2017). Before then, sustainability reports focused mainly on the social responsibility issues that the various social groups influenced for better and safer conditions of employment and the necessity for firms to act as good citizens by paying the established taxes (Tsalis et al., 2020). Philanthropic activities characterized these gestures and it benefitted the business more than the environment and society (Martinez et al., 2016; Stirling et al., 2016). After the release of the Brundtland report in 1987, the focus predominantly shifted to environmental issues as a response to the requirements of the information to protect natural resources for future generations to meet their needs. After the adoption of the Agenda 21 on SD Elkington developed the triple-bottom-line (TBL) approach, which is more systematic to balance the three pillars of SD, which are economic growth, social development, and environmental protection (Adams et al., 2016, Doh et al., 2017; Horak et al., 2018; Walsh & Dodds, 2017). All these changes in the evolution of the SD theory have

a significant influence in corporate strategic management, accounting, and reporting.

Elkington, when developing the TBL performance framework he had realized that the industry was faced with environmental challenges that needed a strategic approach to balance economic growth, environmental protection, and social development to maintain competitiveness (Dhopte & Sinha, 2016; Henry et al., 2019; Walsh & Dodds, 2017). Industrial practices are incompatible with sustaining life on the planet due to industrial pollution and environmental degradation caused by emissions and effluent discharges (Qeke & Dubihlela, 2018; Kolk, 2016). Therefore, businesses must adapt to the contemporary environment to avoid negative impacts on the natural environment to maintain company reputation with stakeholders and retain customer loyalty (Schrempf – Stirling et al., 2016, Horak et al., 2018). Therefore, the adoption or the infusion of the SD principles into business practices is a strategic challenge and an essential consideration in business strategy (Walsh & Dodds, 2017, Engert et al., 2016). Engert et al. (2016) have emphasized the importance of business positioning in response to ecological and social trends in rapidly changing environments. John Elkington developed the TBL framework (Carmine & De Marchi 2022; Rao & Jah, 2019) to enable the business to account for their financial bottom line and, at the same time, measure and report on their social and environmental performance (Joseph et al., 2020; Tarnanidis et al., 2019). The TBL framework became the essential tool to assess business performance in line with the Global Reporting Initiative (GRI) (Hummel et al., 2019). Instead of focusing on short-term financial objectives, the TBL is a framework that causes the business to focus on long-term economic sustainability (Yekin et al., 2019).

The United Nations World Summit on Sustainable development held in Johannesburg in 2002, placed emphasis on the three dimensions of SD: economy, environment, and society (Husam et al., 2019; Yusop & Othman, 2021). The TBL performance framework transfer the three dimensions to

the business community, implying that businesses should simultaneously achieve better financial performance, environmental protection goals, and equity for societies (Hahn et al., 2018; Ivory & Brooks, 2018; Lozano, 2019). Studies have revealed that scholars have focused on the TBL performance framework to develop business models suitable for the 21st-century business (Khalifeh et al., 2020). Engert et al. (2016; p. 2834) have mentioned, "Corporate sustainability is achieved at the intersection of economic development, environmental protection, and social responsibility," referring to Elkington's TBL performance framework based on its economic, environmental, and social dimensions.

TBL performance framework aims to achieve economic prosperity, environmental protection, and social development simultaneously in business by maximizing the positive and minimizing the negative impacts on the people and the planet (Qeke & Dubihlela, 2018; Pisani et al., 2017). Balancing the three pillars of SD for the business would require some innovations (Sullivan et al., 2018; Tesfaye & Fougere, 2021; Adams et al., 2016) to overcome the tensions on the TBL performance goals (Hahn et al., 2018; Henry et al., 2019). The desire to manage environmental integrity, social equity, and economic prosperity simultaneously creates some tensions (Ivory & Brooks, 2018; Rego et al., 2015) in the SD pillars. Progress on one SD pillar may hinder progress on another pillar more so that the focus includes future generations, which requires a long-term focus contrary to the firm's short-term focus (Hahn et al., 2018). When developing the TBL framework, Elkington suggested a paradigm shift in measuring business success to focus on financial, environmental, and social objectives (Ivory & Brooks, 2018; Miska et al., 2018). Balancing traditional economic targets with environmental and social concerns has created a new paradigm for corporate performance (Frynas et al., 2017; Pedersen et al., 2016). The TBL performance framework (Henry et al., 2019) forms the basis for the new paradigm shift in corporate performance.

The TBL performance framework focuses on the interrelationship between the planet, the people,and the profit, sometimes called the three Es, referring to the Economy, Ecology, and Equity (Rego et al., 2015). The business's survival in the 21st century depends on this balance, which requires the integration of environmental and social aspects in the business day-to-day strategic decision-making to benefit the wider society (Frynas et al., 2017). In the 20th century, the focus was solely on Corporate Social Responsibility (CSR), which could not fully cater for the needs of the people and the planet. CSR activities are no longer adequate for the 21st-century businesses that cater for social and environmental benefits (Martinez et al., 2016; Parente, 2020; Stirling et al., 2016). Hence, the TBL performance framework is a good approach for modern businesses to balance the profits and needs of the people and the planet (Gupta et al., 2020; Pisani et al., 2017) by integrating of SD principles into business practices(Khalifeh et tal., 2020).

2.5.1 *The Profits*

Traditionally businesses exist to make profits and dividends for their owners and shareholders (Borland et al., 2016; Parente, 2020). The new paradigm shift in contemporary business is putting pressure on the business of the 21st century to yield social and environmental benefits (Horak et al., 2018; Pedersen et al., 2016). Bilinska – Reformat et al. (2018) have indicated the challenges experienced in the world due to economic growth as climate change, effects of rapid urbanization, modern lifestyles, and governance challenges. These challenges then render it impossible for the business of the 21st century to focus on profit making alone. Therefore, the SD as a contemporary paradigm shift is an important instrument that ensures continuous improvement of the quality of life for the present and future generations (Bilinska – Reformat et al., 2018). Scholars have posited that with their traditional profit making (Khalifeh et al., 2020; Mena et al., et al., 2016), businesses have to show responsibility to the planet on which they exist and to the people whom they affect (Voronkova

et al., 2019).

Economic growth, as one of the SD pillars drives development and profit making (Jones et al., 2016; Hahn et al., 2018). Economic growth is a result of industrial action, which is never without environmental and social challenges due to pollution caused by industrial emissions and effluent discharges (Leonidou et al., 2015; George et al., 2016; Doh et al., 2017). Natural resources are required to drive economic growth, as raw materials in the industries are limited (Voronkova et al., 2019). Overexploitation of these natural resources will result in environmental degradation (Mena et al., 2016), hurting the environment. As a result, the business of the 21st century is facing challenges and cannot put emphasis on profit making alone but also have to keep an eye on the social and environmental benefits (Engert et al., 2016; Horak et al., 2018). The business has to emphasize the long-term focus, including the future generations (Majumdar, 2019, Schrempf-Stirling et al., 2016). The economics language dominating the business sector may view the environmental and social issues as insignificant to the company (Figge et al., 2018), causing a challenge for the people and the planet.

Pedersen et al. (2016) have confirmed that many businesses have just started considering the environmental and social aspects of their business models, which requires monitoring for progress. Some companies still view the inclusion of environmental and social factors in their business models as a problematic practice that would place a demand on their internal capabilities (Henry et al., 2019; Voronkova et al., 2019). Studies revealed that many scholars have focused on the TBL performance framework approach to develop business models that balance the profits with the benefits to the people and the environment (Ludeke-Freud, 2019; Lozano, 2018). The TBL performance framework is focused on ensuring the incorporation of the environmental and social performance indicators while complementing and balancing economic indicators into company reporting processes, measurement,

and management, aiming at questioning the company's values, strategies, and practices to achieve the SD(Lozano, 2018).

Business models have primarily focused on market sustainability rather than social and environmental sustainability (Pedersen et al., 2016; Tollin & Christensen, 2019). The inclusion of social sustainability and environmental sustainability supports the WBCSD commitments to the SDGs (O'Reilly et al., 2018). Pedersen et al. (2016,) have posited the difficulty faced by the business in understanding sustainable business models and operationalizing sustainable development at the firm level. This is an indication of some limitations in business model literature on social and environmental challenges facing today's world. Therefore, there is a need to create knowledge to advance the integration of SD into traditional business model thinking. The inclusion of sustainability in business models has improved corporate governance (Mees & Smith, 2019). Furthermore, scholars have also indicated that balancing profits with the planet and the people in businesses yield several benefits, such as a positive image, trust withstakeholders, the efficiency of resource management, superior return on investment, increased profits, and competitive advantage (Horak et al., 2018; Jones et al., 2016; Mena et al., 2016; Harrison & Felps,2018).

2.5.2 *The Planet*

The planet is a fixed space requiring development control to fit into the existing space thus limiting economic growth (Tate & Bals, 2018). In their study, Tate and Bals (2018) have indicated that by 2030 closer to two planets will be required for consumption while the current worldwide resource footprint requires approximately 1.5 planets to sustain existing life. Nature is limited in its ability to produce and assimilate (Dobrovolska, 2018). The natural resources which are raw materials to the business are limited (Adams et al., 2016), and there is a need for the conservation and preservation(Dobrovolska,2018) of these resources to meet the needs of the present generation without

compromising the future generations from meeting their own needs(Walsh & Dodds, 2017). Industrial development affects the planet due to pollution caused by emissions and effluent discharges (Dobrovolska, 2018). Studies have proven that this is a strategic challenge that requires commitment from business leaders to ensure that environmental protection goals have equal attention with the company's financial goals (Henry et al., 2019; Borland et al., 2016).

Maximizing financial goals at the expense of environmental goals can deplete natural resources and render the planet unproductive, hence causing failure to support future generations' needs (Martinez et al., 2016; Schrempf- Stirling et al., 2016). Failure to protect the environment denies future generations the ability to own the business and use the planet (Majumdar, 2019). Corporations have to protect the planet to enable future corporations and the wealth of prospective shareholders (Schrempf- Stirling et al., 2016). Studies have proven that today's business faces a lot challenges. Instead of embracing a new paradigm in which environmental and social concerns may come first, corporations still uphold the notion that the business of business should make a profit for shareholders (Tate & Bals, 2016). This kind of mind set is contrary to the contemporary business that has to balance profit making with social and environmental benefits (Walsh & Dodds, 2017; Horak et al., 2018). Business entities have to recognise environmental protection to avoid land degradation, biodiversity loss, and climate change issues (Borland et al., 2019; Sullivan et al., 2017; Villamil et al.,2021); when not controlled, would render the planet unproductive (Martinez et al., 2016) limiting the raw materials that are derived from the planet to facilitate production in the industry (Dobrovolska, 2018).

The TBL performance framework helps to balance profit making with environmental protection and social development (Tate & Bals, 2018). Incorporating pollution prevention measures into the industrial processes protects the planet (Chan et al., 2021) and promotes cleaner production

(Sullivan et al., 2017). Therefore, the business of the 21st century must embark on sustainability initiatives such as resource efficiency, clean technologies, reuse, and recycling (Ben-Amar et al., 2017; Pedersen et al., 2016). Lozano (2018) has identified the approaches and initiatives that the industry can implement to advance the SD agenda as cleaner production, environmental management systems, design for the environment, green chemistry, industrial ecology, integrated management system, and the natural step. However, implementing these initiatives did not yield promising results in the past (Mukhi & Quental, 2019; Sullivan et al., 2017). Previous studies revealed that the acceleration of SD through these initiatives could be highly achieved with a strategic focus (Engert et al., 2016, Henry et al., 2019). Business decisions made strategically formulate goals and objectives that drive the SD initiatives. Traditional strategic management can no longer drive the business of the 21st century, where environmental and social benefits are given equal attention as profits (Engert et al., 2016; Tate & Bals, 2018).

The earth's natural resources used as inputs in business processes are finite (Sullivan et al., 2017, Murray et al., 2017). Hence, there is a need for conservation and preservation for future use (Dobrovolska, 2018; Voronkova et al., 2019). These include water, coal, natural gas etc. (Pedersen et al., 2016; Afrin et al., 2021). The UNCED that declared the SD concept official also announced the thesis on the need to ensure a balanced solution to social and economic problems and the problems of preserving a favourable environment and natural resource potential to meet the needs of present and future generations(Voronkova et al., 2019). The World Economic Forum ranked water as the second most severe risk the business community faces because water is a subset of environmental concern and a critical resource for business (Afrin et al., 2021). Negative environmental impacts may affect the business due to a lack of resources, which are the inputs for the business processes (Sullivan et al., 2017; Dbrovolska, 2018). Strategic tools such as the Natural-Resources-Based View of the firm,

suggested by Stuart Hart(Sullivan et al., 2017), are intended to shift the view of the business to cater for the protection of natural resources when positioning the business. Pollution of the environment is a risk to the business that may result in financial losses due to litigation (Afrin et al., 2021).

2.5.3 *The People*

The demand to integrate environmental and social considerations into corporate values driven by the needs of the people (Dzhengiz & Niesten, 2020; Montiel et al., 2020) is critical for the balance of TBL. People are the shareholders, consumers, employees, and stakeholders, including future generations (Ben – Amar et al., 2017, Borland et al., 2016). People as social beings are motivated by social development (Jones et al., 2016; Kolk, 2016, Miska et al., 2018), which is another pillar of SD. Development affects the environment due to pollution effects from emissions and discharges (Dobrovolska, 2018; Mena et al., 2016); the natural environment cannot complain about the changes brought about by these effects; but people do because they feel the changes (Engert et al., 2016). Tate and Bals (2016) have mentioned extensive studies of the TBL performance framework, but the social dimension is lagging behind. The Social Based Resource View (SBRV) is essential for the 21st-century business (Tate & Bals, 2018) to focus the business on a broad range of stakeholders, including future generations (Jones et al., 2018; Goergen & Tonks, 2019).

The negative impacts of business practices on the planet affect people's lives due to climate change effects and pollution (Sullivan et al., 2017). Corporate social irresponsibility by the business may cause some trauma to the stakeholders (Mena et al., 2016) and affect their livelihoods due to pollution effects (Kolk, 2016; Martinez et al., 2016). As a result, stakeholders are placing some demands on today's businesses to consider its impacts on both the internal and external stakeholders (Jones et al., 2018; Mena et al., 2016; Stead & Stead, 2019). Pedersen et al. (2016, p.9) have confirmed,

"a business that contributes to sustainable development needs to create value to the whole range of stakeholders and the natural environment, beyond customers and stakeholders." Business stakeholders go beyond the present generations to cater for future generations (Borland et al., 2016). TBL's impact on stakeholders needs to focus on both the demand and supply side of the business model, and social business models create value by addressing economic, environmental, and social dimensions, promoting equitable relationships among stakeholders, and adopting a fair revenue model(Tate & Bals, 2018).

Consumers, social movements, and communities are putting pressure on business practices to align with the SD (Alder, 2016; Stead & Stead, 2019). Shareholders desire profits and dividends (Joseph et al., 2019; Sheth & Parvatiyar, 2020); consumers prefer green products (Burritt et al., 2020; Tate & Bals, 2018); employees desire conducive working conditions that are in line with the modern business (Voronkova et al., 2019). The future generations would like their needs satisfied without paying for the mistakes of the former generations (Schrempf-Stirling et al., 2016; Sheth & Parvatiyar, 2020). All these demands put pressure on the business to balance the people, planet, and profits. The balance of these aspects has proven to be a challenge to corporations due to the leadership styles, organisational structures, employees' attitudes toward learning, skills in strategic management, corporate culture, and operational budgets (Goergen & Tonks, 2019; Karmowska et al., 2017). Hence, dynamic decision-making and knowledge in managing the contradictory elements are required (Borland et al., 2016; Montiel et al., 2020).

2.5.4 *Balancing the Three p's*

Balancing the 3Ps was a strategic challenge due to the contradictory nature of the objectives (Corbett et al., 2015; Rego et al., 2015). Managing financial, environmental, and social goals have not been easy because many businesses still believe that a company's purpose is to make profit (Tate &

Bals, 2016). Therefore, companies must refocus and channel their resources toward social development and environmental protection(Doh et al., 2017). However, some organisations lack the technical skills, structures, and culture to support the integration of the 3Ps to deliver the TBL performance (Leonidou et al., 2015). Considering the demands of the grand challenges (George et al., 2016; Stead & Stead, 2019), businesses can no longer continue focusing on profit making, disregarding their operational effects on the environment and society.

Environmental concerns due to industrial operations are causing businesses to re-consider their actions to adopt green practices as part of their business strategies (Tate & Bals 2018). Infusion of these green practices into the business DNA should be from the corporate strategy to the functional strategy for good results (Murray et al., 2017). This has become a norm around the world to integrate corporate sustainability into conventional business models to benefit both the business and society (Pedersen et al., 2018). The practicality of balancing these three aspects of sustainability to help the people and the planet in a business remains a challenge (Henry et al., 2019) that needs further exploration on different business models in different business setups(Tate & Bals, 2018). Achieving the balance of the 3 Ps, hence the TBL performance requires systems thinking and dynamic strategic decision-making (Murray et al., 2017; Henry et al., 2019). These are internal capabilities needed by today's business to infuse SD into their strategic management process (Frynas et al., 2017).

Tate & Bals(2018) have confirmed that even today, “sustainable business” still represents an economically-focused perspective that employs varying degrees of CSR efforts such as energy efficiency, reduced carbon footprint, recycling and reuse, fair employee treatment, and charitable giving, and businesses taking this perspective have addressed only a tiny portion of the global sustainability challenges. The business must focus equally on the economic, social, and environmental

dimensions to achieve TBL performance. Tate and Bals (2018) have posited that business models need to shift from being the logic for making money to becoming a logic for creating economic, social, and environmental value for all its Stakeholders. Transformations from traditional strategic management to the modern strategic management process that takes sustainability issues (Engert et al., 2016; Sullivan et al.,2017) into consideration is required. There is need for an effective connection between those in strategic decision-making and those in the operations (Henry et al., 2019; Horak et al., 2018). Fragmentation of the operational strategies with the corporate strategy results in poor integration of the SD initiatives in the whole system, causing failure to address critical concerns such as over-use of natural resources, inadequate responses to global warming, and lack of focus on social justice(Murray et al., 2017). Integrating SD initiatives into strategic decisions and business operations yields sustainable business management (Alder, 2016; Borland et al., 2016).

2.6 Sustainable Strategic Management (SSM)

The integration of sustainable development principles into business practices has proven to be a challenge for most businesses due to a lack of practical guidance (Clementino & Perkins, 2021; Mio et al., 2020; Murray et al., 2017) and a lack of commitment by the leadership (Henry et al., 2019). Even though the WBCSD started embracing sustainability issues shortly after the Rio Summit of 1992(Kolk,2016; Walsh & Dodds,2017), the practice by the various business sectors is lagging on the ground (Rego et al., 2015; Henry et al., 2019). Corporations that implement SD principles, give priority to profits or financial gains over environmental protection and social development goals (Baumgartner, 2014). The business still finds it challenging to adapt to the new paradigm shift of balancing profits with social and environmental benefits (Tate & Bals, 2016). Corporate sustainability as the intersection of the three SD principles of environmental integrity, social equity, and economic prosperity(Hahn et al., 2018) poses a challenge due to the tension exerted on the business by the three dimensions that have to be delivered simultaneously(Adams et al., 2016; Henry et al., 2019).

Thus the competing tensions between the SD dimensions for the simultaneous delivery of the TBL performance goals(Adams et al., 2016), would require relevant leadership and management competencies (Akhtar et al., 2018; Dobbins & Dundon, 2017; Simsek et al., 2017; Rao & Tilt, 2015). These skills are required to empower the business leaders and the managers with the ability to integrate SD principles into the traditional strategic management process (Engert et al., 2016; Montiel et al., 2020) to cause a balance in profit making with the needs of the people and the planet(Frynas et al., 2017; Goergen & Tonks, 2019). Even though the integration of SD into the business strategy is viewed as an essential aspect (Edwards, 2020; Engert et al., 2016), causing an equilibrium on the three dimensions remains a challenge for many businesses (Hahn et al., 2018; Murray et al., 2017). Pedersen et al. (2016) have alluded to the importance of business models that support SD, while Tate & Bals (2018) have lamented on the fact that the business focus has entirely been on the delivery of the economic and environmental dimensions while the social dimension lags behind. Henry et al.(2019) have revealed a lack of leadership commitment to the implementation of the TBL performance framework for the business, while Murray et al., (2017) have also expressed that a lack of practical guidance to the businesses causes the low uptake of the SD principles. All these aspects require the business entity to develop the internal capabilities to infuse the TBL performance framework throughout the organisation's DNA (Murray et al., 2017; Engert et al., 2016).

The new paradigm shift in strategic management demands for changes in strategic decision-making,management practices, organisational cultures, and business operations (Horak et al., 2018; Henry et al., 2019) to effect change. SD scholars have advocated for this paradigm shift to cause a balance in TBL performance goals to benefit the wider society (Frynas et al., 2017), including future generations (Kolk, 2016; Schrempf- Stirling et al., 2016). Therefore weaving the TBL performance

aspects into the strategic management process of the firm is vital to yield an equilibrium in the delivery of the financial, environmental, and social goals (Bilinska – Reformat et al., 2017; Julius et al., 2016). Several scholars (Carmine & De Marchi, 2022; Joseph et al., 2022; Hahn, 2018) demonstrated tensions and lack of balance in social equity, environmental integrity, and economic prosperity by businesses. These tensions happen due the fact that the business has not fully embraced the changes introduced by the SD concept. Business models still emphasize on the delivery on economic benefits at the expense of social and environmental benefits (Tate & Bals, 2018, Pedersen et al., 2016). Henry et al. (2019) attributed lack of balance in the TBL performance goals to leadership commitment while Borland et al. (2016) argued about the importance of the business being both ecocentric and anthropocene.

2.6.1 *SSM as a New Paradigm for Business Strategy*

Bilinska – Reformat et al. (2017) and Puglieri et al. (2022) have both posited the urgency of aligning traditional business models with contemporary market challenges. Integrating SD into the existing business models for adaptation is possible (Julius et al., 2016, Sheth & Parvatiyar, 2020). Scholars have lamented lack of practical guidance for businesses on SD implementation SD (Henry et al., 2019; Murray et al., 2017). Practical advice will vary depending on business sectors and business models (Rubio – Mozos et al., 2020; Clementino & Perkins, 2021). Therefore appropriate leadership skills (Dzhengiz & Niesten, 2020; Montiel et al., 2020; Simsek et al., 2017) are required to enable dynamic strategic decision-making (Ivory & Brooks, 2018) and managerial capabilities(Frynas et al., 2017; Dzhengiz & Niesten, 2020) to acknowledge the contradiction and the tension in the TBL performance goals(Hahn et al., 2018; Joseph et al., 2020). Previous studies revealed that management practices and corporations' strategic leadership have not fully embraced the integrative SSM approach for their businesses (Henry et al., 2019). Failure to adopt the SSM integrative approach is a hindrance to the SD agenda (Doh et al., 2017; Dzhengiz & Niesten, 2020), which requires the uptake of the SDGs by both the government and the private sector (O'Reilly et al., 2018; Francesco & Diniz, 2019).

Studies conducted by Stead and Stead (2019) and Borland et al. (2019) on corporate sustainability have proven the possibility of improving conventional strategic management to align with contemporary market challenges. Borland et al. (2016) insisted on the shift from the anthropocentric view insisted on shifting from the anthropocentric view to the ecocentric view when formulating business strategies for the 21st-century business. The integrative approach of corporate sustainability aligns business practices with ecological and social trends (Adner, 2017; Beerannavar, 2020; Joseph et al., 2019). Sullivan et al. (2017) have confirmed the importance of transforming the traditional strategic management paradigms to align with the requirements of SD for the business (O'Reilly et al., 2018; Khalifeh et al., 2020). These studies confirm that today's businesses need to adapt to the new paradigm to meet the business challenges (Joseph et al., 2019; Edwards, 2020). Therefore Stead & Stead (2019)'s SSM is the ideal integrative approach suitable for the modification of the traditional strategic management paradigms(Sullivan et al., 2017) for the facilitation of the TBL performance uptake by the business(Rego et al., 2015; Murray et al., 2017).

A new paradigm shift requires change management (Ivory & Brooks, 2018; Montiel, 2020), which involves transforming organisational cultures (Miska et al., 2018; Horak et al., 2018). Organisational culture plays an essential role in ensuring the organisation's willingness to undertake SD initiatives (Horak et al., 2018) and embrace the culture of SD in practices and behaviours at all levels (Murray et al., 2017; Roscoe et al., 2019). The whole DNA of the business's strategic management process has to transform to align with the new changes. Miska et al. (2018) have indicated the importance of culture in effecting changes in the broader systemic context of the organisation. Leadership styles (Simsek et al., 2017; Anderson & Sun, 2017) are vital in ensuring that the new paradigm is instilled in the whole organisation from strategic decision-making to operational

levels (Baumgartner, 2014; Engert et al., 2016). According to Borland et al. (2016), transformational leadership is essential to transform organisational cultures to a sustainability focus.

As a new paradigm shift in strategic management, SSM is a new theory that has just evolved in the new millennium (Rego et al., 2015; Stead & Stead, 2019). Hence, the literature on the theory is limited, rendering an opportunity for future studies. Considering the work that was done by Stead and Stead (2008) and Borland (2009), conventional strategic management (Su et al., 2016; Shepherd et al., 2016; Kiilu & Wambua, 2017) is no longer adequate to sustain today's business (Borland et al., 2016). The 21st-century business has to pay attention to creating social and environmental benefits and profit making for survival (Horak et al., 2018) and competitive advantage (Walsh & Dodds, 2017). SSM enhances corporate greening for business continuity and adaptability (Rego et al., 2015; Dhopte & Sinha, 2016; Roscoe et al., 2019) weaving the TBL aspects into the DNA of the business (Murray et al., 2017; Rubio – Mozos, 2020).

2.6.2 Sustainability as a Strategic Option

Elkington realized that the industry's environmental challenges were of competitive and strategic importance shortly after the Rio – summit of 1992, resulting in consideration of the SD being part of the business strategy (Frynas et al., 2017; Walsh & Dodds, 2017). However, studies have revealed the industry's lack of implementation of SD strategies (Henry et al., 2019; Rego et al., 2015). The industry has lamented a lack of practical guidance on implementing SD strategies (Murray et al., 2017). Having realized the slow uptake of sustainability issues by businesses and the challenges they pose to society, an urgent paradigm shift is essential to consider sustainability as a strategic option for the business of the 21st century (Borland et al., 2016; Bilinska – Reformat et al., 2018). Business strategies focused on economic benefits alone can no longer sustain today's business (Tate & Bals, 2018). There is a need to strike a balance between the financial, environmental and social goals (Walsh

& Dodds, 2017) for the business to survive the ecological and social trends (Engert et al., 2016).

Rego et al. (2015) echoed the same sentiments by, positing the need for giving sustainability the same attention in business as the other strategic business drivers, such as culture, finance, human resources, marketing, and supply chain. A vision promoting sustainability plays an essential role in transforming the organisational culture towards sustainability behaviours (Borland et al., 2016; Roscoe et al., 2019; Shahzad & Zafar, 2021). Such a vision becomes a company brand for market differentiation (Murray et al., 2017). This may create a distinct value proposition for the customers due to green policies and a culture that cares for the people and the environment (Roscoe et al., 2019; Geogen & Tonks, 2019). Sustainability implementation cannot be in isolation from other strategic options but rather as an integrative approach (Henry et al., 2019) and systems thinking approach (Murray et al., 2017) for effective results. Sustainability initiatives such as industrial ecology (IE), circular economy (CE), triple bottom line (TBL), cleaner production (CP), corporate sustainability(CS), green chemistry(GC), design for environment, etc. (Lozano, 2019; Sullivan et al., 2017), all require an integrative approach to achieve a broader systemic context (Murray et al., 2017, Miska et al., 2018).

2.6.3 *Drivers of SSM in an Organisation*.

As Stead and Stead (2019) suggested SSM is an integrative approach to strategic management that adapts the modern business to sustainable development (Edwards, 2021). Other scholars also confirmed the urgent need to integrate SD into business practices to respond to social and environmental challenges (Bilinska – Reformat et al., 2018; Puglieri et al., 2022). These organisational changes are only possible with the appropriate internal capabilities in the organisation to enable changes from conventional strategic thinking (Ivory & Brooks, 2018) to SSM (Borland et al., 2016) to modern strategic thinking(Sullivan et al., 2017; Engert et al., 2016). Management practices and

leadership competencies were identified at the top of the list is the need for internal capabilities (Anderson & Sun, 2017; Frynas et al., 2017; Montiel et al., 2020) that are vital for driving the integrative approach and the shift to SSM (Rego et al., 2015; Rubio – Mozos, 2020).

Leaders are influential due to their charisma (Anderson & Sun, 2017; Jaen et al., 2020; Waddock, 2019) and their strategic positions enables the inclusion of SD in the organisational strategic vision and strategic choices (Henry et al., 2019). They set the vision, the mission, and the values for the organisation (Borland et al., 2019; Jaen et al., 2020; Waddock, 2019), and there are the interfaces of the organisation with the external stakeholders (Simsek et al., 2017; Dobbins & Dundon, 2017). Therefore what an organisation stands for is depicted in the conduct of its leadership (Miska et al., 2018), who would, in turn, influence all the stakeholders (Jones et al., 2018) toward SD thinking and culture (Carmine & De Marchi, 2022; Horak et al., 2018).

Leadership capabilities such as transformational leadership are essential for communicating the vision and values throughout the organisation and collaborating with stakeholders (Henry et al., 2019, Nicholson & Kurucz, 2019; Rego et al., 2015). SSM is a new paradigm that requires an influential leader to cultivate the recent changes in the organisation's facets. Effective communication with internal and external stakeholders becomes a vital instrument to effect the changes. Therefore, a rigid leadership style may not work because there is a need for flexibility (Ivory & Brooks, 2018) to enable adaptation to the new paradigm (Waddock, 2019; Etse et al., 2022). The shift by the business from traditional strategic thinking to sustainable strategic thinking requires innovation and dynamic decision-making in response to rapid environmental and societal changes (Beerannavar, 2020; Sheth & Parvatiyar, 2021).

Furthermore, transformational leaders are charismatic (Anderson & Sun, 2017; Waddock, 2019), hence the ability to change the mind sets of the people (Jaen et al., 2021) and to transform the organisational cultures (Dhopte & Sinha, 2016; Etse et al., 2019) to align with the new challenges. An organisation's culture is pivotal to achieving SSM implementation (Horak et al., 2018; Roscoe et al., 2019); hence, sustainability should form part of the organisational values (Henry et al., 2019; Jaen et al., 2021). Adopting sustainability as a core value for the business will guide the moral compass to yield behaviours aligned with sustainability (Meijaard & Sheil, 2019), influencing SD. The exemplary leadership competencies are required to cultivate a sustainability culture in the whole business (Chan et al., 2021; Ivory & Brooks, 2018; Montiel et al., 2020).

In addition to leadership capabilities, management competencies are essential for the SSM implementation to translate the strategy into action (Gagne, 2018; Khan et al., 2018). Management practices should not be too rigid to enable dynamic strategic decision-making (Henry et al., 2019) and strategic agility (Ivory & Brooks, 2018). Managers and leaders are urged to adopt systems thinking (Carmine & De Marchi, 2022; Murray et al., 2017) to effectively integrate SD in business actions at all levels to deliver superior business quality (Carmine & De Marchi, 2022). Strategic agility is also required to foster continuous strategy development and innovation for adaptation (Borland et al., 2019; Mohsin et al., 2021; Ivory & Brooks, 2018).

Both leadership and management capabilities are equally essential to ensure SSM implementation in the industry (Dzhengiz & Niesten, 2019; Jones et al., 2018; Khan et al., 2018). Top management is expected to possess the best ethical considerations, rigor, prudent accounting policies, and the ability to manage diversity and discipline (Boone et al., 2019; Jaen et al., 2020) to enable the achievement of the strategic goals by guiding the actions and the organisational behaviours (Garne,

2018; Zhu et al., 2019). Hence, the weaving in of green strategies (Borland et al., 2019; Joseph et al., 2019) throughout the organisation's DNA resulting in an organisational culture that believes in sustainability.

2.6.4 The Benefits of SSM to the Business

The conventional business strategy based on Porter's 5 forces (Gans & Ryall,2017; Durand et al., 2017) alone has got limits in sustaining and achieving competitive advantage for today's businesses where profits have to be balanced with environmental protection and social equity (Frynas et al., 2017; Miska et al., 2018; Walsh & Dodds, 2017). Today's business is expected to add value in the three dimensions of SD (Hahn & Ince, 2016; Jones, 2016; Sheth & Parvatiyar, 2021)by simultaneously driving financial, social, and environmental goals. SSM integrates sustainable development into the conventional strategy(Engert et al., 2016; Rubio – Mozos et al., 2020; Stead & Stead, 2019), bringing a balance to the three dimensions of SD (Bilinska – Reformat et al., 2018; Horak et al., 2018). Borland et al. (2016) have lamented the shortfalls of conventional strategic management in ecocentric thinking (Borland et al.2019), which can be achieved through the application of SSM (Stead & Stead, 2019).

In addition, SSM encourages a circular economy (Murray et al., 2017; Puglieri et al., 2022), which promotes the adoption of green strategies (Akhtar et al., 2018; Mohsin et al., 2021) in businesses. Murray et al. (2017) posited that the circular economy balances economic development, with resource protection and environmental protection inseparable from the three pillars of SD: economic, environmental, and social. Even though the inclusion of SD into the business strategy was recommended three decades ago (Sheth & Parvatiyar, 2021; Walsh & Dodds, 2017), there is little progress evident on the ground to demonstrate the practice (Henry et al., 2019; Yekini & Li, 2019). The circular economy was emphasised in the Rio +20 in 2012(Murray, Skene & Haynes, 2017), and the principles of the circular economy were described by Rovanto and Finne(2022) and have

mentioned the practices of circular economy as reduce, re-use, recycle and recover(4R). Through its principle of cradle-to-cradle (Ciliberto et al., 2021; Murray, Skene & Haynes, 2017), the circular economy limits pollution by causing industrial systems and natural systems to coexist in harmony (Borland et al., 2016). This promotes resource efficiency through re-using and recycling technical nutrients (Rovanto & Finne, 2022). Waste reduction and the promotion of turning waste into a resource (Ciulli et al., 2020) is a pollution prevention strategy at source.

Scholars indicated SSM is a competitive advantage for the business (Walsh & Dodds, 2017; Su, Peng & Xie, 2016; Stead & Stead, 2019). Companies in Australia benefitted from the integrative embrace of SD in their strategies (Mees & Smith, 2019). Through the implementation of an SSM, an organisation can attain some reputation and internal resources that are valuable, rare, and not easy to imitate by competitors (Horak et al., 2018; Goergen & Tonks, 2019). Borland et al.(2016) have confirmed that SSM is a competitive advantage in their statement that articulated that firms achieve superior performance by managing their relationship with the natural environment through the development of valuable, rare, difficult – to imitate, non – substitutable resources related to pollution reduction, sustainable development and product stewardship.

2.6.5 Challenges of SSM implementation & Research Gaps

Leadership capabilities and management capabilities were found to be lacking to enable the integration of SD into strategic thinking and decision-making (Benkert, 2021; Borland et al., 2016; Henry et al., 2019). Committed leadership would quickly transform the organisation's behaviours and culture to align with sustainability issues (Gagne, 2018; Jaen et al., 2020; Akhtar et al., 2018). Through their strategic positioning, leaders and top managers would influence sustainability in the long-term business strategy (Dzhengiz & Niesten, 2019; Simsek et al., 2017; Boone et al., 2018). This would include managing diversity and treating sustainability as a similar strategic function in the

organisation (Henry et al., 2019; Jaena et al., 2021).

Studies have revealed that contemporary leadership and management skills are lacking in Chief Executives and Top Management Teams (TMTs) (Henry et al., 2019; Rego et al., 2015). Contemporary human resources skills such as problem-solving, big data analytics, and the internet of things, qualitative and analytical, are dynamic capabilities for sensing and seizing opportunities (Akhtar et al., 2018; Boone et al., 2018). Top Management is expected to possess some competencies that would enable networking with external stakeholders (Ghobakhloo et al., 2021; Zhu et al., 2019), managing diversity, treating sustainability as part of the organisational strategic choices(Jaen et al., 2021) and balancing the tensions in the TBL goals (Carmine De Marchi, 2022; Joseph et al., 2020).

Previous studies emphasized full management capabilities to enable tremendous success in identifying strategic opportunities (Akhtar et al., 2018; Montiel, 2020) but did not mention transforming the strategy into action (Gagne, 2018). Therefore, the full benefits of SSM can only be realised when the top managers can influence the actions of the functional managers to support green leadership and management (Jaen et al., 2020; Mohsin et al., 2021). Hence, the weaving of the TBL should include all the business practices, including the functional and operational strategies (Stead & Stead, 2019; Wang & Mao, 2020). Skene & Haynes (2017) have confirmed that systems thinking would enable effective integration of SD principles from top to bottom. However, methodologies and measuring tools for TBL performance are not adequately balancing the three perspectives of SD (Ciliberto et al., 2021; Villamil et al., 2020). GRI and the UN Global Compact have suggested guidelines for firms to measure their sustainability performance (Jastram et al., 2022; Monteiro et tal., 2021). Still, these guidelines are voluntary and do not hold the business entities accountable for non-compliance (Borgstedt et al., 2017).

Conducting some applied research on specific business sectors(Mio et al., 2020; Pedersen et al., 2018; van Zanten & van Tulder, 2018) to explore the integration of SD principles in business strategies is an assessment of their practices and demonstration of a commitment to the global challenge of SD(Carmine & De Marchi, 2022; van Tulder et al., 2021). Mio et al. (2020) have indicated a lack of knowledge about business's role in addressing the grand challenges. Their sentiments are in line with Murray et al. (2017), who showed that the industry calls for guidance on implementing green strategies. Practical advice is required to increase the uptake of SD by the sector (Henry et al., 2019; Joseph et al., 2020). Organisations have to build internal capabilities to enable them to adapt to the changing business environments (Benkert, 2020; Ghobakhoo et al., 2021), and these capabilities were found to be lacking for businesses in emerging economies (Akhtar et al., 2018; Wang & Mao, 2020).

SD is a global challenge (Carmine & Marchi, 2022; van Tulder et al., 2021) and forms part of the business's external environment. Organisations that do not position themselves for these contemporary challenges (Bilinska – Reformat et al., 2018) may suffer loss or cease to exist due to the changing environmental requirements (Villamil et al., 2021). Business strategies must respond to economic, social, and environmental demands (Edwards, 2020). The WBCSD has committed to sustainable development aspirations (O'Reilly et al., 2018; Villamil, 2021) through which they urge businesses to achieve peace & prosperity for the planet and the people. The business's positive action by embracing the eco-centric view in their business practices (Bolarnd et al., 2019; Joseph et al., 2019) would overcome the grand challenges and advance the theory of sustainable strategic management(Joseph et al., 2020; Stead & Stead, 2019) which is currently at an infancy stage.

2.7 Trade Effluents

Trade effluent is any liquid waste produced in any trade or industry and discharged directly into the sewerage system (Wallace et al., 2017; Hu et al., 2016). Various industries and institutions release trade effluents, including manufacturing, healthcare, laundry, etc. These effluents are of various compositions depending on the type of business processes (Niu et al., 2016; Bhatia et al., 2017). Effluents released from manufacturing industries are characterised by aggressive chemicals such as dyes from the textile (Jorfi et al., 2016; Borges et al., 2016), fats from abattoirs (Atuanya et al., 2018), heavy metals from the tannery (Sivakumar, 2016) and bran residues from the breweries (Firew et al., 2018), while effluent from healthcare is characterised by antibiotics (Ata & Tore, 2019). The composition or the strength of these effluents may affect the sewer system(Bhatia, Sharma, Singh & Kanwar, 2017) through which there are disposed of as well as the wastewater treatment at the end of the pipe (Ata & Tore, 2019; Chan et al., 2020; Powley et al., 2016). Previous studies have revealed that conventional wastewater treatment facilities cannot treat heavy pollution loads, which end up in river systems affecting the water resources and public health (Hu et al., 2016; Jorfi et al., 2016; Chen et al., 2017).

To avoid pollution problems caused by wastewater management from the industry, which is a globalchallenge (Sivakumar, 2016; Giri & Qiu, 2016; Bhatia et al., 2017), businesses located upstream of the centralized wastewater treatment facilities are expected to manage their trade effluents by reducing the pollution load before conventional treatment(Ata & Tore, 2019; Schaider et al., 2017). The management of these effluents at the end of the pipe is a problem for developing economies (Bhatia et al., 2017; Sivakumar, 2016), hence pollution of the environment due to the industrial effluent discharges (Dobrovolska, 2018; Leonidou et al., 2015). Furthermore, the design for most of the centralised wastewater treatment facilities are not suitable for industrial wastewater treatment. Therefore, the reduction of industrial pollution load would enable effective treatment (Chen et al.,

2017; Jorfi et al., 2016). Poor wastewater management affects public health (Hu et al., 2016) through pollution of the environment and water resources (Borges et al., 2016; Chen et al., 2017; Bhatia et al., 2017).

The pollution caused by trade effluents threatens the SD agenda that aims to end poverty, protect the environment, and promote social welfare by 2030(Doh et al., 2017; Dobrovolska, 2018; Wysokinska, 2017). The TBL performance framework (Walsh & Dodds, 2017; Horak et al., 2018) is relevant in trade effluent-generating industries, specifically the application of SSM, which considers the anthropocene and the eco-centric nature of the business (Bolarnd et al., 2019). Pollution caused by trade effluents may affect the livelihoods of the communities adjacent to the industry, thus resulting in poor stakeholder relationships (Martinez et al., 2016) involving both the present and future generations (Schrempf- Stirling et al., 2016). Appropriate business models for the trade effluent-generating industries such as cleaner production (Sullivan et al., 2017), circular economy (Murray et al., 2017), and design for the environment (Lozano, 2019), may curb this pollution at its source. When describing the circular economy, Murray et al. (2017) indicated its focus on biogeochemistry and resource cycling, ensuring reduced energy and raw materials throughput. Embedding the SD initiatives into the industry's process will enable the co-existence of the industrial systems with the natural systems (Bolarnd et al., 2016; Murray et al., 2017).

2.7.1 Textile Effluents

The textile industry worldwide produces large quantities of wastewater with varying chemical compositions (Borges et al., 2016). The complexity of textile industrial wastewater causes difficulty in its treatment. Hence, textile effluents are polluters of water resources (Bhatia et al., 2017; Borges et al., 2016). The effluent generated from this type of industry is comprised of organics, including polyacrylates, phosphates, sequestering agents such as EDTA, deflocculating agents, antistatic

finishing agents, carriers from dispersed dyeing, fixing agents from direct dyeing, preservatives, auxiliaries from completing steps in particular water – fire and moth – proofing(Borges et al., 2016). These include pesticides/insecticides from raw wool and cotton, latex from carpet manufacturing, and ionic surfactants, such as nonyl-phenolethoxylate(NPE) used in wool scouring, chromium compounds as well as heavy metals(Bhatia et al., 2017).

The economic value of the textile industry is globally noticed and contributes positively to many countries' economic growth (Borges et al., 2016). However, effluents produced by these industries pose a threat to the planet and the people (Hu et al., 2016; Giri & Qui, 2016; Powley et al., 2016). The presence of dye compounds in aquatic environments blocks the sunlight affecting the photosynthesis of aquatic plants. These dyes may be absorbed by marine organisms and in the process affect their biological systems (Borges et al., 2016; Bhatia et al., 2017). On the other hand, chemicals produced from the dye compounds were found to be mutagenic and, carcinogenic, non-biodegradable, which means they can bio accumulate in ecosystems with the possibility of being passed through the food chain (Jorfi et al., 2016; Ramachandra et al., 2017). Therefore, textile industrial effluents are an emerging ecological concern that triggers strategic plans for the safe disposal of these effluents by the textile industry (Borges et al., 2016).

Due to their chemical composition and colour, these effluents may cause a risk and a nuisance to the adjacent communities where the practice is to discharge effluent directly into the sewer line that ultimately discharges into the river systems. The co-existence of the industrial systems (Murray et al., 2017) and the natural systems is disturbed by the release of textile effluents into the sewer system without pre-treatment or directly onto the environment without proper treatment. The industrial revolution and rapid population growth have increased the demand for textile materials, consequently

increasing the number of textile industries and their effluents (Yaseen & Scholz, 2016). The significant challenges posed by textile effluents range from environmental to social difficulties caused by the excessive use of water, pesticides, and chemicals(Pedersen et al., 2018), which are pollutants. Studies have revealed the increase of textile factories in the developing world, which negatively affects the environment due to their contaminated effluents (Yaseen & Scholz, 2016). Textile effluents contains chemical constituents such as biocides, chlorophenols, carcinogenic amines, free formaldehyde, surfactants, disinfectants, solvents, softeners, heavy metals, and salts, making these wastewater streams to be resistant to biodegradation and photo degradation (Oketem et al., 2019). Therefore, the composition of the textile effluent affects the choice of wastewater treatment technologies (Yaseen & Scholz, 2016).

2.7.2 Brewery Effluents

The brewery is another type of industry that uses large amounts of water and, as a result, produces large volumes of high-strength wastewater (Adegbite et al., 2018; Zinabu et al., 2018). Effluent from the brewery is characterised by high carbohydrates, nitrogen, phosphorus, washing reagents, high concentrations of heavy metals such as copper (Cu), Zinc (Zn), and Iron (Fe), total suspended solids (TSS), and alkalinity (pH) (Kim et al., 2016; Firew et al., 2018). It is a general practice worldwide that the industry discharges into the local sewers (Adegbite et al., 2018), however, the industry has to employ some pre-treatment to reduce the pollution load before discharge (Firew et al., 2018).

Furthermore, brewery effluent, due to its strength, is aggressive to the sewer line and may cause some corrosion of the pipes that will ultimately lead to sewer leakages affecting the quality of the environment and public health (Adegbite et al., 2018). Due to its chemical concentration (Kim et al., 2016), effluent from the brewery would also cause problems at the end of pipe treatment by affecting

the biological treatment (Chen et al., 2017; Jorfi et al., 2016). Pre-treatment of the brewery effluents before discharge into the sewer line and recycling for non–potable use within the industry reduces the pollution load (Firew et al., 2018; Adegbite et al., 2018), hence reducing the pressure exerted by pollution loading on the sewer system. Adoption of the SD initiatives, such as the circular economy that encourages the recycling of technical nutrients and the discharge of biological nutrients (Ciliberto et al., 2021; Murray et al., 2017), must be considered to promote resource recovery (Chrispim, Scholz & Nolasco, 2020) at industry level.

Developing economies mostly experience problems with brewery effluents (Adegbite et al., 2018; Firew et al., 2018; Alayu & Leta, 2020; Firew et al., 2018). Adegbite et al. (2018) revealed that brewery effluents affect the quality of the receiving waters due to high temperatures, acidity, and colloidal formations due to suspended solids. The release of these effluents into the receiving waters affects the downstream users (Alayu & Yirgu, 2018; Saikumari et al., 2020), who may have been depending on the source of water for livelihood support (Zinabu et al., 2018; khan et al., 2021). Another study on brewery effluents conducted in Ethiopia indicated that the brewery effluent influenced the levels of pollutants in the central treatment facility (Firew et al., 2018). Studies have demonstrated the importance of treating brewery effluent on-site to lower its strength before discharge (Biase et al., 2017; Adegbite et al., 2018).

2.7.3 Abattoir Effluents

Abattoirs also generate trade effluents (Zinabu et al., 2018; Atuanya et al., 2018). The effluent generated from the abattoir is characterised by organic pollution loading due to animal blood, paunch manure, fat, internal organs, carcass trimmings, hides, urine, and animal faeces (Adesina et al., 2018). Water used in boilers is hot, causing the abattoir's fat to dissolve. This fat will solidify when it cools off, clogging the sewer line pipes. Therefore, effluents from the abattoir are highly nutritious due to

the manure and highly organic due to the animal blood and fat. Abattoir effluents require some pre-treatment to lower the temperatures and to reduce the organic pollution load before discharge into the sewer (Atuanya et al., 2018).

Additionally, solidified fats may cause some sewer pipes to block, resulting in sanitation spillages polluting the environment and water resources (Wallace et al., 2017). High-temperature effluents are also not desirable for conventional biological treatment, which uses microorganisms to digest the waste in the wastewater. Organic pollution loading found in Abattoir effluents also contains organic pollutants that are difficult to treat using conventional wastewater treatment technologies. The overloads affect the efficiency of treatment in central wastewater treatment resulting in pollution threats. Abattoirs pose a significant challenge to water resources due to the production of manure and blood. Chikwendu et al. (2019) have posited that abattoirs are an environmental hazard in Nigeria due to indiscriminate and improperly discharged wastes that cause leachates from serial decomposition processes, enteric pathogens, excess nutrients, which may contaminate both the surface and underground waters. Higher-strength organic pollutants are hazardous to the environment (Alayu & Leta, 2020; Alayu & Yirgu, 2018). Blood and fat constitute the highest pollution load, and blood has the highest chemical oxygen demand (COD), (Chikwendu et al., 2019), making abattoir effluents undesirable for discharge without treatment.

Wastewater treatment technologies are available to treat and reduce the pollution load on-site. The application of nanotechnology (Jumadi et al., 2020) is an option for the industry to treat effluent on-site. Kim et al. (2016) recommended using constructed wetlands to remove phosphorus from industrial effluents. Discharge of untreated or partially treated industrial effluents negatively affects the environment (Giri & Qiu, 2016; Hu et al, 2016), hence affecting the social welfare of the people.

Pollution released from the abattoir effluents may cause water-borne diseases such as diarrhoea, urinary tract infections, and respiratory illness (Adesina et al., 2018). The nutrients from the manure (Adesina et al., 2018) may fertilize the waterways, affecting the livelihoods of the communities adjacent to the industrial operations. Khan et al. (2021) have confirmed the degrading effect caused by urbanization and industrialization on the environment, specifically on water quality. Chikwendu et al. (2019) have further alluded to the threat to public health posed by the discharge of untreated abattoir effluent and have suggested recycling the waste into valuable by-products for use in the industry.

2.7.4 Strategic Management of trade effluents

The focus on the management of trade effluents has been concentrated at the end of the pipe through the implementation of scientific and engineering solutions (Jumadi et al., 2020; Kim et al., 2016). Studies have proven that due to industrialization and population growth, industrial effluents have become hazardous to the environment due to insufficient treatment before discharge (Adesina et al., 2018; Atuanya et al., 2018). These engineering and scientific solutions involve applying wastewater treatment technologies to reduce the pollution load before discharge (Firew et al., 2018). Effluent discharge from the brewery, abattoirs, and textile industry is rich in organic chemicals (Bhatia et al., 2017; Adesina et al., 2018). Most of these chemicals are carcinogenic and mutagenic, while some do not biodegrade when discharged into the environment (Sivakumar, 2016; Jorfi et al., 2016). Therefore alternative solutions have to be considered to tackle the problem, hence the SSM approach that would instil a culture of SD in the whole organisation (Mio et al., 2020).

Pollution problems posed by these industrial effluents require dynamic strategic thinking and decision-making (Akhtar et al., 2018; Boone et al., 2018; Ahammad et al., 2021) to prevent pollution at the industry level and improve product stewardship (Kuokkanen & Sun, 2019). The growth of the industry is instrumental in economic development (Okaro et al., 2018; Qeke & Dubihlela, 2018), but

it is never without some negative impacts on the environment and the social welfare of the people (Sivakumar, 2016; Niu et al., 2016). Therefore, internal dynamic capabilities (Ivory & Brooks, 2018) are required for strategic inclusion of pollution prevention measures in the business' long-term plans (Puglieri et al., 2021; Chan et al., 2022).

Pollution prevention at source, when viewed as a strategic business choice(Borland et al., 2016; Chan et al., 2022) is a competitive advantage(Horak et al., 2018; Tollin & Christensen,2019) that helps the business to achieve superior performance(Carmine & De Marchi, 2020) by managing their relationships with all their stakeholders including the natural environment(Akhtar et al., 2018; Ghobakhloo et al., 2021; Jones et al., 2018), hence developing rare, difficult – to-imitate, non-substitutable resources related to pollution reduction, product stewardship, and sustainable development(Su et al., 2016; Tollin & Christensen, 2021). SD as a global challenge (Montiel et al., 2020; O'Reilly et al., 2018; Pless et al., 2021) calls businesses to embark on business models that are catering for the benefits of the environment and the people (Pedersen et al., 2018).

Integrating pollution prevention into business models promotes the green models (Mohsin et al., 2021), which is in line with the SD initiative of the green economy (Dhopte & Sinha, 2016; Murray et al., 2017). Pollution prevention as a strategic initiative is a responsible business practice (Jaen et al., 2020; Montiel, 2020) that demonstrates the care of the business for future generations (Dzhengiz & Niesten, 2019; Jones et al., 2018). Studies have indicated that planning for the future generation is complex (Borgstedt et al., 2017; van Zanten & van Tulder, 2018), and most of the time, businesses are resorting to green washing to quench the stakeholder pressures (Allen et al., 2019; Borgstedt et al., 2017).

Sustainable strategic management of trade effluents in the industry would target all management levels to instil pollution reduction mind-sets (Jaen et al., 2020; Zacher et al., 2021). Horak et al. (2018) mentioned the importance of organisational cultures in shifting from traditional business practices to sustainable ones. The TBL performance framework (Henry et al., 2019), the green business models (Mohsin et al., 2021; Pedersen et al., 2018), and the industrial ecology (Sullivan et al., 2017) can all be facilitated by strategic thinking. As a result balancing the economic goals with environmental and social benefits (Carmine & De Marchi, 2022; Joseph et al., 2020) becomes achievable when included in the strategic management process (Stead & Stead, 2019; Sullivan et al., 2017).

However, studies have revealed that in the past, there was more effort made to balance the economic and environmental pillars, leaving the social pillar behind (Tate & Bals, 2018). Pollution directly affects the social welfare of the people(Chikwendu et al., 2019; Ciliberto et al., 2021), and if a business does not plan for pollution prevention(Chan et al., 2021), this pollution may end up affecting its physical environment(Sheth & Parvatiyar, 2020; Villamil et al., 2021; Sivakumar, 2016; Niu et al., 2016). At the same time, this will build tensions with its stakeholders (Parente, 2020; Schrempf – Stirling et al., 2016; Martinez et al., 2016). The business of the 21st century is no longer just shareholder-focused to benefit its owners (Beerannavar, 2020; Hahn & Ince, 2016; Jones, 2016; Ludeke – Freud, 2019) but stakeholder-focused taking into consideration the environment in which it operates, including the future generations (Borland et al., 2019; Burritt et al., 2020; Sasse – Werhahn, 2020).

Strategic inclusion of pollution prevention initiatives in trade effluent-generating industries promotes cleaner production (Beerannavar, 2020; Ghobakhloo et al., 2021), and it is a sign of good

corporate governance, which yields a positive image for the business (Mees & Smith, 2019; Georgen & Tonks, 2019; Mees & Smith, 2019; Wang & Mao, 2020). The success of the Australian financial services companies during the Global Financial Crisis (GFC) of 2009 resulted from their excellent corporate governance, influenced by the embrace of the Principles for Responsible Investment (PRI), which proposes international standards for business sustainability (Mees & Smith, 2019). Strategic pollution prevention at source is an excellent environmental practice that protects social welfare. Frynas et al. (2017) have posited that; scholars of business social responsibility and sustainable development suggested to companies and financial markets to integrate environmental, social, and governance concerns into their day-to-day strategic decision-making for the benefit of the wider society. Improving the strategic business view in terms of pollution prevention at source (Chan et al., 2020) may result in resource efficiency, superior returns on investments, profit, and improved stakeholder relationships (Carmine & De Marchi. 2022; Ghobakhloo et al., 2021; Jaen et al., 2020).

Strategic pollution prevention at the industry level contributes positively to the achievement of the SDGs (Dobrovolska, 2018; van Zanten & van Tulder, 2018). van Zanten and van Tulder (2018) have expressed the importance of involving the private sector in achieving international policy goals. Pollution prevention at source as a strategic option for the business gives the business an ecocentric view (Borland et al., 2016; Borland et al., 2019) that supports nature in economic growth. The new agenda on SD comprises of 17 goals and 169 targets focused on people, the planet, prosperity, peace, and partnerships (Mio et al., 2020; Wysokinska, 2017; Van Tulder et al., 2021; Van Zanten & Van Tulder, 2020). A strategic view on pollution prevention directly addresses the global development agenda, contributing mainly to Goal 6 on clean water & sanitation and Goal 9 on the industry, innovation, and infrastructure (Fig 1, Van Tulder et al., 2021). SDG 6.3 states explicitly, “By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of

hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally" (Essex et al., 2020). A strategic focus on pollution prevention helps to fulfil the global agenda by encouraging industries to use sustainable technologies for adequate and comprehensive wastewater management, as well as influencing the choice of pre-treatment technologies based on cost-effectiveness and social and economic benefits (Aluya & Yirgi, 2018).

van Zanten and van Tulder (2018) have mentioned the business' four initiatives to support the SD agenda: principle–based, certification, reporting, and process-based. The SDG framework (Mio et al., 2020; Wysosinka, 2017) is vital in guiding business policies and practices. SD strategic thinking must align with international policy goals (van Zanten & van Tulder, 2018). The adoption of the SD principles at astrategic view has influenced the reporting of the SD initiatives that seek to advance environmental and social objectives (Rosati & Faria, 2019; van Zanten & van Tulder, 2018). Changing business attitudes towards new sustainability practices, technologies, and business models(Ghobakhloo et al., 2021) is a great challenge in the implementation of the SD agenda, hence the adoption of more sustainable practices,technologies, and business models might be motivated by competitive opportunities and threats, compliance with regulations, and pressure from external and internal stakeholders. Previous studies have lamented the green washing (Sheth & Parvatiyar, 2021) done by the business to respond to the stakeholder pressures with no changes in the internal structures of the company (Allen et al., 2019; Borgstedt, 2017).

Strategic management of trade effluents is a re-focus by the business entities from profit making alone to create environmental and social benefits(Burritt et al., 2020; Horak et al., 2018) as suggested by Elkington in the TBL performance framework approach(Dzhengiz & Niesten, 2020;

Joseph et al., 2020; Walsh & Dodds, 2017). The UN Global Compact, launched in 2000, with over 12,000 signatories (around 8000 businesses and 4000 non-businesses), is the largest corporate sustainability initiative in the world based on voluntary participation and has made commitments through their membership to "align operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment, and anti-corruption, and to take action in support of UN goals and issues" (Horak et al., 2018). Implementing sustainability practices and environmental systems requires some innovation in environmental, technological, and organisational processes (Borland et al., 2019; Mohsin et al., 2021; Rosati & Faria, 2019). Adopting sustainability practices, including strategic pollution prevention, is an ethical choice that depends on the organisation's strategy and mind-set (Horak et al., 2018; Rosati & Faria, 2018). Rosati and Faria (2018) have argued that strategic commitment to sustainability programs indicates that the organisation is also committed to providing the skills and changing the culture to address the requirements of the SD concept.

2.7.5 Pollution Prevention Strategies at Source

Pollution prevention as a strategic choice for the trade effluent-generating industries is an eco-centric view that promotes sustainability (Beerannavar, 2020; Borland et al., 2016; Chan et al., 2020). Horak et al. (2018) have posited that adopting sustainability initiatives can provide firms with several benefits, including enhanced trust from stakeholders, a positive image, efficiency in resource management, a competitive advantage, superior returns on investments, and profitability. Businesses were urged to balance profits with the protection of the environment and the welfare of the people (Benkert et al., 2021; Hanh et al., 2018; Frynas et al., 2017), taking into consideration that the resources derived from the environment are finite (Ciliberto et al., 2021; Voronkova et al., 2019). Thus regarding exceptional business contributions to sustainable development(Carmine & De Marchi, 2022) by regarding environmental and social concerns as an end in themselves, not just as a means to the end of profit maximization (Hanh et al., 2018; Joseph et al., 2019). The same environment

from which the business derives the resources is the sink for the wastes generated by these businesses (Dobrovolska, 2018). Therefore, pollution caused by businesses in the quest to make a profit without any due care to the environment and social welfare may deny the future generation the natural environment and its benefits (Kolk, 2016; Martinez et al., 2016).

Pollution prevention initiatives at the industry level are green strategies that give the business a strategic posture to reduce the negative impacts of business activities on the natural environment (Lamb et al., 2017; Roxas et al., 2017 Lamb et al., 2017). The facilitation of the inclusion of these initiatives at the corporate level is influenced by green leadership and management (Akhtar et al., 2018; Dopte & Sinha, 2016; Wang & Mao, 2020; Zhu et al., 2019), hence an organisational culture that believes in sustainability (Henry et al., 2019; Horak et al., 2018; Murray et al., 2017). Furthermore, pollution prevention at source indicates that the business delivers value to society and the environment (Hahn & Ince, 2016; Jones, 2016; Tollin & Christensen, 2019). Including pollution prevention at source is a sustainable practice and a commitment to global challenges (Howlett & Saguin, 2018). Horak, Arya & Ismail (2018) posited that organisations are unwilling to implement strategies that address sustainable development. Roxas et al. (2017), who posited that small businesses are reluctant to embark on sustainability initiatives because they perceive them to be risky and may add to costs, shared the same sentiments. Scholars have suggested closed-loops and cradle-to-cradle cycles (Rovanto & Finne, 2022) as some of the pollution prevention initiatives that are suitable for adoption at the industry level to prevent pollution (Borland et al., 2019, Murray et al., p 2017).

2.7.5.1 Zero Liquid Discharge (ZLD).

ZLD is a policy that promotes the cradle-to-cradle, a closed-loop system that turns wastewater into a resource (Borland et al., 2016). This practice supports the circular economy (Boland et al., 2019; Ciliberto, 2021; Rovanto & Finne, 2022), which promotes recycling and re-use (Powley et al., 2016),

reducing the amount of liquid that is discharged from the industry. Adopting the ZLD policy by the trade effluent-generating industries is a positive change toward addressing the grand challenges (O'Reilly et al., 2018). The ZLD provides an opportunity for the industry to treat its effluent for use onsite (Chen et al., 2017; Schaider et al., 2017), hence reducing the pollution load into the sewer line and on the environment.

2.7.5.2 The 3R Strategy of Recycling, Reduce and Re-use.

The 3R strategy is one other green strategy (Borland et al., 2019) that the trade effluent-generating industries can adopt to regulate the amount of wastewater that is disposed into the sewer line and the environment. The 3 R strategy advocates for recycling, and re-use, which support the cradle-to-cradle closed systems (Borland et al., 2016; Borland et al., 2019; Sheth & Parvatiyar, 2020). Murray et al. (2017)have posited that recycling is fundamental to the circular economy and has played a significant part in sustainable practices for many years. The 3R strategy allows for resource recovery (Chrispim et al., 2020) and industrial symbiosis, where one industry uses waste from the other as a resource (Murray et al., 2017). Wastewater may produce value-added products such as renewable energy, water for different purposes, and bio fertilizers (Chrispim et al., 2020; Schaik et al., 2021). The process designs have to be restorative, providing for the flow of biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, designed to circulate at high quality without entering the biosphere; the aim is to 'design out waste, return nutrients and recycle durables (Murray et al., 2017).

The 3R strategy also promotes resource management efficiency (Horak et al., 2018; Walsh & Dodds, 2017) by reducing pressure on natural resources through re-use. Trade effluents can be recycled for non-potable uses such as boiler cooling instead of fresh water (Murray et al., 2017). Treated industrial wastewater is a water resource for non-potable uses like dust suppression, landscape

irrigation, and floor cleaning. Previous studies have supported beneficial re-use of industrial effluents in non–potable uses (Ata & Tore, 2019, Powley et al., 2016). Recycling resources through innovative recovery processes are more efficient, reducing the amount of raw material used and waste generation, hence the environmental and economic benefits (Chrispim et al., 2020). Trade effluents are rich in organic matter, posing a pollution threat to the receiving waters on discharge (Chikwendu et al., 2019; Adesina et al., 2018). Resource recovery is a potential solution for producing nutrients and energy (Chrispim et al., p. 2020). Schaik et al. (2021) have argued that although wastewater is a nuisance, it is also a reusable and valuable material source. Supporting resource recovery, Chrispim et al. (2020) have indicated its usefulness in removing nutrients like phosphorus from wastewater to safeguard natural waterways. Resource recovery improves the quality of the final effluent (Chrispim et al., 2020; Schaik et al., 2021), protecting the environment and social welfare (Khan et al., 2021).

2.7.5.3 On-site Wastewater Treatment.

Studies conducted in Nigeria and Ethiopia (Firew et al., 2018; Adegbite et al., 2018) have both pointed to the treatment of trade effluents on-site to reduce pollution load before discharge (Schaider et al., 2017; Bhatia et al., 2017) as a solution. Treatment on-site is a sustainable solution that prevents pollution at its source. Firew et al. (2018) stated that most of the effluent discharged by industries in Ethiopia does not meet the national discharge standards due to insufficient effluent or no prior treatment before discharge. The study by Adegbite et al. (2018) has also confirmed that industrial effluent discharged directly into the sewer line or onto the environment for both developed and developing countries pose a health hazard, causing a consideration for on-site treatment for these effluents. On-site wastewater treatment is highly recommended for the trade effluent-generating industries (Ata & Tore, 2019; Jorfi et al., 2016) to reduce the pollution load. This helps to remove the stubborn pollutants from going into the sewer (Chen et al., 2017) and from reaching the river systems where they may be a health hazard (Giri & Qiu, 2016; Hu et al., 2016; Khan et al., 2021).

Studies have revealed that conventional wastewater treatment facilities cannot treat industrial effluents (Ata & Tore, 2019; Borges et al., 2016) due to their chemical loading that is harsh to biological treatment (Jorfi et al., 2016). This problem results into the discharge of partially treated wastewater into the river systems causing water pollution (Bhatia et al., 2017; Hu et al., 2016). Therefore including an on-site treatment for trade effluents at the industry level is a strategic decision that an industry can make to promote good governance (Chan et al., 2020; Sheth & Parvatiyar, 2021) and, at the same time, deliver environmental and social value(Tollin & Christensen, 2019). Various on-site wastewater treatment technologies (Alayu & Leta, 2020; Jumadi et al., 2020) would require some evaluation for cost-benefit based on the type of effluent generated by the industry. These includes considerations for on-site treatment technology options. These are technologies such as the constructed wetland system for the removal of nutrients (Kim et al., 2016), nanotechnology for the removal of dyes, heavy metals, and bacteria (Jumadi et al., 2020) and biotechnologies for the removal of organic loading (Alayu & Yirgu,2018; Biase et al., 2017).

2.7.6 Environmental Degradation

The release of trade effluents into the environment is a source of pollution (Sahinkaya et al., 2019). Pollution of the environment may lead to loss of biodiversity and environmental degradation (Borland et al., 2019; Sheth & Parvatiya, 2020; Villamil et al., 2021). Over the past three decades since the inception of the broad SD definition by the Brundtland Commission Report "Our Common Future," industrial development has increased, leading to material and energy consumption, which are the drivers of environmental degradation (Beerannavar, 2020; Ciliberto et al., 2021). Beerannavar (2020) has posited that the ecological footprint has exceeded the earth's bio capacity and the renewal of the planet's resources is slow when compared to the consumption of those resources. The release of trade effluents may introduce harmful substances to the physical environment posing a threat to

environmental quality and the well-being of human society (Villamil, 2021).

Dischargeable or partially treated effluent is prevalent in developing countries (Alayu & Yirgi, 2020; Adegbite et al., 2018). These effluents contain some complex chemicals that have got the potential to degrade the surrounding environment rendering it unproductive due to the adverse effects of these pollutants (Ciliberto et al., 2021; Sheth & Parvatiya, 2020) or bio-accumulating posing a threat to the food chains(Ata & Tore, 2019). Urbanization and industrialization are never without pollution challenges, waste generation, and the degradation of natural systems (Borland et al., 2019). The effects of pollution affect the production of natural resources (Ciliberto et al., 2021) that may affect the raw material needed to drive industrial processes. Eang (2019) has also confirmed the industry's challenges, such as climate change and environmental degradation.

The use of Environmental Management Systems (EMS), such as the International Organisation for Standardization (ISO) 14001 standard, could be an effective strategic tool to help firms to improve their SD (Wang and Mao, 2020). By adopting an environmental management system, the industry caters to their environmental impacts throughout the business processes. An environmental management system is a pollution prevention strategy to avoid the end of pipe pollution (Chan et al., 2021) that may cause environmental degradation. Obeidat et al. (2020) have also confirmed that adopting the ISO 14001 is beneficial to companies because it helps prevent pollution, minimizes waste, and lowers environmental releases preventing environmental degradation. Corporations the world over are responsible for environmental degradation, and as a result, companies are working on their organisational cultures to adopt pro-environmental behaviours (Tian & Robertson, 2019).

Previous studies described industrialization as environmentally damaging due to unmanaged

discharges and emissions (Obeidat et al., 2020; Tian & Robertson, 2019). Green corporate practices are a proactive approach to environmental management that can curb pollution and avoid environmental degradation (Chan et al., 2020; Phillips, 2019). The negative environmental impacts due to industrial activities affect the ecosystem causing pollution to water and air (Cederberg et al., 2019; Obeidat et al., 2020). The extraction of natural resources (Cuervo – Cazurra, 2021) as input to the business processes is another area that contributes to environmental degradation. Beerannavar (2020) has lamented the ecological footprint far exceeding the planet's carrying capacity, causing faster resource use than their replenishment. Scholars have rhetorically pointed out the benefits of mitigating the adverse effects of business practices on the natural environment and the social welfare of the people (Fischer et al., 2020). A thorough examination of Foreign Direct Investments (FDI) is essential to avoid issues of environmental degradation (Li et al., 2019) that come with business opportunities.

2.8 Organisational Culture and Learning

SSM was suggested by Stead and Stead(Takacs et al., 2022) as a framework that integrates SD principles into business practices throughout the organisation at corporate, competitive, and functional strategy levels(Rubio – Mozos et al., 2020; Stead & Stead, 2019). Stead and Stead (2019) had realised the uptake of Elkington's triple bottom line (TBL) performance framework (Joseph et al., 2020; Ciliberto et al., 2021) suggested to balance financial goals with the social and environmental goals was not being embraced by the business as expected(Clementino & Perkins, 2020; Henry et al., 2019; Mio et al., 2020). The TBL framework and the theory of SSM are complementary, contributing positively to improving the theory and practice of strategic management. Combining the two aligns 21st-century business with the contemporary environment (Borland et al., 2019; Rubio – Mozos et al., 2020). SSM facilitates the weaving the TBL performance into business practices starting with strategic decision-making to the operational levels (Henry et al., 2019; Borland et al., 2016). The new paradigm shift for 21st-century business puts pressure on organisations to change their beliefs and attitudes to

accept the challenges and embrace the opportunities (Julius et al., 2016; Stead & Stead, 2019).

Studies have identified corporate culture as an internal organisational factor influencing an integrative approach to corporate sustainability (Roscoe et al., 2019; Jaen et al., 2021). Corporate culture defines organisational behaviours (Kiyak, 2017; Kwakye, 2018; Olejniczak & Lukasik, 2016), and it tells what the organisation stands for through its corporate vision, mission, andvalues (Tollin & Christensen, 2019). An organisation that is clear about what it stands for internally can position itself for its external environments (Horak et al., 2018; Waheed & Zhang, 2022). Organisational culture and learning influences attitudes and organisational behaviours, including leadership styles (Anderson & Sun, 2017; Feeney et al., 2022; Simsek et al., 2017). Responsible leadership (Jaen et al., 2020) is essential for building work environments conducive to development and motivation (Zhu et al., 2019; Waddock, 2019).

2.8.1 Organisational Culture

Organisational culture is an internal resource characterized as valuable, rare, inimitable, and non – substitutable, giving an organisation a competitive edge (Waheed & Zhang, 2022; Wang et al., 2021). It is an internal capability that sets an organisation apart from its competitors in the industry (Julius et al., 2016; He et al., 2020). A unique organisational culture that competitors cannot easily imitate is an asset to that organisation (Waheed & Zhang, 2022; Siganga, 2019), which influences organisational growth, development, and sustainability (Kwakye, 2018, Li et al., 2022). This provides the strength through which an organisation can influence creativity and innovation (He et al., 2020) to seize opportunities and overcome the challenges in its external environment (Wang et al., 2021). However, organisational cultures are difficult to change once rooted in an organisation (Siganga, 2019) hence, a rigorous change management to align with the new paradigm is essential.

Furthermore, a set of corporate values influenced by the organisation's vision and mission build organisational cultures (Li et al., 2022; Siganga, 2019). Siganga (2019) has described values as the adopted principles that directs organisational thinking and actions. On the other hand, Kwakye (2018) has defined organisational culture as experiences and beliefs acquired through social learning. In both cases, organisational culture guides the organisation's interactions with its internal and external stakeholders (He et al., 2020; Li et al., 2022). Traditional ethical organisational values such as trust, fairness, loyalty, care, and respect cement stakeholder relationships (Jones et al., 2016). The organisation's vision, mission, and values protect the organisational culture giving the organisation a unique character (Li et al., 2022; Siganga, 2019).

The new paradigm shift requires the business to transform traditional strategic management(Stead & Stead, 2019; Sullivan et al., 2017) by embracing the SD concept that is anchored on the three pillars of economic prosperity, environmental integrity, and social equity(Horak et al., 2018; Walsh & Dodds, 2017). Maximizing profits has been the norm for businesses (Hahn et al., 2018; Tate& Bals, 2018). Hence, there is a need for motivation for the business of the 21st century to adopt SD initiatives and practices voluntarily (Horak et al., 2018; Wang & Mao, 2020). A study conducted by Borgstedt et al. (2017) indicated that most businesses are not reporting their corporate environmental performance with transparency and honesty. van Zanten & van Tulder, 2018 echoed the same sentiments indicating that the majority of companies develop reactive strategies towards sustainability challenges and regularly use their CSR/sustainability strategy as window dressing or green washing. Studies have also revealed that many companies in the USA are doing green washing to conform to stakeholder pressures (Allen et al., 2019).

Stead and Stead (2019)'s SSM has to be applied at all levels in the organisation for effective

results (Murray et al., 2017; Rubio – Mozos et al., 2020), thus cultivating a culture of SD (Horak et al., 2018; Mio et al., 2020; Miska et al., 2018) in the whole organisation. Baumgartner (2014) also explained the SSM approach that integrates SD into conventional strategic management by describing the three different management levels: normative management, strategic management, and operational management, at which to integrate sustainability aspects into the business. The study further explained that Vision, mission, organisational culture, and sustainability engagement are part of the normative management level, corporate sustainability strategy is part of the strategic level, and the implementation of the sustainability strategy in the different corporate functions is part of the operational level.

Takacs et al. (2022) have applauded the SSM concept of Stead and Stead (2008) as a framework that considers the organisation, society, and other systems embedded in the ecological environment. Three levels of management described by Stead and Stead (2008) are corporate, competitive, and functional where the corporate level focus is on taking advantage of new market opportunities. These contributes to the socio and ecological benefits, while the functional level and the competitive level strategies enable the social and environmental low hanging fruits linked to the economic performance of the enterprise. Borland (2009), who emphasized on the systems–based and holistic nature required in corporate decision-making to create sustainable solutions for the future, supported the idea of Stead and Stead (2008). The work of Borland focused on strategic sustainability and corporate transformational change in order to integrate sustainability into strategic thinking. Borland et al. (2016) later worked on the sensing-seizing-maintaining competitive framework based on the intersection of ecological sustainability and strategic management. Therefore, to cope with the ecological and social trends, the strategy, vision, and culture must align with the changing business environment (Engert et al., 2016; Takacs et al., 2022).

Compliance to the SD agenda is not mandatory (Horak et al., 2018; Phillips, 2019; Wang & Mao, 2020) for the business, but it is a good socio and ecological practice (Obeidat et al., 2020; Takacs et al., 2022;) that is in line with the global development agenda (Abbas & Sagsan, 2019; Dobrovolska, 2017; Wysosinka, 2017; Zaid et al., 2020). The GRI, UN Global Compact, and WBCSD, have suggested that the business incorporate the UN_SDGs into strategic management and sustainability reporting to contribute to sustainable development (Jastram et al., 2022; Monteiro et al., 2021). Both the studies conducted by van Zanten and van Tulder (2018) and Borgsted et al.(2017) have demonstrated a lack of authenticity in sustainability reporting for companies following the GRI and UN – Global Compact guidelines. The reporting consistently follows the global policies, but there is a lack of transparency to verify to the stakeholders that, indeed, the claimed objectives on sustainability issues are being fulfilled (Borgstedt et al., 2017). Therefore, an organisational culture that promotes sustainability, ethical leadership, and high moral standards (Meijaard & Sheil, 2019; Miska & Mendenhall, 2018) is essential to drive the transformation of the business from conventional strategic management to SSM.

2.8.2 Stakeholder Relationships.

Organisational culture is the basis for building relationships with internal and external stakeholders (He et al., 2020; Jones et al., 2018). Organisations are likely to achieve extraordinary performance by building on their corporate image and good reputation with stakeholders through the implementation of pollution prevention initiatives, product stewardship, and sustainable development (Horak et al., 2018; Lamb et al., 2017; Li et al., 2022; Walsh & Dodds, 2017). A UK-based company Ricoh gained a good reputation after adopting anew closed-loop business approach that included zero waste- to – landfill which contributed to the company tripling its turnover, increasing its profits, and becoming a role model in its industry (Borland et al., 2016). On the other hand, a business that does

not uphold care by embracing sustainable development as part of its organisational culture may affect its stakeholder relationships costing the company in the long run (Jones et al., 2018; Shrempf – Stirling et al., 2016; Pisani et al., 2017). Ford and General Motors, who lost the respect and trust of their customers for irresponsible care, evidenced a poor stakeholder relationship, and they had to pay to restore their reputation (Martinez et al., 2017).

Organisational values such as trust, loyalty, care, respect, and ethics are solid catalysts for relationship building with both the internal and external stakeholders motivating good business practices (He et al., 2020; Jones et al., 2016; Li et al., 2020; Rego et al., 2015). Horak et al. (2018) mentioned that the rate of uptake of sustainability initiatives by the business is due to the cultural beliefs and values that motivate sustainability practices. Building an organisational culture that embraces sustainable development in the company's vision and values is a brand that enhances the reputation and trust of stakeholders (Horak et al., 2018; Obeidat et al., 2020; Mena et al., 2019). Stakeholder close relationships are a capability that is rare and difficult to imitate, hence sustainable competitive advantage (He et al., 2020; Jones et al., 2016; Wang et al., 2021), and these relationships can be firmed by the business commitment to socio–ecological challenges as a result of the business operations (Li et al., 2022; Zaid et al., 2020). Good stakeholder relationships anchored on loyalty and trust may reduce the window dressing and green washing (Borgstedt et al.,2017; van Zanten & van Tulder, 2018) that is currently prevalent in businesses to comply with the stakeholder pressures (Allen et al., 2019) without necessarily adhering to the claimed statements on sustainability (Borgstedt et al., 2017).

Stakeholder relationships are very crucial in the achievement of sustainability performance goals (Jones et al., 2018; Martinez et al., 2017; Wang et al., 2021); therefore, the organisational culture

has to aim at achieving good stakeholder relationships for the survival of the business. Scholars have defined corporate sustainability as "meeting the needs of a firm's direct and indirect stakeholders without compromising its ability to meet the needs of the future stakeholders as well" (Engert et al., 2016, p. 2834). Embracing sustainability culture helps in the achievement of company goals, at the same time protecting, enhancing, and sustaining the natural and the human resources that will be required for future growth (Wang et al., 2021; Takacs et al., 2022). Organisational cultures that embrace stakeholder relationships put the business at a competitive advantage (He et al., 2020; Jones et al., 2018; Wang et al., 2021). Borland et al. (2016) have also confirmed that firms achieve superior performance by managing their relationship with the natural environment (Li et al., 2022). Wang et al. (2021) and He et al. (2020) have both posited the importance of effective stakeholder management in the new business dispensation and new structures and processes for survival. The embrace of stakeholder relationships in the organisational culture that includes the needs of future generations (Hahn et al., 2018; Wang et al., 2021) is crucial for today's business. An organisation that is clear about its values will easily affect its external stakeholders, mainly sustainability-centred values that influence the company culture and its entire networks (He et al., 2020; Li et al., 2022, Zaid et al., 2020).

2.8.3 Leadership Styles

Organisational culture is defined by the organisation's values or principles anchored on the organisational vision and mission (Kwakye, 2018; Li et al., 2022; Singanga, 2019). Strategic direction and alignment with a long-term orientation, which involves the setting of vision, mission, and values, is the responsibility of the leadership (Maak et al., 2016; Rego et al., 2015; Waddock et al., 2019). Senior management initiates corporate culture, and then it is trickled into other parts of the business to instil specific values, beliefs, assumptions, and principles (Henry et al., 2019; Jaen et al., 2020). The organisation's strategic choices and behaviours are influenced by its leadership(Henry et al., 2019;

Zhu et al., 2019), and this may include agility(Ivory & Brooks, 2017; Jaen et al., 2020; Waddock, 2019) to align with the changing corporate values, beliefs, assumptions, and principles with the new paradigm shift(Wang et al., 2021). Leadership qualities such as trust, respect, ethics, and care are essential for creating an enabling climate for the workers and good relationships with stakeholders (Dobbins & Dundon, 2017; He et al., 2020; Jones et al., 2018). The organisational culture demonstrated by the leader influences both the internal and the external stakeholders (Olejniczak & Lukasik, 2016; Tatoglu et al., 2020).

The integrative approach to corporate sustainability is a new paradigm shift that requires the ability to manage contradictory elements simultaneously (Carmine & De Marchi, 2022; Hahn et al., 2017; Joseph et al., 2020; Painter – Morland et al., 2017). Dynamic leadership that acknowledges contradiction (Henry et al.,2019; Ivory & Brooks, 2017) is essential to provide strategic direction for success. This involves being strategic agile, seeing and seizing the opportunities, changing the direction and avoiding any collisions (Ivory & Brooks, 2017, Joseph et al., 2019). Leadership is crucial in guiding sustainability practices (Akhtar et al., 2018; Montiel et al., 2020) by setting the vision, mission, and values that create a supportive climate for SD initiatives (Borland et al., 2016; Li et al., 2022). Sustainability dictates the business to embark on change management to shift the organisational culture to align with the new business approaches (Olejniczak & Lukasik, 2016; Wang et al., 2021). Leadership capabilities remain vital to effect these changes and align the organisation with the new paradigm shift (Anderson & Sun, 2017) by translating organisational goals into organisational behaviours (Gagne, 2018).

The choice of leadership style required for cultivating the SD principles into the strategic management theory and practice (Borland et al., 2016; Kwakye, 2018) is very vital. The new

paradigm shift advocates for cradle-to-cradle, closed loops, corporate greening (Abbas & Sagsan, 2019), adoption to the changing environments, pollution prevention (Chan et al., 2020), process redesign, agility, etc. (Ciliberto, 2021; Murray et al., 2017; Ivory & Brooks, 2018). Therefore, dynamic leadership capabilities are essential to transform organisational goals into actions by influencing organisational behaviours toward the desired outcome (Gagne, 2018; Obeidat et al., 2020). Ivory & Brooks (2018) have identified leadership unity as an essential capability in strategic agility to influence the strategy, decisions, and culture for the achievement of collective commitments of common ground, common interest, empathy, and trust for an increased engagement at the organisational level. Other corporate mechanisms such as human resources (HR), management systems, technology, accounting systems, marketing, and research and development also create change (Abbas & Sagsan, 2019; Roscoe et al., 2019; Tian & Robertson, 2019). The leadership role needs distribution throughout the organisation to enable action and change at every level (Gagne, 2018) and not just concentrated at the top (Ivory & Brooks, 2018).

There are different types of leadership styles: transactional leadership, servant leadership, authentic leadership, ethical leadership, and transformational leadership (Anderson & Sun, 2017; Etse et al., 2022; Mekraz & Gundala, 2016). The leadership styles are dominated by the transformational, transactional framework (Anderson & Sun, 2017), but other new contemporary leadership styles such as ethical leadership (Zhu et al., 2019; Jaena et al., 2020), are also being recognised to address the challenges of the contemporary business environment (Dasborough et al., 2019). Responsible leadership with solid ethical foundations is essential for guiding the sustainable corporate strategy to fulfil the integrative change agent role by moulding sustainability–centred organisational cultures and structures (Jaen et al., 2020; Montiel et al., 2021; Obeidat et al., 2020). Stakeholder needs are critical (He et al., 2020; Wang et al., 2021) and leadership has to align the business with these needs

(Li et al., 2020, Takacs et al., 2022).

Studies have revealed that transformational leaders can inspire people to change (Anderson & Sun, 2017; Siganga, 2019), which is suitable for the transformation of the organisational cultures to align with the new paradigm shift. The ability to inspire people emanates from the charismatic nature of a transformational leader. Anderson & Sun (2017) have described a charismatic leader as the one who can articulate an inspirational vision of a desirable future and can motivate followers to devote exceptional effort to the causes advocated by the leader by sacrificing their self-interests. Rego et al. (2015) have posited that the leadership style suitable for transforming the business to an integrative approach to the SD application has to have a vision for the future of the business, be able to mobilize employeestowards the vision, energize and develop them as well as leading by example. Lack of motivation to influence businesses to adopt SD initiatives and practices hinder the advancement of the integrative approach (Horak et al., 2018).

Borland et al. (2016) have challenged today's business to a dynamic capability view to adjust to the business-changing external environments by adopting the five (5) ecocentric corporate transformational strategies. These five ecocentric corporate transformational strategies are; rethink, reinvent, redesign, redirect and recover to maintain their competitive advantage by engaging in sensing, seizing, and reconfiguring activities. The idea of Borland et al.(2016) resonated with the five-factor models of charismatic leadership that consists of being sensitive to constraints, threats, and opportunities in the external environment, articulating an appealing strategic vision, taking personal risks, exhibiting unconventional behaviour, and being exposed to followers needs (Anderson & Sun, 2017). The assertions and the conditions suit the characteristics of a transformational leader, which emphasises on engagements with followers to raise higher levels of motivation and morality by

appealing to higher ideals and moral values, empowering followers to produce profound and fundamental change (Yahaya & Ebrahim, 2015). Transformational strategies for ecocentric practices (Borland et al., 2016) require the expertise of transformational leaders for more profound levels of connection and higher levels of commitment and performance (Yahaya & Ebrahim,2015).

The case of Henkel in Poland is an evidence of an organisational culture transformed by creating ecological awareness among the employees. Henkel developed a code of ethics through which its actual values recognized the achievement of leadership in sustainable development. The development of the code of ethics was in response to the fact that ecology has become a desirable element of organisational culture and the pro-ecological aspects of running a business. This is because the progressive degradation of natural resources poses new challenges to enterprises requiring more innovative methods of strengthening ecological knowledge and increasing the effectiveness of activities in this area, including motivation programs (Olejniczak & Lukasik, 2016). Replicating the case of Henkel in other parts of the world will accelerate the integrative approach of SD in business. This will then reduce the ecological footprint of the business activities and products like energy and climate, materials and waste, water, and wastewater (Olejniczak & Lukasik, 2016). However, the implementation of sustainability practices in the developed world may differ from the developing countries (Jamali et al., 2017), which are often resource-poor and operate in underdeveloped institutional environments, which makes it unlikely for them to adopt environmental sustainability initiatives because these may be perceived as risky initiatives resulting in additional costs(Roxas et al., 2017).

Transformational leadership has the ability to transform organisational cultures through innovations (Olejniczak & Lukasik, 2016) and the influence on the commitment to high moral

standards (Anderson & Sun, 2017, Yahaya & Ebrahim, 2015). Innovation enables strategic agility and easy adaptation to changing environments, as described by Ivory & Brooks (2018), to allow organisational fluidity to the complex changes through strategic sensitivity, collective commitment, and resources, which were found not possible with other planning concepts such as the resource-based view, strategic planning, and sustainable competitive advantage. Previous studies have attributed the failure to achieve SD in business to low ethical and moral standards (van Zanten & van Tulder, 2018; Borgstedt et al., 2019), which is achievable through behaviour changes to reduce the prevalence of green washing (Allen et al., 2019). Transformational leadership coupled with transactional leadership (Anderson & Sun, 2017) provides incentives for good performance (Mekraz & Gundala, 2016; Yahaya & Ebrahim, 2016). Complementing these leadership styles with other contemporary leadership styles is an advantage. These are the servant leadership (Anderson & Sun, 2017), to promote growth at all levels in the organisation, and authentic leadership (Dasborough et al., 2019; Yahaya & Ebrahim, 2016) to foster greater self– awareness, promote positive psychological capacities and build high moral standards.

2.8.4 Organisational Learning

Organisational culture and organisational learning are intertwined (Etse et al., 2022; Li et al., 2022; Olejniczak & Lukasik, 2016). Organisational learning is essential for adaptation because it facilitates the transformation from conventional strategic management to include green innovations (Feeney et al., 2022; Obeidat et al., 2020; Rscoe et al., 2019). Olejniczak & Lukasik (2016) has described organisational culture as the whole of assumptions, attitudes, values, norms, and ways of thinking, which influence the enterprise and its employees into, creating an image in the environment that gives a particular meaning about the organisation. Ecological awareness is one important factor needed for the transformation of the organisation. Organisations may achieve ecological awareness through environmental knowledge strengthening, internal & external training, and information

campaigns to promote SD initiatives. Therefore, organisational learning facilitates the transformation of the organisational culture to align with the desired ecocentric posture of the business that supports harmony between the industrial systems and nature (Borland et al., 2016; Etse et al., 2022; Borland et al., 2019). The dynamic business environment requires strategic agility to align the processes, actions, structures, culture, skills, relationships, and attributes to the new developments (Ivory & Brooks, 2018; Obeidat et al., 2020). Organisational learning enables organisational fluidity to align with the new paradigm shift (Henry et al., 2019; Feeney et al., 2022).

Skills and competencies necessary for bringing the changes (Su et al., 2016; Akhtar et al., 2018) are developed either internally or externally (Olejniczak & Lukasik, 2016) to increase the organisation's internal capabilities for organisational change (Akhtar et al., 2018; Obeidat et al., 2020). Studies conducted by both Henry et al.(2019) and Shahzad et al.(2021) have identified a lack of internal capabilities in organisations as a hindrance to the business's integrative approach of SD application. Relevant leadership competencies such as dynamic decision-making, sensing, seizing, and reconfiguring(Henry et al., 2019; Ghobakhloo et al., 2021), energising and creating a positive organisational climate (Ivory & Brooks, 2018; Li et al., 2022) and building sustainable networks with stakeholders (Akhtar et al., 2018; Ludeke-Freud, 2019) are essential for the facilitation of the new paradigm. Shahzad et al.(2022) have posited that knowledge creation & transfer is a crucial resource for the business that contributes to superior performance by creating valuable, rare, and inimitable, and non-substitutable products and services(Ghobakhloo et al., 2021; Su et al., 2016; Wang & Mao, 2020).

Furthermore, organisational learning stimulates creativity and innovation (Akhtar et al., 2018; Shahzad et al., 2021) to cope with the changing business environments (Ivory & Brooks, 2018; Wang et al., 2021),which includes technological changes (Fisher & Kotha, 2016; Ghobakhloo et al., 2021).

Salama (2017) has posited that organisations exist in a turbulent environment. As a result, they have to learn new skills to survive technological advancements, changes in customer needs, and high competition (Fischer et al., 2020; Shahzad et al., 2021. Ivory and Brooks (2018) and Soundararajan (2021), who have supported strategic agility for the organisation to meet the complexity of continuous changes in their environments, buttress this point. Hence constant learning and capacity building (Feeney et al., 2022; Roscoe et al., 2019) develop the necessary skills that are required by the business for positioning in the 21st century (Montiel et al., 2020; Soundararajan et al., 2021; Su et al., 2016). Organisational learning is essential for growth (Feeney, 2022; Fisher & Kotha, 2016) and for alignment with the core values of the organisation (Li et al., 2022; Obeidat et al., 2020; Olejniczak & Lukasik, 2016).

Additionally, learning organisations continuously create knowledge necessary for organisational survival, growth, improvement, and stability (Abbas & Sagsan, 2019; Salama, 2017). Su et al. (2016)have confirmed the strategic importance of knowledge creation in an organisation but have also argued that knowledge becomes obsolete quickly. Cunliffe & Scaratti (2017) have highlighted the importance of socially helpful knowledge, where researchers and practitioners interact to convert theoretical knowledge into practice (Abbas & Sagsan, 2019). Therefore, organisations that embark on continuous learning can retain their competitive advantage (Feeney, 2022; Takacs et al., 2022). Knowledge created within the organisation results in process improvements, services, products, strategies, and improved stakeholder relationships (Abbas, 2019; Cunliffe & Scaratti, 2017; Salama, 2017). Organisations evolve with time (Cop et al., 2020; Fisher & Kotha, 2016), and knowledge management remains a critical strategic resource in modern knowledge-based economies (Adomako et al., 2022; Bridoux & Stoelhorts, 2016) to ensure competitive advantage (Tatoglu et al., 2020;).

2.9 Globalisation

Globalisation has removed international boundaries(Abbas & Sagsan, 2019; Galbreath, 2019) by drawing people of all nations together through the network of communication technologies, expanding sales and production beyond natural borders (Agarwal & Qouyatahi, 2017; Eger et al., 2019). Growing globalisation, technological changes(Galbreath, 2019), and organisational complexity have brought a lot of challenges to today's business that has to embark on innovation(Wang et al., 2021) and renewal to achieve sustainable competitive advantage and to survive in the long run (Boone et al., 2019; Soundararajan, 2021). The global village is influencing organisations to compete for customers, posing high expectations for performance, quality, and cost (Agarwal & Qouyatahi, 2017; Abbas & Sagsan, 2019). Therefore, businesses must constantly innovate to access markets and sources of knowledge (Boone et al., 2019; Shahzad et al., 2021) in the global space. Whether local or international, the business environment has become complex and uncertain (Galbreath, 2019). As a result, for the business to survive, it has to anticipate the change and take appropriate actions for positioning (Angelis, 2021; Wathe et al., 2019). Globalisation has intensified the complexity by causing business firms to market and manage abroad (Agarwal& Qouyatahi, 2017; Li et al., 2019; Wagner, 2019) in a culturally diverse space (Boone et al., 2019).

The deployment of resources and reconfiguration of business systems to maximize opportunities (Ivory & Brooks, 2018; Soundararajan, 2021) is essential for the 21st-century business. Strategic leadership, corporate entrepreneurship (CE) initiatives, and subsequent innovation performance(Wang et al., 2021) are vital to align the business with the global demands to address the business challenges associated with environmental uncertainty and frequent technological change(Boone et al., 2019; Galbreath, 2019, Adomako et al., 2022). Strategic agility is necessary to deal with global complexity through innovation and continuous strategy development (Etse et al., 2022; Ivory & Brooks, 2018). Organisations are changing to align with the global challenge, which

requires contemporary organisations with flat structures to meet the information-intensive, rapidly changing, competitive world (Karmowska et al., 2017). However, the diversity of cultures and tacit knowledge because of internationalization (Galbreath, 2019) is an advantage for organisations to pool expertise to boost human and social capital to increase innovation (Boone et al., 2019; He et al., 2020; Wang et al., 2021). Cultural diversity programs are essential for creating an understanding of the various cultures for better communication because productive capabilities of individuals, such as knowledge, skills, and experience, may differ from one country to the other based on the variables countries use to determine the human capital (Agarwal & Qouyatahi, 2017; Barthold & Bloom, 2020).

The SD agenda is a global challenge that provokes research in management and international business (Doh et al., 2017; Van Tulder et al., 2021; Mio et al., 2020). Challenges posed by industrial emissions and discharges, such as climate change, global warming, pollution, and environmental degradation (Ciliberto et al., 2021; Goworek et al, 2018; Villamil et al., 2021) affect the global society. Therefore, adaptation by businesses to the worldwide agenda is a competitive advantage (Horak et al., 2018; Soundararajan, 2021). Therefore, companies require the right set of skills to enable growth & survival as well as manage cultural diversity (Agarwal & Qouyatahi, 2017; Nadeem & Kayani, 2019). Akhtar et al. (2018) have posited that competencies can improve environmental practices, resulting in the organisation's sustainable reputation and specialized resources such as green innovations (Borland et al., 2019; Shahzad et al., 2021). Borland (2009) has identified globalisation as a possible route for incorporating sustainability into the business strategy.The work of Borland (2009) complemented the work of Stead & Stead (2008), who advocated for the SSM approach (Rubio – Mozos et al., 2020; Takacs et al., 2022) for the business. Actions conducted in one part of the world may affect society and the physical environment in another part of the world (Goworek, 2018; Li et al., 2019).

The primary reason for establishing the Environmental Protection Agency (EPA) in the 20th century was to protect the environment from gross industrial pollution based on the 'polluter pays principle' intending to enforce compliance on the business to environmental and regulatory legislation (Goworek et al., 2018). After adopting agenda 21 on sustainable development, the GRI and the UN-Global Compact introduced to guide businesses in reporting environmental compliance complimented the efforts of the EPA. Studies have revealed that the guidelines provided by the GRI and UN-Global compact are not mandatory (van Zanten & van Tulder, 2018), therefore a commitment by businesses to environmental objectives is not firm and lacks some transparency (Borgstedt et al., 2017). The studies revealed that the current global resource consumption level is very high; causing some resource over-consumption that overshoots the planet's capacity to regenerate itself (Beerannavar, 2020).

Voluntary environmental management (VEM) goes beyond the scope of governmental regulations. As a result, businesses may take advantage to improve their management efforts by proactively identifying the non-regulated environmental aspects of organisational practices; to determine which environmental factors are essential for the organisation and decide how the organisation should address these ecological aspects (Tatoglu et al., 2019; Wang & Mao, 2020). EPA has put a challenge to businesses to go 'beyond compliance' in support of eco-innovations (Borland et al., 2019) as a way of ensuring that all companies meet and maintain their legal and regulatory compliance minimum requirements and simultaneously support the game-changing innovation by those regulated businesses(Gowerek et al., 2018).

2.9.1 Regulation & Governance

No global law that regulates the implementation of SD initiatives by various countries (van Zanten & van Tulder, 2018). The SDGs guides the performance of the SD agenda as a global policy (Dobrovolska, 2018; Mio et al., 2020; van Tulder et al., 2021) that encourages good practice to protect

the planet and the people. There are several initiatives introduced at the global level to guide the reporting of sustainability performance by the business (Tatoglu et al., 2020; Rosati & Faria, 2019). These are the GRI, UN- Global Compact (Borgstedt et al., Eang, 2019; 2017; Rao & Jha, 2019), PRI and the environment, social and governance risk (ESG) (Mees & Smith, 2019, Jia et al., 2021). All these intend to bring consistency and comparability in reporting sustainability performance by the businesses. Cross-country differences in legal systems and national governance affect the rate at which SD initiatives are up taken at the national level (Liu et al., 2021). The SD agenda is a voluntary agreement between the UN member states that focuses on regulated businesses by adopting practical steps that improve their sustainability beyond cost saving. Companies may view voluntary agreements as an additional regulatory and financial burden on the already regulated industry expected to deliver business success (Tatoglu et al., 2020). However, even though the businesses are operating at the national level, they often cause global impacts. Therefore, it is important for companies to incorporate the big picture thinking into their business actions and practices (Goworek et al., 2018).

Pollution from industrialized areas affects nature, and the less developed regions may feel the impacts (Wang et al., 2021). Borland (2009) has argued that polluting activities, such as heavy manufacturing and commodity processing, relocate to emerging market economies. The greening of the developed world is at the expense of the physical environments of the developing countries, which do not have the resources to combat pollution (Jamali et al., 2017). Scholars of sustainable development and the social responsibilities of business have suggested that companies should integrate environmental, social, and governance concerns into their day-to-day strategic decision-making for the benefit of the wider society (Frynas et al., 2017, Takacs et al., 2022). Firms in emerging markets (EMs) often lack incentives to comply with environmental rules due to weak governmental capacity for regulation or intense lobbying and a lack of political will to enforce environmental laws (Totaglu

et al., 2020). The other challenge in implementing the sustainable development agenda is the change of attitudes by the business toward the new sustainability practices, technologies, and business models. Adopting more sustainable practices, technologies, and business models may be motivated by distinct factors, such as pressure from external and internal stakeholders (Adomako et al., 2022; competitive opportunities and threats (Soundararajan, 2021), as well as compliance with regulations.

2.9.2 International Business

Sustainability strategies can be identified as process – driven (pollution prevention) and market- driven (product stewardship), providing firms with cost advantages through improved environmental efficiency (Chan et al., 2020; Obeidat et al., 2020) and competitive advantage by ecologically differentiating products from competitors in the market place(Walsh & Dodds, 2017; Tollin & Christensen, 2019). The flattening of natural borders due to globalisation (Agarwal & Qouyatahi, 2017; Abbas & Sagsan, 2019; Galbreath, 2019) facilitates international business and FDI flows (Doh et al., 2017; Li et al., 2019). Therefore tackling pollution problems at the source (Chan et al., 2020) in manufacturing industries and implementing strategies that address product stewardship is a positive change for the business (Horak et al., 2018). These acts would also contribute to the achievement of the SDGs (Mio et al., 2020; Stafford – Smith et al., 2017; van Tulder et al., 2021). The global value chain has to be greened to avoid the negative impacts that may be transferred globally (Della Santa Navarrete et al., Verbeke, 2020). For example, sustainable marketing (Tollin & Christenson, 2019) is more than just making products 'green' or 'environmentally friendly'. Sustainable marketing requires a complete change of mind set to transform the traditional anthropocentric concept of marketing to incorporate sustainability by presenting new models that gauge the environmental impact of marketing (Goworek et al., 2018).

Studies identified a gap in scholarship for IB and strategic management (Doh et al., 2017;

Akhtar et al., 2018). Doh et al. (2017) have pointed out the importance of research in IB to tackle the grand challenges to contribute more directly to solving real problems in the global economy. IB research would facilitate new ways of building knowledge and relationships and enabling new ways of creating and delivering value to global customers (Nambisan et al., 2019). Doh et al. (2017) have posited the essential and emerging phenomena that IB can explain: (a) explaining and providing theoretical insights into the rise of MNEs from emerging economies; (b) exploring the growth, causes and consequences of offshoring and the disaggregation of global value chains; and (c) understanding how MNEs respond to more significant pressures for social responsibility and sustainability in their global operations. Many factors affect the global economy such as cultural diversity, geographies, national legislation etc. (Wang et al., 2021; Goworek et al, 2018).

The study has revealed the need for a better understanding of the micro-foundations of crucial issues in strategic management, such as strategic implementation, firm-level heterogeneity, and the contribution of human resources to value co-creation, routines, and capabilities (Akhtar et al., 2018). The environmental competitive conditions in the global business demand firms to pursue growth through innovation and creativity for long-term sustainability. Such a strategy requires a consistent and continuous reliance on creative behaviour across all levels within the organisation (Wang et al., 2021). Goworek et al. (2018) have demonstrated the importance of operating locally with the global picture in mind. Hence, the strategic positioning of the company for a worldwide competitive approach requires an SSM approach (Takacs et al., 2022). Literature has revealed that environmental sustainability has primarily neglected the interaction of top management with the implementation of sustainability initiatives (Akhtar et al., 2018). Leadership role (Etse et al., 2022; Obeidat et al., 2020) is very crucial to ensure the integration of sustainability issues into the business to benefit the global economy.

Deployment of strategies that address pollution both at source and in the global value chain(Chan et al., 2020; Doh et al., 2017) across borders is an improvement of strategic management to adapt the business to the complexities of the external environment(Ivory & Brooks, 2018; Soundararajan, 2021). Consumer products that were produced by organisations that have put in place some product–stewardship strategies are more appealing to the international markets (Ihemezie et al., 2018), thus being market differential and hence a competitive advantage (Borland et al., 2016; Su et al., 2016). Green products contribute to ecological protection, and consumer demand drives businesses to produce more eco-friendly products, thus reducing the harmful effects of consumption on the environment (Ihemezie et al., 2018). Khoiriyha and Toro (2018) have also supported green products as more appealing to consumers and increasing the willingness to pay.

2.9.3 Challenges and Opportunities

Globalisation is the interconnection of societies, economies, and the environment worldwide (Majidi, 2017; Dhopte & Sinha, 2016). Globalisation causes the emergence of global markets, influencing consumers and affecting the environment (Vendrell – Herrero et al., 2016), resulting in global challenges (Doh et al., 2017; Mio et al., 2020). Because it expands over different societies (Majidi, 2017), the consumer markets are influenced by other cultural diversities (Boone et al., 2019), and the environmental impacts may even go beyond the borders of a nation where the goods are to be used. Therefore businesses at the local level need to strategically focus on foreign markets (Della Santa Navarrete et al., 2020; Vendrell – Herrero et al., 2016), hence the need for constant innovation and renewal for sustainable competitive advantage and survival (Boone et al., 2019, Wang et al., 2021).

Furthermore, globalisation puts pressure on the human resources that need to cope with the

diversity of consumers across the globe (Agarwal & Qouyatahi, 2017; Barthold & Bloom, 2020; Boone et al., 2019; Majidi, 2017). Strategic leadership competencies are required to break through the barriers of culture and diversity of skills (Boone et al., 2019).However, human resource skills are a challenge for developing countries (Akhtar et al., 2018; George et al., 2016). Migration of human resources skills from less developed to developing countries worsens the situation, benefiting large companies in those countries (Majidi, 2017). This puts pressure on the small companies in less developed countries that would need to position themselves for international competitiveness (Vendrell – Herrero et al., 2016).

No law governs globalisation (Liu et al., 2021), and the global agenda was agreed upon by the UN member states by consensus (Tatoglu et al., 2019). As a result, it is not legally binding to the member states. GRI and the UN Global Compact developed some guidelines to help businesses in sustainability reporting (Borgstedt et al., 2017). Global certification, such as the ISO 14001(Wang & Mao 2020) series, is voluntary, and so are other initiatives, such as industry codes such as Responsible Care in the chemical sector and a plethora of individual corporate environmental practices (Tatoglu et al., 2019). Lack of international law to govern business practices is a challenge since different countries have their legal frameworks. The regulations at the country level are enforceable at the global level (Goworek, 2018).

2.10 Summary

Business uptake of the SD principles has been slow (Clementino & Perkins, 2020) since the adoption of agenda 21 on SD in 1992(Dobrovolska, 2018, Mio et al., 2020). Elkington suggested the TBL performance framework (Ciliberto et al., 2021) for the business to balance the three dimensions of SD. The balance of SD regulations is challenging due to competing priorities (Carmine & De Marchi, 2022). Therefore responsible management (Phillips, 2019) and leadership (Jaen et al., 2020)

is required to balance the contradictions in the SD pillars to achieve sustainability. Facilitation of the inclusion of the SD principles in the DNA of the business (Wang & Mao, 2020) requires relevant management and leadership competencies (Montiel et al., 2020). The 17 universal SDGs (Tatoglu et al., 2020) currently guides the SD theory practice, which includes national strategies, and policy development. The achievement of these SDGs requires the participation of all the stakeholders (Wang et al., 2021). These include the government, the private sector, and the civil society (Li et al., 2020). Therefore, adopting the SSM framework (Rubio – Mozos et al., 2020) is critical to ensure the business positioning for competitive advantage (Soundararajan, 2021; Takacs et al., 2022).

CHAPTER 3: RESEARCH METHODOLOGY

The purpose of the qualitative case study was to explore the integration of the SD principles in business practices for the trade effluent-generating industries. The study area was Francistown region in Botswana in Southern Africa. The common believe is that the industry's focus is more towards profit making and dividends, paying little attention to environmental protection and social development. Keeping a focus on the financial gains and not balancing with ecological protection and the protection of the social welfare of the people may affect the businesses in the long run (Harrison & Felps, 2018; Martinez et al., 2016) due to pollution caused by trade effluents (Atuanya et al., 2018; Bhatia et al., 2017). Strategic Integration of the SD principles in the industry's business practices (Ahammad et al., 2021; Chan et al., 2022) encourages the setting of green goals and targets (Shahzad, 2021; Wang & Mao, 2020). The qualitative case study is a positive response to the global challenge of SD (Alexus & Furusten, 2020; Doh et al., 2017; Tesfaye & Fougere, 2021).

The chosen industries for this study have consistently failed to produce trade effluent quality that complies with the Botswana wastewater discharge standard (BOS 93) for over 20 years, which is a pollution threat. Engineering and Scientific interventions employed to curb the problem included pre-treatment of the trade effluents before discharge into the main sewer line. These have not yielded positive results, prompting a different approach to solving this problem. Aggressive chemicals that affect wastewater treatment at the end of the pipe characterize effluents released from these industries. Previous studies have revealed that trade effluents from the manufacturing industries are the primary sources of water pollution (Ata & Tore, 2019; Bhatia et al., 2017; Peng et al., 2017). Failure by the industry to comply with the national standards on pollution prevention violates the aspirations of the agenda 2030 on SD (Alexus & Furusten, 2020; Tesfaye &Fougere, 2021).

3.1 Research Philosophy

Saunders et al. (2009) has described the research onion philosophy as a guide for selecting the most suitable approach to a research inquiry (Melnikovas, 2018). Research philosophy is the development of knowledge and the nature of that knowledge. The researcher's view of the world controls the choice of the research philosophy. Two major ways that influence the research philosophy are ontology and epistemology (Lizardo et al., 2020; Saunders et al., 2009). Ontology considers the assumptions the researcher has to consider in answering the research questions. Epistemology is concerned with acceptable knowledge in the field of study, while ontology is concerned with the nature of reality (Saunders et al., 2019). Both ontology and epistemology influence how a researcher thinks about the research process (Saunders et al., 2009). Another philosophy that guides the research process is axiology that places importance on values throughout the research process (Martin & Lembo, 2020; Saunders et al., 2019). The qualitative case study applied the research onion philosophy to unearth the causes to the non-compliances of the trade effluent-generating industries to wastewater national discharge standards. The research onion model (Melnikovas, 2018) guided the systematic approach of selecting the study's appropriate philosophy, research methodology, and research design.

The study adopted the pragmatism philosophy to solve pollution problems caused by the trade effluent-generating industries. The research started with a pollution problem caused by trade effluents, and the research study aimed to resolve the issue to improve policy and practice. The other philosophical positions are the interpretivism philosophy, which focuses more on the people's behaviour (Saunders et al., 2019). Data sources for the research study was people and document reviews. Hence the, interpretivism was not the best assumption. The positivist assumption may give generalizable results that are scientific and objective. Still, it has a limitation in exploring a phenomenon to offer complex and rich organisational realities (Saunders et al., 2019). Pragmatism assumption focuses on the research problem, the research question and the practical outcome

(Saunders et al., 2019). The research in pragmatism has largely varied subjectivity and objectivity. The study ruled out critical realism, which focuses on what we see and experience, and postmodernism, which focuses on the role of language, and power relations (Saunders et al., 2019).

3.2 Qualitative Research Approach

The study employed an inductively reasoning approach to explore the theory of SD in trade effluent-generating industries. Semi-structured interviews in three selected trade effluent-generating industries generated data on the investigation of SD practice. The exploration of the SD theory provided new insights into the practice of SD to solve pollution problems caused by these industries. The other alternative reasoning approaches in a research inquiry are deductive and abductive. Variables bind the deductive reasoning approach and focuses on testing an existing theory by testing the set hypothesis. The adductive reasoning approach combines the inductive and deductive reasoning approach. Abductive reasoning causes the researcher to move from theory to data or data to theory combining the inductive and the deductive reasoning approach (Saunders et al., 2016). In this study, the focus was to explore the SD theory to gain more insights regarding its application at the industry level, which is in line with the inductive approach reasoning. Inductive approach reasoning works with qualitative data, and it uses a variety of data collection methods to establish the different views in a phenomenon (Suanders et al., 2016).

The basis for the choice of methodology to conduct this study was the inductive approach reasoning. The research study adopted a multi-method qualitative approach (Saunders et al., 2016). Data was collected using semi-structured interviews and document reviews. Other methodological choices available for consideration were the mono-method qualitative, mono-method quantitative, multi-method quantitative, mixed-method simple and mixed-method complex (Suanders et al., 2016; Saunders et al., 2009). The fact that SD is a broad theory that keeps on evolving and SSM that was

derived from the SD theory is relatively new, and the extent of existing knowledge on the theory of SSM was found limited. Considering the philosophical underpinning adopted for this study, the multi-method qualitative approach was preferred ruling out the quantitative and mixed research approaches.

Three central qualitative research questions guided the multi-method qualitative study. These questions are RQ1. How are the Sustainable Development (SD) pillars of economic growth, environmental protection, and social development embedded into the business practices in trade effluent-generating industries at various levels of management? RQ1 was divided into three parts, which are: RQ1.1. How is economic growth embedded into business practices in trade effluent-generating industries at various levels of management? RQ1.2. How is environmental protection imbedded into business practices in trade effluent-generating industries at various levels of management? RQ1.3. How is social development imbedded into business practices in trade effluent-generating industries at various levels of management? RQ2. What challenges do the trade effluent-generating industries face when balancing financial gains with environmental protection and social development? RQ3. How does the integration of sustainable development principles into the industry's strategy benefit the trade effluent-generating industry?

The qualitative research approach was the most suitable for this study to answer the research questions. Creswell (2016, p.2) has described a qualitative research approach as a systematic inquiry to answer questions to solve an existing problem. A qualitative research approach involves exploring and understanding a phenomenon through emerging queries, and procedures, data collection in standard settings, inductive data analysis, and building from particulars to general themes (Creswell, 2014, p. 295). Marshall & Rossman (2016, p. 6) have also confirmed that a qualitative research approach is exploratory. The flexibility of this research approach enables the involvement of the

subjects in the research process (George, Kruger & Tennant, 2012, Kalu & Bwalya, 2017). Unlike the qualitative research approach, the quantitative research approach is deductive, testing objective theories within set variables and not allowing the subjects' interactions (Creswell, 2014, p.32). The quantitative research approach is limited in the study of social behaviour interactions (Creswell, 2016, p.5). The newest research approach, the mixed research approach, combines the qualitative and quantitative research approaches (Creswell, 2016, p.3).

The study was exploratory, investigating the application and understanding of the SD principles by the trade effluent-generating industries in the Francistown Region in Botswana. The inquiry was through semi-structured interviews conducted in a natural setting, which is not possible with the quantitative research approach (Creswell, 2016, p.6; Marshall & Rossman, 2016, p.100). The quantitative research approach uses surveys and experiments for data collection (Creswell, 2014, p.201), which are fixed and do not allow the interaction with the subject (Creswell, 2016, p. 12). The involvement of the subject allows probing for more information by the researcher (Merriam & Tisdell, 2015, p.122), which was necessary for this research study to explore the application and the understanding of the SD principles by the employees in the chosen industries. The study involved employees selected from the three respective industries working at various management levels. A quantitative research approach does not allow interactions with the research participants (Kalu & Bwalya, 2017, Creswell, 2016, p.13). Hence probing for more information is not possible. The social behaviour interactions within an organisation are the basis for organisational culture and organisational change (Su, Peng & Xie, 2016, Pedersen, Gwozdz & Hvass, 2018). The qualitative research approach was the best choice for this study to learn the behaviours of the employees towards the SD principles.

3.3 Qualitative Research Designs

Marshall and Rossman (2016, p.260) suggested five qualitative designs called qualitative

strategies(Saunders et al., 2016) for data collection in a qualitative research approach. These are narrative research, phenomenology, grounded theory, ethnography, and case study. The study aimed to explore the integration of SD principles in business practices at all management levels in a natural setting. A qualitative case study design was the most appropriate research strategy for this study. According to scholarship, a qualitative case study design (Alase, 2017; Ridder, 2017; Willig, 2008, p.75) provides an opportunity to learn the management setups in the respective chosen industries to identify areas of improvement for pollution prevention at source. Marshall and Rossman (2016, p.19) have supported a qualitative case study as appropriate for studying a natural setting. Their position was supported by Goodman (2011, p.15), who posited that a case study provides an intense examination of an organisation to establish work practices over a period. This study investigated sustainable business practices observed in the organisation's natural management setting to gain a deeper understanding of a theory (Willig, 2008, p. 75). The ability of a qualitative case study to provide in-depth learning was posited by Marshall & Rossman (2016, p. 19) who confirmed that case studies favour intensity and depth, and are the most suitable for exploring the interaction between case and context". Another strength of a qualitative case study design is its flexibility to accommodate multiple perspectives, data collection tools, and interpretive strategies (Marshall & Rossman, 2016, p. 19).

Open-ended interview research questions guided the semi-structured interviews, and probing extracted more information (Fusch & Ness, 2015, Merriam & Tisdell, 2015, p. 122; Turner, 2010) on the business practices in the chosen industries. Document reviews complemented the semi-structured interviews to strengthen data collected by open –ended interviews (Merriam & Grennier, 2019, p.5; Basias & Pollalis, 2018). Qualitative data collected from the semi-structured interviews and the document reviews was triangulated for rigor (Mashall & Rossman, 2016, p.46). The use of multiple

data collection methods in a case study is an advantage (Creswell, 2016, p.2016; Marshall and Rossman 2016) to increase the study's credibility and validity (Basias & Pollalis, 2018; Fusch & Ness, 2018). Other qualitative research designs were not chosen for this study: the grounded theory, phenomenology, ethnography, and narrative (Creswell, 2016, p.263; Marshall & Rossman, 2016, p.17; Merriam & Grennier, 2019, p.7).

The grounded theory approach was unsuitable for this study because the theory of SD and SSM already exists. Marshall & Rossman (2016, p.18) have described the grounded theory as an approach that is used to generate new theories based on the settings of interest and interactions. The grounded theory mainly focus on building theory grounded on the data (Merriam & Tisdell, 2015, p.32). Grounded theory research emphasizes on a new discovery of a theory based on a particular real-life situation (Avgousti, 2013; Merriam & Grennier, 2019, p.9), but this study is based on an existing theory. The grounded theory works backward, from the data to the development of a new theory (Creswell, 2016, p.263 Marshall & Rossman, 2016, p.18) which was not the case for this study. The theory of SD from which the SSM theory (Borland et al., 2016; Stead & Stead, 2015) was derived is an existing theory that has not been extensively studied. The purpose of this study was to explore or investigate the integrative approach of the SD principles into business practices by the trade effluent-generating industries in the Francistown region in Botswana, to improve policy and practice.

The research study also found phenomenology not suitable because it requires a lived experience (Merriam & Grennier, 2019, p.8; Willig, 2008, p.75). Data collection in phenomenology is from individuals who have experience with the phenomenon and can share their life experiences with others (Alase, 2017). The purpose of this study was to have an in-depth understanding of a phenomenon by studying the business practices and the behaviours of the employees in the chosen

organisations in a standard setting. Phenomenology analyses what the research participants have in common (Creswell, 2016, p.268; Marshall & Rossman, 2016, p. 17). The research design focuses on life as lived, and does not give an in-depth analysis of issues (Creswell, 2016, p.267), which is possible in a case study (Goodman, 2011, p.15). Phenomenology is the essence or the structure of an experience where direct experiences build complex meanings (Merriam & Grenier, 2019,p.8). The basis for this is the exploration of a broad phenomenon to understand the theory for application.

The focus on ethnography is on the community and culture, emphasizing the actions and interactions within the group (Marshall & Ross, 2016, p.17). Therefore, ethnography was also not an ideal research design for this study. Anthropologists developed ethnography research design to study human society and culture, where the definition of culture is beliefs, values, and attitudes that shape the behaviour of a particular group of people and has the potential to pass from generation to generation (Merriam & Grenier, 2019, p.8 – 9). The scope of this study included studying organisational cultures, influenced by organisational values as opposed to ethnicity. However, organisational culture may be influenced by the culture of the community where the business entity exists, but that was not the focus of the study. Previous studies identified culture as a significant contextual stimulus for the business, but there is little known about its role in shaping corporate sustainability practices (Miska et al., 2018). There is a possibility to conduct further studies on the influence of culture on the uptake of SD principles, of which ethnography (Creswell, 2016, p.264; Creswell, 2014, p.42) may be considered as a research design.

The qualitative narrative design (Creswell, 2014, p.42) based on the lives of individuals anchored on their storytelling (Merriam & Grenier, 2019, p. 12) was also unsuitable for this study. Merriam and Grenier (2019, p.12) described the qualitative narrative design as an enquiry that uses

stories as data, the experiences in people's lives is the source of data. Narratives and storytelling provide personal qualitative data (Goodman, 2011, p.16), which are necessary for sharing experiences in relationships, journeys, successes, and failures (Merriam & Grenier, 2019, p.8). The scope of this study was beyond personal life experiences. However, the study included organisational behaviours influenced by organisational values. Organisational values influence the response of organisations to the SD integrative approach (Obeidat et al., 2020; Roscoe et al., 2019; Stead & Stead, 2015). The study of individual behaviours within the organisation may contribute to the organisational culture, and this is an opportunity for further studies. On the other hand, studies identified corporate culture as an essential driver for corporate performance and innovation success (Wang et al., 2021). Individual storytelling on work experiences by the employees in the selected industries and the results obtained on an organisational setup from this study could be complementary. However, this study was limited to business practices and employee attitudes towards adopting SD principles in their lines of duty.

The results obtained from this qualitative case study are not inferable (Marshall & Rossman, 2016, p.85) to other industries. However, the results are generalizable for the studied cases (Creswell, 2016, p.267). Repetition or replication of the qualitative case study is possible in another setting (Creswell, 2014, p.253). Studies have revealed that a case study is not generalizable, but it can be replicated in other management setups (Marshall & Rossman, 2016, p.85; Ridder, 2017), the integration of SD principles in business practices and corporate strategy can be investigated similarly in other industries with different management setups in Botswana and in other countries. In other words, results obtained in this qualitative case study are transferable to other contexts (Korstjens & Moser, 2018; Nowell et al., 2017). Marshall & Rossman (2016, p.85) have posited that no qualitative study is generalizable in a probabilistic way, but the study's results may be transferable. Generalization

in case studies is possible where new cases are studied, but this requires comprehensive documentation to enable replication (Creswell, 2014, p.253).

3.4 Case Study Area

The qualitative case study area was the City of Francistown in Botswana in Southern Africa. The study focused on trade effluent-generating industries that are suspects of pollution due to industrial effluent discharge. These industrial effluents contain aggressive chemicals that cause heavy pollution loads into the sewer line and at the central wastewater treatment facilities. The industries chosen for the study are in the City of Francistown and Tonota Village in the Northern part of the country (Figure 1). The City of Francistown has a population size of 117,228, and Tonota village has a population size of 24,913(Statistics Botswana, 2020). The industry in this area benefits the community with employment creation, directly affecting the social pillar contributing to poverty reduction. Routine national pollution monitoring has indicated non-compliance by the trade effluent-generating industries when compared to the Botswana wastewater discharge standards (Fig 2). Pollution threatens the social welfare of the community that resides in the proximity of these industries. The significant trade effluent-generating industries in the City of Francistown and the neighbouring Tonota village chosen for this qualitative case study fall in the category of manufacturing industries.

Manufacturing industries in Botswana contribute 4% of the national GDP. The country is currently emphasizing the diversification of the industrial base away from the mineral sector, which is the major contributor to the country's GDP, to grow the economy through manufacturing industries. The manufacturing sector in Botswana covers a broad spectrum of industries, including food and beverages, textile and garments, jewellery making, metal & metal products, etc. City of Francistown is the second largest city in Botswana and the most highly industrialized city in the country. Manufacturing industries use large volumes of water discharged directly into the sewer line, causing

pollution (Wallace et al., 2017) due to the varied strengths of the industrial effluent discharges (Ata & Tore, 2019).

3.5 Population of the Research Study

Five (5) major manufacturing industries in the Francistown region in Botswana identified for this study are a pollution threat due to trade effluent discharge. In this qualitative case study, three industries chosen were two textile industries and a brewery. The selected industries have a total workforce of approximately seven hundred and thirty–seven (737) people. This is an indication that many people in the region have their livelihoods dependant on these industries. These are not the only manufacturing industries in the Francistown region in Botswana, but the primary trade effluent-generating industries in the area that have been monitored consistently for compliance in accordance with the wastewater discharge standard(BOS 93) for over twenty(20) years. The pollution monitoring results obtained by the Department of Water and Sanitation have indicated non-compliance to discharge standards over the years, triggering the need for a sustainable solution to pollution prevention.

The chosen industries are the major exporters of finished goods to the international markets in the region. This then calls for attention to be paid to the global value chain (Verbeke, 2020) to ensure green innovations (Akhtar et al., 2018; Wang & Mao, 2020), preventing the transfer of pollution from one nation to the other. Goworek et al. (2018) has supported eco-innovation to avoid the transfer of adverse effects from local activities to the global space. This qualitative case study is viewed as a positive response to the worldwide challenge of SD (Doh et al., 2017; Pless et al., 2021), where local companies are urged to subscribe to green practices for the benefit of the global community. Globalisation has removed boundaries between nations (Dhopte & Sinha, 2016; Agarwal & Qouyatahi, 2017), making international markets to be accessed with ease (Boone et al., 2019; Vendrell – Herrero

et al., 2016) and at the same time this may transfer problems to the consumers in the receiving nations. The qualitative case study aims to protect the planet, reduce poverty and ensure economic prosperity for all (Dobrovolska, 2018; Wysokinska, 2017), which is a global challenge.

3.6 Sample of the Research Study

The qualitative case study used semi-structured interviews through open-ended questions for data collection. The choice of research participants was from among the employees of the selected industries. The research participants were to establish an understanding of the SD theory and demonstrate the uptake of SD principles in the organisation's business practices. Marshall and Rossman (2016, p.111) indicated that purposive and theoretical sampling are built into qualitative designs. Purposive sampling (Marshall & Rossman, 2016, p.260;Creswell, 2016, p.109; Ridder, 2017) was adopted for this qualitative case study to ensure that the right people are selected to answer the interview questions. Creswell (2016, p.109) posited that purposive sampling is selecting participants who can help inform the central phenomenon. This is different from quantitative research, where the chosen individuals are a representative of the population. Marshall & Rossman (2016, p.114) have also revealed that qualitative research designs can be employed in a range of options, even when there is only one sample or case. This is in contrary to the traditional and experimental research designs that assume that a large sample, encompassing a wide range of variables, will reveal findings that are representative of a truth.

Thirty (30) people selected from the three chosen industries participated in the study. The chosen research participants were at the different management levels established enough to inform the research questions. Previous studies have emphasized the importance of weaving the SD principles at various management levels for effectiveness (Baumgartner & Rauter, 2016; Baumgartner,2014). Therefore, the decision on the choice of participants considered their level of

responsibility, experience, and position in the company. Creswell (2016, p.109) has indicated that decision-making in purposive sampling takes into consideration three components: deciding who to select as participants or sites, the number of individuals or sites to choose, and the suitable sampling strategy. The selection criteria used chose ten (10) people from each industry to answer the interview questions based on their level of responsibility to investigate the integration of the SD principles within the organisation. Studies have revealed a lack of understanding by the businesses to intersect the sustainability strategy with the business strategy (Borland et al., 2016) for the achievement of the TBL performance (Walsh & Dodds,2017).

The selection criteria ensured that research participants selected were at various management levels. Business models developed by Stead and Stead (2019) and Baugartmer (2014) have both indicated the importance of weaving the SD principles at all management levels being corporate, competitive, and operational for effectiveness. The industry guided the selection of the research participants for the interview based on their management set-ups to ensure that the people chosen were able to answer the research questions (Creswell, 2016, p.109). The respective industries selected a representative to assist in the selection of the research participants as well as being the liaison person, linking the researcher with the research participants.

Three cases studied explored the integration of the SD principles in the business practices for the selected industries in a natural setting (Creswell, 2014, p.234, Creswell, 2016, p. 265). The study applied the same set of interview questions to collect textual data from the three chosen industries via a speaker telephone. Face-to-face interviews were not possible due to the movement restrictions and the social distancing imposed by the COVID-19 pandemic protocols. The results obtained from these cases can only be generalized for the selected industries (Marshall & Rossman, 2016, p.85) and

not for all the manufacturing industries in Botswana. Different organisations have different management settings (Creswell, 2014, p.43). Therefore, this study can be replicated (Creswell, 2016, p.253; Marshall & Rossman, 2016, p.85; Ridder, 2017) in other industries in Botswana and in other countries throughout the world.

3.7 Reliability & Validity

Reliability ensures consistency in data collection throughout the study by providing authenticity, trustworthiness, and credibility (Creswell, 2016, p.252; Marshall & Rossman, 2016, p.46). Creswell (2014, p. 251) posited that reliability indicates that the researcher's approach is consistent across different research participants and projects. This qualitative case study adopted the use of interview protocols (Creswell, 2016, p.292) to conduct the interviews in the selected industries for consistency. Standardized open-ended interview questions were used to guide the discussions and to remove some bias from the researcher (Turner, 2010; Creswell, 2016, p.100). Creswell (2016, p.104) has also suggested checklists to ensure consistency in data collection. Checklists were also used in this qualitative case study, to track the research participants and ensure contact with all the selected employees regarding the arrangements for the interviews. Checking and corrective action was taken in all the data transcripts accordingly (Creswell, 2014, p.251).

Validity is the trueness and accuracy of the research findings (Marshall & Rossman, 2016, p.46; Creswell, 2014, p.251). Creswell (2016, p. 190) has described validity in qualitative research as the accuracy of the results based on the assessment of the researcher, the views of the participants, the readers, and the study's reviewers. The known validity lenses that scholars developed as an evaluation criterion are credibility, dependability, confirmability, and transferability of the research study (Creswell, 2016, p.191) to ascertain both the internal and the external validity (Creswell, 2014, p.251; Marshall & Rossman, 2016, p.46). Scholars have suggested validity strategies such as

triangulation of data sources, debriefing of research participants, sharing of the polished data for confirmation, and the reflexivity of the researcher to eliminate bias (Creswell, 2014, p.252; Creswell, 2016, p.34). The employment of these validity procedures was to strengthen the credibility and the authenticity of the study findings (Creswell, 2014, p.251).

Three cases were analysed using the same interview questions, and data obtained from the three instances integrated into one set (Creswell, 2016, p.266). Documents and reports obtained from the industry, the government, and the websites augmented the qualitative interviews. Creswell (2016, p.113) and Marshall & Rossman (2016, p.141) confirmed document review as a qualitative data collection tool. The use of multiple data sources is also a validity strategy (Marshall & Rossman, 2016, p.46; Creswell, 2014, p.252). The research participants confirmed the polished interview scripts shared with them (Creswell, 2014, p.252). The researcher disclosed the history with the industries to remove the researcher bias. Ethical considerations were upheld throughout the research study (Creswell, 2016, p.48; Creswell, 2014, p.132; Rossman, 2016, p.50). Bracketing personal feelings and judgments, keeping a journal throughout the interview process, as well as in data analysis to record the researcher's thoughts managed the researcher's bias.

3.8 Instrumentation of Research Tools

The primary instrument for data collection and analysis in a qualitative research approach is the researcher (Creswell, 2014, p.237; Fusch et al., 2018; Marshall & Rossman, 2016, p.117). A qualitative research approach depends on the ability of the researcher to collect and analyse data (Gupta & Awasthy, 2015; Merrian & Grenier, 2019). This makes the qualitative research approach to be different from a quantitative research approach that uses standardized instruments, measures, and methods in data collection and analysis (Basias & Pollalis, 2018; Goodman 2011; Huang et al.,2018), The research approach requires the researcher to interact with the subjects during the research process

(Goodman, 2011; Merrian & Tisdell,2015). The role of the researcher is crucial in a qualitative research approach to maintain the rigor and credibility of the study (Basias & Pollalis,2018; Creswell, 2016, p.192), thus requiring the identification of assumptions, biases, personal values, perspectives and sensitivities to reduce impediments and ensure a positive impact to the study (Creswell, 2014,p.237; Marshall & Rossman, 2016, p.117).

The researcher, as an instrument of data collection & analysis (Fusch et al., 2018; Tracy, 2013, p.5) has a great responsibility to administer the qualitative data collection tools with competence to ensure the credibility and reliability of the study (Creswell, 2014, p.237; Palaganas et al., 2017). There are four primary methods that are used for data collection in qualitative research and these are participating in the setting, observing directly,interviewing in-depth, and analysing documents and culture (Marshall & Rossman, 2016, p.141). Qualitative data collection is through observations, interviews including individual interviews and focused group interviews, document analysis, and audio/visual materials (Creswell, 2016, p.113; Creswell, 2014, p.241). All these research tools require the involvement of the researcher for implementation. The researcher's ability and competence is required to extract data from the research participants with no bias (Alase, 2017; Hammarberg et al., 2016).

3.9 Role of the Researcher

Integrity, openness, and honesty guided performance in the role of the researcher for this qualitative case study to enable the study's credibility (Fusch & Ness, 2015; Palaganas et al., 2017). Twenty – eight (28) out of thirty (30) research participants selected from the three (3) major trade effluent-generating industries in the Francistown Region in Botswana participated in a semi-structured in-depth interview via a speaker telephone. I as the researcher and the data collection instrument (Fusch et al., 2018) for this study, revealed to the participants my position in the Botswana Government

as a Water Pollution Technical Advisor and my experience of over 10 years on wastewater management in trade effluent-generating industries. The revelation was to create transparency and openness in the research process (Palagamas et al., 2017). The researcher explained explicitly the purpose of the interview to all the research participants (Merriam & Tisdell, 2015, p.127; Turner, 2010) to enable their confidence in participation.

Marshall & Rossman (2016, p.117) stressed on the importance of revealing the researcher's positionality, by articulating how personal background may influence a qualitative study. Furthermore, reflecting on the researcher's biases and experiences was further expressed by Creswell (2016, p.222), who mentioned that qualitative researchers bring their personalities and backgrounds to the study, which may influence the research outcome. Therefore, it is important for the researcher to constantly discern and monitor their inner voices during the research process (Alase, 2017, Fusch & Ness, 2015; Merriam & Grennier, 2019, p.6).

The researcher's honesty and openness during the research process removes the study's bias (Creswell, 2014, p.252; Palaganas et al., 2017). A standard interview protocol was used with all the research participants for consistence (Basias & Pollalis, 2018). During the interview process, the conversation was recorded verbatim using a voice recorder and handwritten notes recorded in a notebook as backup. There was no evaluation done during the interview. Research participants shared their perspectives and experiences without judgment. The researcher maintained a neutral position throughout the interview, and probes were used to generate more information from the research participants. Marshall & Rossman (2016, p.117) have highlighted the importance of monitoring the researcher's voices, assumptions, and sensitivities during the research process to remove biases.

Monitoring of own thoughts, feelings, and perspectives during a qualitative interview as an interviewer was also discussed by Creswell (2016, p.223), who pointed out the importance of withholding any form of negative or positive evaluation during the interview. The purpose of the interview is for the researcher to learn from the research participants without bringing in their perspectives (Creswell, 2016; Creswell, 2014; Gupta & Awasthyl, 2015). Taking notes during the telephone interviews was a way of keeping focused on listening to what the research participants were saying, hence enhancing active listening skills. The note taking helped the researcher understanding and focus to enable probing questions for clarifications.

The role of a researcher in a qualitative research process and the ability to handle different research participants and textual data was demanding and overwhelming. The researcher being an instrument of data collection and analysis (Alase, 2017; Fusch et al., 2018) means interacting with research participants from diverse characteristics depending on their backgrounds and beliefs. The researcher does not just have to identify their biases, values reflexively, and unique experiences (Creswell, 2014), but rather also to develop the competence to handle the research process (Gupta & Awasthyl, 2015; Marshall & Rossman, 2016). The development of the skill to conduct qualitative interviews was through reading books on qualitative research methods that guided on the role of the researcher (Creswell, 2014, p.256; Creswell, 2016, p. 223; Marshall & Rossman, 2016).

Apart from gaining knowledge on qualitative research through reading relevant books, I have some experience in conducting semi-structured interviews through open-ended questions that I gained in my workplace by participating in interview panels on competence-based interviews (CBI's) for promotions, recruitment, and development of staff. I had an opportunity to train as an assessor for assessment centres and development centres in Botswana and in the Republic of South Africa. The

knowledge I gained from books on qualitative research and my exposure to CBI as an assessor has greatly enhanced my skill in handling the telephone interviews for this study with integrity. The experience with the CBI enabled me the capacity to handle different research participants and the massive textual data generated during the interviews.

The credibility, transferability, confirmability, and dependability of a qualitative study rely on the performance of the researcher (Marshall & Rossman, 2016, p.119) as the data collection and analysing instrument (Creswell, 2014, p.256; Merriam & Greinier, 2019, p.5). In this study, all the research participants answered the same interview questions and the use of interview protocols ensured uniformity (Merriam & Tisdell, 2015, p.124). Data was collected through the semi-structured interviews and document reviews and then integrated. Triangulating data collected from multiple sources is a validity strategy (Marshall & Rossman, 2016. p.46) that ensures rigor and the usefulness of a qualitative study (Almaki, 2016; Basias & Pollalis, 2018; Ridder, 2017).

The researcher shared the data collected and its interpretations with the research participants for confirmation and validation. Both Yin (2011, p.79) and Creswell (2014, p.252) have confirmed that member checking ensures credibility in qualitative data collection. During the interview, constant monitoring of thoughts and bracketing of feelings reduced bias. Creswell (2016, p.223) and Goodman (2011, p.9) have both posited that bracketing of own emotions during a qualitative interview removes the researcher's bias from the study. Merriam & Grenier (2019, p.6) have also supported that instead of eliminating the thoughts, it is better to monitor them and see how they shape the data collection and the interpretation of the results.

3.10 Instrumentation

Semi structured interviews were conducted using open-ended questions, with 28 out of 30

research participants selected from the major trade effluent-generating industries in Francistown region in Botswana through a speaker phone. For the first 20 participants, the verbatim conversations were recorded using a Samsung S5 cell phone audio recorder, with handwritten notes collected as a backup. The handwritten notes filled the data gaps on the data collected through the audio transcriptions. For the interviews conducted with the last 8 out of 10 participants, voices were recorded using a digital voice recorder, and notes were taken directly into a word document. 2 out of 10 participants in the last industry to be interviewed declined the interview. There are different ways of conducting qualitative research interviews, which are telephone/cell phone interviews, face-to-face interviews, focused group interviews, and online interviews such as e-mail, Skype, tweets, adobe connect, and social media (Creswell, 2014, p.240; Creswell, 2016, p.127; Merriam & Grennier, 2019, p.14). The speaker telephone interview became the most appropriate for this study due to the geographic location of the research participants in the Francistown region, which is 500 kilometres from Gaborone City.

All the interviews were conducted using a speaker telephone for uniformity. Telephone interviews enable voice–to–voice actual time interviews with pauses in conversation, just like face-to-face interviews, even though in telephone interviews, the researcher may miss the verbal cues (Merram & Tisdell, 2015, Creswell, 2016, p.127). Creswell (2016, p. 127) has pointed out that using video conferencing such as Skype, face time and google+ hangouts is an advantage because they enable verbal cues. Poor internet connectivity in the country and only a few people having access to video conferencing facilities hindered the use of these facilities in this study. Face-to-face interviews and the focused group in-person interviews were not appropriate for this study due to the COVID 19 protocols that restricted activities across the country, and advocated for social distancing and wearing facemasks in public to curb the spread.

Using a laptop, the researcher obtained documents from the industry via email, and some of the information about the selected industries was researched through the internet. Document analysis was identified as a qualitative research tool (Creswell, 2014, p.242; Marshall & Rossman, 2016, p.103), which can be used together with interviews to diversify the data collected (Goodman, 2011, p.13; Yin, 2011, p.81; Ridder, 2017). The advantage of documents is that they already exist and there is no influence caused by the researcher's presence or the cooperation of the research participants in interviews and observations (Merriam & Grenier, 2019, p.15). Creswell (2014, p.252) and Marshall &Rossman (2016, p.46) have also highlighted the importance of multiple data sources in qualitative research as an internal validity procedure to enhance the study's credibility.

3.11 Study Procedures

University Research Ethics Committee (UREC) through the decision number: **O17036G16352** granted the study approval prior to data collection. This study was categorised as a low risk and anticipated to cause no harm to the research participants. The selection of the research participants was among the employees in the chosen trade effluent-generating industries. All the research participants were above the age of 25, and there were no participants under the age of 18 involved in the study. According to Creswell (2016, p.49), a study is categorized as having more than minimal risk to participants when people under 18 are involved as research participants. Participation in the study was voluntarily, and there were no incentives provided for participating in the study.

Official letters were written to the three selected major trade effluent-generating industries in Francistown requesting permission to conduct interviews for a study in their organisations. Gatekeeper letters that explained in detail the study's purpose and the industry's expectation on the study coupled these letters. The three industries responded by accepting the call and providing a

contact person who then assisted in arranging the telephone interviews by selecting people at different management levels per their management set-ups. The contact persons compiled the names, positions, and contacts of the eligible people for the interview and sent them via WhatsApp. A log sheet was then developed, and appointments made with the chosen people to request a suitable time to call them and conduct an interview via a speaker telephone.

Twenty –eight (28) out of thirty (30) research participants selected from the three (3) major trade effluent-generating industries in Francistown and Tonota participated in telephone interviews from the 24th of June to the 31st of July 2020. Two of the research participants from one of the industries declined to participate in the study. The researcher sent the informed consent form and the interview questions to the interviewees before the interviews to solicit their approval. An interview protocol was developed to guide the interviews (Creswell, 2016, p.129; Marshall & Rossman, 2016, p.119). The developed interview protocol guided all the telephone interviews. Merrriam & Tisdell(2015, p.124) have also confirmed the importance of interview protocols in guiding interviews, providing the experience and the confidence in conducting open-ended questions interviews.

The contact persons in the respective industries selected the participants for the interviews based on the participants' positions in the organisation and the perceived ability to answer the interview questions. The method of sampling used for this study is purposive sampling where the research participants were selected based on their perceived ability to assist in answering the interview questions (Yin, 2011, p.88). This differs from quantitative research methods of sampling, where a sample is chosen because it is a representative of a population; purposive sampling is based on the decision that the selected people can inform the central phenomenon (Creswell, 2016, p.109; Marshall & Rossman, 2016, p.111).

The purpose of the study was to investigate the integration of the SD principles at various management levels in the selected industries, therefore people chosen to participate in the study were those holding management and supervisory roles, including those managing the SD initiatives in the respective organisations. Research participants selected were at the positions of Managing Director, Technical Director, Finance Director, Quality Manager, Health & Safety Practitioner, functional manager, and supervisor. The positions selected were at top management, middle management, and line management (Table 1). The perception was that people at these positions hold different views on the theory of SD based on their experiences and levels of operation. Yin (2011, p. 88) has also supported that purposive sampling is a deliberate choice of participants because there are perceived to inform the study topic.

The researcher discussed confidentiality of the study with the research participants before the interview, and a prior informed consent form signed to get permission from the research participant. The researcher explained to the research participants that their participation in the research was voluntary and that there were free to withdraw from the research at any point. Two of the research participants withdrew from the study. Verbatim data was collected from the participants via a speaker telephone using voice recordings through a Samsung S5 cell phone voice recorder and handwritten notes in designated notebooks as a backup for the first 20 participants. Transcribed audio recordings and handwritten notes were integrated into a typed word document. For the last 8 participants, voices were recorded using a digital voice recorder, and the interview notes were typed directly on a word document. All the audio from the Samsung S5 and the digital voice recorder were transferred to an official government laptop that is protected by a password and will be deleted immediately after the

completion of the study. The notebooks are stored safely for five (5) years and then destroyed. All the data collected will only be used for this study and will not be shared with third parties.

Documents obtained from the respective industries will be kept confidential and not shared with third parties to protect the industry's intellectual property rights (IPR). Mishandling of these documents and exposure to third parties is a violation of trust within the industry, which may result in some breaches of the IPR. Protection of the IPR increases innovations and ownership in businesses (Fang et al., 2016; Peng et al., 2017).Adhering to IPR rules also shows respect and sensitivity to the research participants' rights (Gupta & Awasthyl, 2015). All the data in the audio and notebooks were consolidated for each interviewee to form interview scripts for the study. These scripts were then given identification codes as DBARP1 to DBARP28 for anonymity to protect the research participants. Identification of the final interview scripts used codes without bearing the names of the organisation or the research participant.

3.12 Ethical Assurances

Ethical considerations are vital in research to ensure the research participants' protection and the study's credibility (Creswell, 2016, p.48; Creswell, 2014, p.132; Marshall & Rossman, 2016, p.50). Expectations in an ethical research is to respect and inform research participants, minimize risk to the participants and contribute to the knowledge base (Buchanan, 2013; Creswell, 2016, p.49). Ethical issues are inevitable in any research, especially when dealing with human participants (Creswell, 2016, p.48). Research ethics are generally framed around the four principles derived from medical research: autonomy, beneficence, no maleficence, and justice (Doody & Noona, 2016; Hedgecoe, 2016; Marshall & Rossman, 2016, p.51; Buchanan, 2013). In this study, ethical issues were highly regarded to respect the participants' privacy. Request for permission from the industry to conduct the research

was through the gatekeepers who guided on the selection of the research participants in adherence to their company policies. All the research participants received the prior informed consent forms via the gatekeepers before the interviews. At the beginning of each interview, the researcher requested permission from the participant to conduct the interview using a speaker telephone, audio recording, and note taking. All 28 out of 30-research participants yielded to the use of a speaker telephone, audio recording of the interviews and note taking with no objections.

An interview protocol guided the interview (Merriam & Tisdell, 2015, p.124), enabling time to explain the purpose of the interview at the beginning. The researcher assured confidentiality and respect for privacy to all the research participants at the beginning of all the interviews. The study respected the company policies for the three trade effluent-generating industries during the research process. Management of the respective entities granted permission to access the employees in the three selected trade effluent-generating industries. These included negotiations on how and when to access the employees without disturbing the activities of the business. Where there were issues of misunderstanding regarding the purpose of the study, time was allowed to resolve the issues by providing more information to support the purpose of the study and re-assure the participant's confidentiality in the study process and respect for IPR. Qualitative research requires sensitivity to the rights of the participants by respecting their views (Marshall & Rossman, 2016, p.51) and making sure that the study does not cause any harm to the participants (Dookdy & Noonan, 2016; Gupta & Awasthyl, 2015; Hedgecoe, 2016).

There were no vulnerable people involved in the study. The research study allowed male and female participants to participate without any form of prejudice. The male to female ratio for the selected participants was 9:5(Table 1). The study participants were employees from the trade effluent-

generating industries in the Francistown region in Botswana, which has a diverse work culture. The language used to prepare interview questions and to conduct the interviews was English, with a few explanations in Setswana during the interview to cause participants understanding. There was patience during the explanations to allow the interviewees to understand the questions fully. There were no incentives provided for participating in the study. However, the results of the study were shared with the respective industries.

University Research Ethics Committee (UREC) approved the study in June 2020(Appendix A) to avoid conducting research that is unethical (Creswell, 2016, p.48). The approval by UREC has allowed ethical considerations throughout the research process. This includes the trustworthiness of the research study (Marshall & Rossman, 2016, p.43). The Botswana Government also granted a research permit to the study as per the national guidelines on research ethics in Botswana (Appendix B). The National Policy on Research, Science, and Technology & Innovation (RSTI) in Botswana guided the study to ensure ethical considerations during the research process. The Policy advocates for safety, quality, confidentiality, and the obligation to observe and employ ethical considerations in research activities. The RSTI policy, Botswana legislation on Companies and Intellectual Property Authority Act of 2011 and the Industrial Property Act of 2010 guided the protection of intellectual property rights. The Botswana legislation on protecting intellectual property rights is in line with the World Intellectual Property Organisation (WIPO) requirements.

Ethical issues in research and trustworthiness go together to ensure the research study's quality (Creswell, 2016; p.48; Saunders et al., 2009). The results obtained from a research study have to be accurate and trusted for use by other researchers (Yin, 2011, p.19). Ethical considerations guard against insensitivity in data collection and reporting (Saunders et al., 2009, p.184). Therefore,

trustworthiness is a good research practice that ensures the research study's transferability, confirmability, dependability and credibility (Creswell, 2016, p.191; Hadi & Closs, 2016; Marshall & Rossman, 2016, p.46).

3.13 Data Collection

Semi-structured interviews conducted using a speaker telephone was the source of primary data, while document reviews were the source of secondary data. Data collected from the semi-structured interviews and document reviews was in the form of words. Qualitative research generates data in words (Creswell, 2014, p.232, Gupta & Awasthy, 2015) making the research approach to differ from the quantitative research. Quantitative research generates numerical data through instruments (Creswell, 2016, p.13; Goodman, 2011, p.8; Yin, 2009, 103). In this qualitative case study, the researcher was the instrument of data collection using ten (10) open-ended interview questions (Appendix C) designed to answer the research questions.

3.13.1 Primary Data Collection

Twenty – eight (28) out of thirty (30) research participants took part in a semi-structured interview through a speaker telephone. Ten open-ended interview questions (Appendix C) guided the semi-structured interviews. The development of these interview questions was in line with the qualitative research questions for this study. The researcher generated an interview transcript for each interview participant and labelled them with a code for confidentiality and anonymity. Demographic data on the research participants were also collected (Table 2). An interview protocol guided all the interviews for consistency (Yin, 2011, p.102). As the instrument of data collection, the researcher was able to adapt to the data collection process to ensure maximum information collection to answer the central phenomenon (Creswell, 2016, p.262). The use of probes during the interview helped to generate more information from the research participants. The advantage of qualitative research is that adjustments can be made during data collection to allow for more information generation through

probing questions (Merriam & Tisdell, 2015, p.122), unlike in quantitative research where the instrument of data collection is independent of the researcher (Creswell, 2014, p.234). Constant bracketing of the researcher's feelings and perceptions during data collection removed the bias from the study.

Table 1

Research Participants' Demographics

Participant Code	Gender	Age Group	Title	Education Level	Management Level
DBARP 1	Male	35 - 40	Technical Director	Degree	Top
DBARP2	Male	60 - 65	Account Administrator	Diploma	Middle
DBARP3	Male	60 - 65	Managing Director	Masters	Top
DBARP4	Female	25 - 30	Treatment Plant Manager	Degree	Middle
DBARP5	Male	60 - 65	Dye Officer	Degree	Line Manager
DBARP6	Female	40 - 45	Merchandiser	Cambridge O 'level	Line Manager
DBARP7	Male	50 - 55	Knitting Section Manager	Diploma	Middle
DBARP8	Male	45 - 50	Factory Manager	Cambridge O' level	Middle
DBARP 9	Female	30 - 35	Safety & HR officer	Cambridge O 'level	Middle
DBARP10	Female	40 - 45	Shop Assistant	Junior Certificate	Line Manager
DBARP11	Female	50 - 55	Accounts Officer	Diploma	Line Manager
DBARP12	Female	30 - 35	Merchandiser	Cambridge O 'level	Line Manager
DBARP13	Female	40 - 45	Wages Clerk	Certificate	Line Manager
DBARP14	Male	35 - 40	Weaving Manager	Diploma	Middle
DBARP15	Male	65 - 70	Quality Technical Officer	Matric	Top
DBARP16	Female	25 - 30	Quality Assurance Manager	Degree	Top
DBARP17	Female	45 - 50	Assistant Planning Manager	Cambridge O 'level	Middle
DBARP18	Male	40 - 45	Dispatch Manager	Certificate	Middle
DBARP19	Male	40 - 45	Director Works	Diploma	Top
DBARP20	Male	40 - 42	Finance Director	Degree	Top
DBARP21	Male	30 - 35	Safety Controller	Diploma	Middle
DBARP22	Male	45 - 50	Plant Manager	Degree	Top
DBARP23	Male	35 - 40	Stock Controller	Certificate	Line Manager
DBARP24	Male	25 -30	Brewing Supervisor	Diploma	Line Manager
DBARP25	Male	25 -30	Brewing Operator	Junior Certificate	Line Manager
DBARP26	Male	25-30	Effluent Operator	Cambridge O' Level	Line Manager
DBARP27	Male	25-30	Brewing Assistant	Cambridge O' Level	Line Manager
DBARP28	Female	25-30	Planning Performance Manager	Degree	Top

3.13.2 Secondary Data Collection

The researcher collected documents from the selected trade effluent-generating industries, and these documents included policy statements, annual reports, and process maps. The use of internet enabled access to international, continental, and national policy documents that are in the public domain. These documents included the government policies on environmental management and pollution prevention, the Botswana national vision 2036, agenda 21 and agenda 2030 of sustainable development, and the Botswana SDG road map to 2023(Table 2). Documents collected for review included government reports on past pollution inspections in the selected industries. These government reports contained the voices and views of the regulatory authorities regarding pollution caused by trade effluent-generating industries. Document review as a source of secondary data collection augmented the primary data collected through semi-structured interviews.

Using multiple data sources in a qualitative research approach is essential for ensuring the study's validity (Creswell, 2016, p.34). This process of converging data from different data sources is called triangulation, and it is used to ensure rigor and trustworthiness in a qualitative research study (Creswell, 2016, p.191, Marshall & Rossman, 2016, p.47). Research participants at different levels of management answered the same research questions to ensure truth, authenticity, and credibility in the data collected. After the interviews, the researcher produced an interview script by merging the written notes and the transcribed audios. After merging, the data collected through audios and handwritten notes, the scripts were sent back to the respective research participants for information validation. Both Creswell (2014, p.252) and Marshall & Rossman (2016, p. 34) have emphasized on the use of validity strategies such as triangulation, member checking, auditing, and extensive time in the field to enhance the truth and objectivity of a qualitative study.

Table 2

Documents Collected for Review

Documents obtained from the Public Domain	Documents Obtained from the Industry
Botswana SDG's Road Map 2017 – 2023	Alcohol Policy
Government of Botswana and United Nations Sustainable Development Framework(UNSDF) 2017 -2021	Control of Smoking Policy
Economic Diversification: The case of Botswana – Lesego Sekwati	Environmental Policy
BIDPA working Paper 34, January 2013: Key issues in the Textile and clothing sector in Botswana (Masedi Motswapong & Roman Grynberg).	NOSA integrated Five Star System Executive Report for Kgalagadi Breweries (pty)Ltd Opaque Francistown
The Botswana Textile cluster, 2007(Desiree Allen, Serah Makka, Kunal Merchant, Jumaane Tafawa).	Occupational Health & Safety Policy
Botswana Textile and Apparel Sub Sector Study, 2004(Andy Salm, William Grant, John Haycock, Kirsten Kennedy & Musa Rubin).	Risk Management Policy
Botswana Trade Policy Framework	Designated Food Area Policy
Botswana OECD report – African Economic outlook 2005 – 2006	Forklift Policy
Botswana National Accounts Statistics Report 2016	Hand Tool Policy
The Textile and Clothing Sector in Botswana: Challenges and Opportunities(Masedi Motswapong and Roman Grynberg)	Hazardous Task Policy
Bank of Botswana Annual Report, 2017	Risk Management Manual
Botswana Outlook Revised to Stable on Stabilising Diamond Prices Leading to Better Performance; Ratings Affirmed, 2017	Indemnity Form
Vision 2050: The new Agenda for Business – WBCSD	Personal Protective Equipment Policy

Documents obtained from the Public Domain	Documents Obtained from the Industry
A road map for vision 2050: An implementation guide for executing the vision 2050 report, 2011	SAB Miller , Health & Safety Manual
Integrating the SDG's into Corporate Reporting: A Practical Guide, UN Global Compact	Environmental and Occupational Health & Safety Policy
Botswana Vision 2036: Achieving Prosperity for All.	Corporate Standards
SDG Compass: The guide for business action on the SDG's UN Global Compact	ABIBEV Annual Report 2019.
UN – Water, 2030 Strategy	
Agenda 2063: The Africa We Want.	
UN: Transforming Our World: The 2030 Agenda for Sustainable Development	

13.14 Data Analysis

Data collected through the transcripts and the document reviews was hand coded for analysis. The process of data coding was laborious and time-consuming. Creswell (2014, p. 245) has also alluded to the intensive nature of hand coding and suggested using qualitative data analysis software programs like Maxgda, Atlas.ti and QSR NVivo. However, using qualitative data analysis software programs requires some skill and time to learn how to use effectively (Elliot, 2018; Saladana, 2016, p.28). Saunders et al.(2009, p.481) have also confirmed that computer-assisted qualitative data analysis software(CAQDAS) like N6^{TM} , and researchers do not widely use Hyper ResearchTM due to lack of accessibility.

The study did not use a computer data analysis program because it was not available,and the time of the study was already limited to enable learning how to apply the software program for

qualitative data analysis. Saladana (2016, p.29) has recommended manual data coding for beginners to gain cognitive skills and ownership of the work. Alternatively, during data analysis codes were assigned to the typed scripts on the computer by bracketing and using text highlight colour for easy labelling and identification of the data pieces. The same idea of bracketing and colour codes for the labelling and identification of data pieces was applied to data obtained from the document reviews.

The researcher used both the descriptive codes and emerging codes for data analysis. Marshall & Rossman (2016, p.219) have confirmed that both theory–generated codes and emerging codes can be used in qualitative data analysis. The descriptive codes were developed based on the qualitative research questions and the literature (Elliot, 2018; Saunders et al., 2009, p.489), while the emerging codes were based on the conversations with the research participants (Marshall & Rossman, 2016, p.219; Saladana, 2016, p.27). Coding is making sense of the collected data by deriving its meaning and assigning a label to the data (Creswell, 2016, p.153). During data analysis, the researcher paid attention to repeated statements by the research participants. That is what they stated as necessary, theory or concept, and any surprises. A journal was kept during data analysis to record own thoughts and views.

Level 1 of data coding generated many codes (Elliot, 2018; Saladana, 2016, p.25; Yin, 2011, p. 187), and groupings of similar codes generated categories (Saunders et al., 2009, p.492). Categories are higher-level codes derived from the terms emerging from the data, actual terms used by the research participants, or terms from the existing theory and literature (Elliot, 2018; Saunders et al., 2009, p. 493). Yin (2011, p.187) has termed this level 2 of coding as the higher conceptual level that enables similar and dissimilar groupings. This higher-level coding order is more interpretive and requires some degree of inference beyond the data (Elliot, 2018). The researcher pulled together similar

patterns by grouping similar codes to create more meaning from the data. The categories were further refined to ensure their distinction from one another to develop major themes to answer the research questions (Creswell, 2016, p. 154;Marshall & Rossman, 2016, p.224).

3.14.1 Cultural Interpretations

SD is a global policy that has to be actioned at national levels to advance the aspirations of the global agenda of 2030. Interview questions were prepared in English to answer the central qualitative research questions. During data collection, there were instances where the researcher explained the questions to the research participants in the local language (Setswana) for a better understanding. Translating from English to Setswana and Setswana to English again may have affected data collection. Transfer of meanings may have happened during the translation process between the languages (Pelzang & Hutchinson, 2018). The researcher did all the translations where needed, making sure that the meaning of the research was maintained. Marshall and Rossman (2016, p.211) have indicated that the researcher can manage cultural interpretations by maintaining an ethical stance on translating to retain the meaning of the research. Wutich et al. (2021) have demonstrated that sharing meanings across cultural contexts is a culturally sensitive decision a researcher makes to build rapport, positionality and reflexivity for navigation. However, Pelzang and Hutchinson (2018) have warned against the transfer of meanings during the process of translation between languages, and Wutich et al. (2021) confirmed the risk of mistranslation and misinterpretation.

Ho et al. (2019) posited that translators in qualitative research play a significant role in maintaining the meaning of the original data. In discharging translation in qualitative research, translators must be able to detect differences in the equivalence of meanings across languages. In this qualitative case study, the researcher handled translations from English to Setswana and from Setswana to English. There was minimal loss of sense anticipated in the translations because the

researcher, who is conversant in both languages, understood the research goal. Language conveys meaning sociocultural context mediates meaning (Ho et al., 2019). The translation process between languages has the potential to alter the research's meaning (Havlin, 2022; Pelzang & Hutchinson, 2018). Therefore, translators need to be particularly sensitive to the influence of social context in their expressions (Ho et al., 2019; Wutich, 2021). Wutich (2021) has expressed the importance of the researcher in producing meaningful translations that require careful translation and back–translation. Studies have indicated that the involvement of translators outside the research team poses ethical issues such as confidentiality and participants' exposure to potential harm (Ho et al., 2019; Pelzang & Hutchinson, 2018). Language differences between the research participants and the researcher can influence the research due to translations (Younas, 2021). There was no language difference between the researcher and the research participants in this qualitative research. The use of Setswana clarified issues and caused understanding to the research participants to enable them answer the research questions, which were prepared in English fully. The research meaning was maintained (Havlin, 2022) even in the back and forth translation in Setswana and English.

3.15 Trustworthiness of Data

Trustworthiness of data in qualitative studies refers to the credibility, dependability, confirmability, transferability, and authenticity of the research findings (Elo et al, 2014; Marshall & Rossman, 2016,p.46). The importance of trustworthiness in a qualitative research study is that it assures that the claims of the study can be trusted by providing the evidence that can be tested to ensure the rigor and the usefulness of a qualitative research (Creswell, 2016, p.292; Marshall & Rossman, 2016). Data trustworthiness considers both the internal and external validity and reliability to ensure quality (Rose & Johnson, 2020, Creswell, 2014, p.251, Hardi & Closs, 2016).

Studies have revealed that the generalizability issue in a qualitative study is complex, hence

the application of other criteria to assess quality (Hardi & Ross, 2016; Korstjens & Moser, 2018). Lincoln and Guba(Elo et al.,2014; Nowell et al., 2018) developed a criterion which have got a parallel relationship with those in the quantitative research comprising four criteria which are credibility with internal validity, dependability with reliability, transferability with external validity and confirmability with Objectivity(Creswell, 2016, p.252; Korstjens & Morse,2018). Studies have revealed that several criteria and definitions of trustworthiness exist, but the known standards are credibility, transferability, dependability and confirmability, as developed by Lincoln and Guba (Elo et al., 2014; Kortjens & Morse, 2018). The same criteria for trustworthiness developed by Lincoln & Guba (Elo et al., 2014; Nowell et al., 2018 were applied in this qualitative study to ensure the truth and authenticity on the research findings.

3.15.1 Credibility

The credibility of a qualitative research is the trueness and the accuracy of the research findings (Nowell et al., 2017). Credibility in qualitative research is an equivalence of the internal validity in a quantitative study and provides confidence regarding the truthfulness of the results (Korstjens & Moser, 2018). The credibility of a study can be assessed by prolonged engagement in the field, triangulation, persistent observations, peer review or debriefing, and member checking (Creswell, 2016, p.252; Korstjens & Moser, 2018; Marshall & Rossman, 2016, p.46). Data collection in this study was through semi-structured interviews using open-ended questions and through document reviews. Integration of data generated from the interviews and the document reviews increased accuracy. Triangulation is the integration of data sources in qualitative studies (Creswell, 2016, p.194; Marshall & Rossman, 2016, p. 46), this is a validity strategy that adds depth to data collection (Fusch et al., 2018; Korstjens & Moser, 2018).

The researcher bias can affect the credibility of a qualitative study (Palaganas et al., 2017).

Throughout the data collection and data analysis processes for this study, bracketing, of the researcher's thoughts and a journaling removed the bias. An outline on the role of the researcher in the study reveals the beliefs and the norms to remove the bias. Reflexivity removes the researcher's biases on the study that may be due to personal backgrounds, experiences and values (Creswell, 2016, p.222) to ensure transparency and quality in a qualitative research (Korstjens & Moser, 2018). Hand written notes during the semi-structured interviews through open-ended questions augmented data collected using the audio recordings. The researcher transcribed the audio voices and integrated with the handwritten notes before polishing the transcripts and sending to the participants for verification. Marshall & Rossman (2016, p.46) have confirmed that member checking is a validity strategy for increasing rigor and quality in a qualitative study. Rich, thick data were coded from the interview scripts and the document reviews, and codes were grouped into categories. The categories were further refined to develop themes to answer the research questions.

3.15.2 Transferability

Transferability is the degree to which the findings of a study can be transferred to other contexts or settings (Korstjens & Moser, 2018; Nowell et al., 2017). Unlike in a quantitative study where the results are generalizable (Marshall & Rossman, 2016, p. 43), the external validity of a qualitative research is defined by its transferability (Hadi & Closs, 2016; Nowell et al., 2017), meaning that the same study can be repeated in another setting. The research approach and design, data collection, data analysis, and a detailed description of themes provides the thick detailed descriptions. The detailed descriptions are easy to follow, enabling the study to be repeated by those who desire to apply the findings (Korstjens & Moser, 2018; Marshall & Rossman, 2016, p.46).

The qualitative case study design (Alase, 2017; Ridder, 2017; Willig, 2008) provides the opportunity for for replicating the study in another organisational setting. The study can only be

generalized for the organisations studied (Marshall & Rossman, 2016, p.85). Replication in other organisations with different management set-ups is transferability (Had & Closs, 2016; Korstjens & Moser, 2018; McInnes et al., 2017). The study can be replicated (Creswell, 2016, p.253; Marshall & Rossman, 2016, p.85; Ridder, 2017) in other industries in Botswana and other countries worldwide.

3.15.3 Dependability

Korstjens & Moser (2018) have described dependability as "the stability of findings over time. Dependability involves participants' evaluation of the findings, interpretation, and recommendations of the study such that all are supported by the data received from participants of the study". Dependability maintains an audit trail describing the project purpose, data collection methods, sample selection criteria, interpretations, and findings (McInnes et al., 2017; Nowell et al., 2017). The research process is documented in a systematicway and traceable, providing the readers the opportunity to examine the process (Korstjens & Moser, 2018; Nowell et al., 2017). Dependability has an element of consistency, which is in line with reliability (Elo et al, 2014; Korstjens & Moser, 2018). The study followed procedures and requested the necessary research approvals. The study obtained approval from the University Research Ethics Committee through decision number: O17036G1632 and a research permit by the Government of Botswana MOTE I/18/6VIII (49).

Both Nowell et al. (2017) and Korstjens & Moser (2018) emphasised on the importance of an audit trail as an essential measure of dependability in qualitative research trustworthiness. An audit trail that comprises a complete set of notes on decisions made during the research process, sampling, and research materials adopted, reflective thoughts, information about data management, and the emergence of the findings enable the auditor to study the transparency of the research path (Korstjens & Moser, 2018). In this study, interview protocols (Creswell, 2016, p.129; Marshall & Rossman, 2016, p.119) guided all the telephone interviews. The researcher produced interview transcripts for

all the 28 out of 30 research participants that took part in the study. Records management is an essential aspect of an audit trail (Korstjens & Moser, 2018). All the recorded data in the notebooks and in the audio recordings is kept safe for five years as evidence of the research study. The purpose of this study is well documented and articulated. The data analysis process is also well documented indicating all the iterative stages of analysis and the codes generated from the data. Keeping an audit trail confirms the reliability and the study's dependability (Hadi & Ross, 2016; Nowell et al., 2017; Hadi & Ross, 2016).

Reflexivity plays a significant part in the audit trail (Korstjens &Moser, 2018; Nowell et al., 2017) and the role of the researcher (Creswell, 2016, p.222; Marshall & Rossman, 2016; Palaganas et al., 2017). A journal was kept to record the researcher's thoughts, feelings, interests, insights, and biases during the data collection, analysis, and interpretation of the results. The researcher in a qualitative research has to keep a critical self–awareness account throughout the research process to manage own pre-conceived assumptions (Korstjens & Moser, 2018; Nowell et al., 2017).

3.15.4 Confirmability

Confirmability ensures the objectivity of the qualitative research results, by removing the researcher's bias (Mclnnes et al., 2017). Both dependability and conformability are assessed through an audit trail (Korstjens & Moser, 2018; Nowell et al., 2017), considering the researcher biases (Nowell et al., 2017). Confirmability demonstrates how the conclusions and the interpretations were reached, removing the researcher bias from the study (Mclnnes et al., 2017). Credibility, transferability, and dependability, once achieved, establish confirmability.

In this study, the researcher shared polished scripts from the semi-structured interviews with the research participants to confirm the information captured. The research participants confirmed

some interview scripts and approved with no additions, while in some scripts; the research participants provided additional information. Information collected through the document reviews was helpful in confirming the data collected from the semi-structured interviews. Data analysis moved from the data pieces to the generated codes, then the categories, and finally the developed themes for consistency. Recording of the data analysis stages, confirms the process's objectivity. The researcher shared the detailed description of themes with the respective industry for confirmation. Mclnnes et al. (2017) have posited that "Comfirmability is established when the data accurately reflects the information provided by the participants, making sure that the inquirer isn't imagining things. Sharing the study's results with the industry for confirmation is a way of building some objectivity into the study by benefitting from other people's opinions.

3.16 Summary

The research onion philosophy suggested by Saunders et al. (2019) guided the selection of the methodology suitable for this research inquiry. The ontological and epistemological stance (Melnikovas, 2018; Saunders et al., 2019) based on the application of the SD theory on trade effluent-generating industries for pollution prevention influenced the study. The study started with the problem of pollution caused by the trade effluent-generating industries, hence the pragmatism philosophy reasoning (Saunder et al., 2019). The area of study was the Francistown Region in Botswana in Southern Africa (Figure 1). Data collection was through qualitative semi-structured interviews using open – ended questions and document reviews. The researcher was the instrument of data collection and analysis; therefore, the research approach considered values throughout the research process giving the study an axiological stance (Saunders et al., 2019). The basis for the trustworthiness of the research study was on Lincoln and Guba's criteria of credibility, dependability, transferability, and confirmability (Creswell, 2016, p.252; Korstjens & Morse, 2018).

CHAPTER 4: RESEARCH FINDINGS

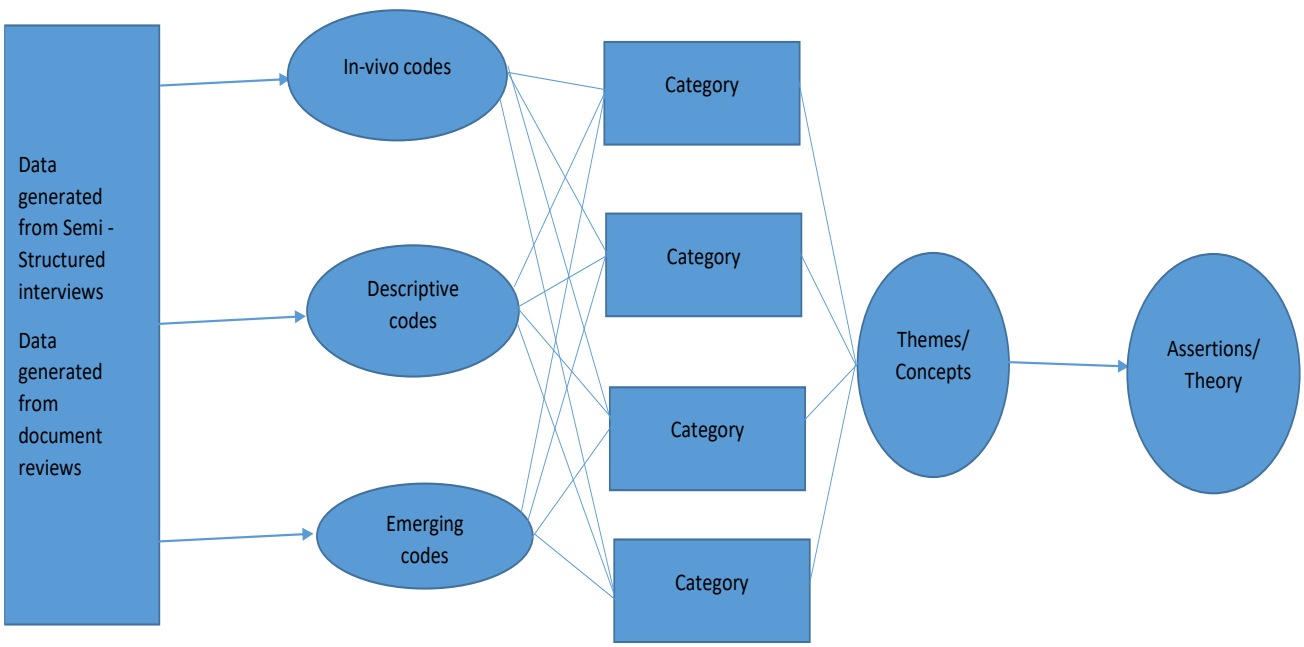
The research questions served as the guide for reporting the research findings. These research questions explored the practice of SD principles in trade effluent-generating industries to curb pollution at source. The study answered three central qualitative research questions where RQ 1 had three components that addressed the three pillars of SD. These research questions are; RQ1. How are the Sustainable Development (SD) pillars of economic growth, environmental protection, and social development embedded into the business practices in trade effluent-generating industries at various levels of management?, The sub-research questions derived from RQ 1 are; RQ 1.1 How is economic development embedded into business practices in trade effluent-generating industries at various levels of management?, RQ 1.2 How is environmental protection embedded into business practices in trade effluent-generating industries at various levels of management? , RQ 1.3 How is social development embedded into business practices in trade effluent-generating industries at various levels of management? The follow-up research questions were RQ2. What are the challenges faced by the trade effluent-generating industries when balancing financial gains with environmental protection and social development? and RQ3. How does integrating sustainable development principles into the industry's strategy benefit the trade effluent-generating industry? The semi-structured interviews using ten (10) open – ended interview questions (Appendix C) answered these research questions. The research study integrated textual data collected from the semi-structured interviews with textual data collected from document reviews.

A hand data coding process was done in three levels(Fig 5) where level 1 produced many data codes, level 2 grouped similar codes and categorized them into eighteen(18) categories which are; (a) Environmental Protection; (b) Social Development; (c) Economic Prosperity; (d) Organisational Learning; (e) Performance Management System; (f) Leading People;(g) Quality Management System;(h) Environmental Management System;(i) Occupational Health and Safety; (j) Stakeholder Relationships;(k) Innovation; (l) Communication of SD Initiatives;(m) Knowledge of SD;(n)

Globalisation & International Markets. The eighteen (18) categories were further compressed into six (6) significant categories at level 3 of data coding. These were found to be; (a) Triple Bottom Line(TBL); (b) Leadership & Governance; (c) Systems & Processes; (d) Stakeholder Engagement & Innovation;(e) International Business; (f)Challenges &Opportunities. These six major categories derived from the data coding process were the adopted themes to formulate the assertions to answer the research questions.

Figure 5

Process of Data Coding



Note. Coding of textual data produced assertions that answered the research questions. Data from semi structured interviews and document reviews classified as in vivo, descriptive, and emerging codes. Codes grouped into categories that resulted into themes. Own Work.

4.1 Reporting of the Results

The interview scripts generated from the semi-structured interviews were hand-coded

(Creswell, 2014, p.245) to identify and label the data pieces. All the data collected through the interview scripts were coded using the line-by-line coding to increase the trustworthiness in the data collected (Saladana, 2016, p.24). Descriptive codes and the *in-vivo* codes (Marshall & Rossman, 2016, p.219) were used to identify the data pieces from the scripts. Literature review, emerging codes, and the research questions guided the development of these codes. Both Saladana (2016, p.27) and Marshall & Rossman (2016, p.219) have supported the use of descriptive codes and *in-vivo* codes in a qualitative analytic process. The research study used computer-shading colours to highlight the data pieces before labelling them with a descriptive code, an in-vivo code, or an emerging code. The documents obtained from the industry and the internet underwent the same exercise, with the data pieces being highlighted using computer shading colours and then labelled with the appropriate code either descriptive or emerging code(Figure 5).

The research study adopted the three cyclic stages to process the qualitative data (Elliot, 2018, Saladana, 2016, p.24). The first stage, level 1 data coding, generated 1049 codes from the interview scripts and 51 codes from the document reviews. Literature has revealed that level 1 data coding generates many codes (Yin, 2011, p.187, Saladana, 2016, p.25, Elliot, 2018). Data codes generated from level 1 data coding were collapsed by merging and grouping codes based on their similarities and dissimilarities (Yin, 2011, p.187, Saladana, 2016, p.24) and this second cycle of data processing was termed level 2 of data coding. Data codes were then categorised into groupings using descriptive codes that emerged from the interviews, the literature and the research questions (Elliot, 2018). The categories and the subcategories were further refined to develop major themes to answer the research questions (Creswell, p.154, Marshall & Rossman, 2016, p.224).

The interview questions, the name of the industry, and the identification code of the research

participant on the interview scripts helped to organize level 1 data codes. Document review generated a list of descriptive codes. Level 2 of data coding merged codes generated from the interview scripts and the document reviews. At this stage, an evaluation combined similar data codes to refine and focus the data coding process. The evaluation exercise grouped the data codes into categories and sub-categories. The basis for groupings was on the emerging themes from the data collected, the research questions, and the literature. The categories were refined into six major categories that formulated the assertions that answered the research questions. The generated themes (Tables 3-8) helped organise the research study results.

4.1.1 Theme 1: Triple Bottom Line (TBL)

RQ1: *How are the Sustainable Development (SD) pillars of economic growth, environmental protection, and social development imbedded into the business practices in trade effluent-generating industries at various levels of management?* The research question explored the application of the SD principles by the trade effluent-generating industries. This central research question generated three sub-research questions, where RQ1.1 explored the application of the economic prosperity pillar, RQ1.2 explored the application of the environmental protection pillar, and RQ1.3 explored the application of the social development pillar. The three pillars of environmental protection, social development, and economic prosperity guided grouping and categorizing the generated codes. Further grouping of codes under these three SD pillars formed the TBL theme (Table 3). The theme answered the central research question RQ1. The adoption of good environmental management practices such as zero waste, recycling of packaging material, long-term vision on renewable energy is an evidence of SD pillars applications. The results indicated an embrace of the three pillars of SD by the industry. Statements made by the interview participants, such as; "I care about my colleagues, and also make sure that what I use does not harm the environment" and "Our people are the biggest asset," are also an indication of the application of SD by the industry.

Documents reviews indicated some commitment to the long-term vision, goals, and objectives that are supportive of the SD principles by the industry. Codes generated under this theme such as pollution prevention at source, pre-treatment, climate change and water efficiency are an indication of sustainable environmental practices at industry level. Cost saving and budget monitoring mentioned under the economic prosperity category supports the economic pillar. Codes generated and are supporting the social development pillar are care of human resources, gender balance in the workplace, and prevention of water-borne diseases. Statements such as "We are clear that our business is not separate from society, it is one, and at the same time an employer, a customer, a supplier, and a taxpayer" indicates inclusivity and the simultaneous application of the SD pillars by the trade effluent-generating industry. The descriptive codes, the *in-vivo* codes, and the emerging codes listed below (Table 3) grouped under the TBL theme answer RQ 1 as well as the sub-research questions derived under RQ1.

The achievement of the TBL performance is through the balancing of the three pillars of SD: economic growth that contributes to profit making, environmental protection that contributes to the safety of the planet, and social development that contributes to the social welfare of the people. The results indicate that the trade effluent-generating industries do have initiatives in place intended to protecting the planet and the people. The results obtained through the semi-structured interviews and the document reviews could not clearly show the balance between the profits and the needs of the people and the planet. The industry does not understand how to balance the profits and the needs of the people and the planet. Statements such as "Balancing the 3Ps is tricky"; "I don't know how to balance the 3Ps" reflected on this challenge. The industry believes more on profit making for survival than in protecting the planet and the people. The research participant captured saying, "Focus on the

environment may cause loss of profit", reflects the sentiments on profit making in the statement. However, some people seem to embrace the balance of the SD pillars as reflected in the statements; "We plough back the profits to improve processes," "I don't chase profits, I care about my colleagues, and also make sure that what I use does not harm the environment," "Our people are the biggest asset."

Table 3

Codes Supporting Triple Bottom Line (TBL)

Category	Codes Generated at Level 2
Environmental Protection(Planet)	30 years commitment to pre-treatment, limited land resources, Pollution prevention at source, Water Efficiency, Climate Change, Management of Plastics, Good environmental management practices, long term vision on renewable energy, Office designated to SHE, Conservation of natural resources, Recycling of packaging material, Reduction of the carbon footprint, Zero Waste
Social Development(People)	Care of human resources, End Poverty, Company policy supporting staff welfare in place, Gender balance in the workplace, Wages equivalent to mandatory working hours, Terms & Conditions of employment, Compassion, Community service, Prevention of water-borne diseases, Corporate social responsibility, "We are clear that our business is not something that is separate from society, it is one, and at the same time an employer, a customer, a supplier and a taxpayer"., Respect for human rights, Contribution to reduction of HIV-AIDS, Valuing & Empowering employees.
Economic Prosperity(Profits)	Purchase of raw materials local & imported, Cost Saving, Budget Monitoring, No sales, Lack of payment by customers, Cost Control, Needfor profit making by shareholders & owners, Economic benefits due to re-use, Business prosperity

4.1.2 Theme 2: Leadership & Governance

RQ1 explored the integrative approach to the application of the SD principles for the trade effluent-generating industries. The intention of the question was to investigate the infusion of SD pillars into the strategic management process for the industries covering all the management levels. The expectation is that the adoption of the SD principles at all management levels shall influence sustainable business practices in the industry. The study found leadership and governance to be a catalyst for the integrative approach of SD principles into the business strategic management and operations. Categories that formulated the leadership and governance theme are organisational culture, organisational learning, performance management, and leading people (Table 4). Codes generated from the semi-structured interviews and document reviews resulted in these sub-themes.

The study has demonstrated the importance of organisational culture to facilitate the integration of SD principles into business practices. Corporate culture greatly influences leadership and governance because it influences organisational values, work ethics, and attitudes. The semi-structured interviews and the document reviews revealed that company policies are in place promoting the SD initiatives. According to the qualitative case study there are some transformations happening within the trade effluent-generating industry in line with the SD requirements such as the adoption of paperless work. Organisational values are essential for shaping the workers' behaviours towards the vision. During the study, the research participants demonstrated good values such as teamwork, transparency, unity, cooperation, and integrity. The interviews and document reviews defined proof of devotion to corporate governance, sustainability, and business ethics. Trade effluent-generating industries have not embraced the SD culture fully, as evidenced by the statement, “SD is the work of SHE.” This indicates fragmentation in the business functions revealing that the culture of SD has not reached all parts of the organisation.

The research participants indicated a commitment to learning and capacity development. This organisational learning provides the trade effluent-generating industries with the internal capability to integrate the SD initiatives into their practices. During the interviews, the research participants mentioned that the acquisition of knowledge by the employees is through formal and informal settings. The research study found that the brewery is implementing the Voyager Plant Optimization (VPO) for systems and process improvement, which requires knowledge exchange in its global companies. Internal capabilities to optimize business processes and integrate the SD principles into the business practices is lacking for the trade effluent-generating industry. Daily discussions about performance management, planned job observations (PJOs), and the use of performance-tracking tools like the dashboard are some of the ways used for performance management and monitoring. Research participants mentioned issues of staff motivation, and in some of the studied industries, defined job descriptions are in place.

The implementation of SD initiatives is low in the studied trade effluent-generating industries. However, in some cases, the company vision and mission statement indicated some long-term goals for the SD application. A statement such as “we dream big” is an evidence of visionary leadership. The interviews made it quite evident that there is need for improvement in the trade effluent-generating industries to influence people towards SD practices. These includes improvements in supervisory roles, organisational structures, and communication of goals throughout the whole organisation. One of the research participants indicated that he is handling a large group of people. However, there is some positive change in applying the SD principles by the trade effluent-generating industries.

Table 4

Codes Supporting Leadership & Governance

Category	Codes Generated at Level 2
Organisational Culture	Organisational values, Work ethics & Attitudes, Teamwork, Company policies on SD initiatives, Transformation from paper to data capture on computer, "SD is the work of SHE", Risk of indiscipline & negligence, "Employees are cooperative", "Transparency is the call of the day" Bad work relationships, Coaching staff & visitors, Patience with core workers, Change of behaviour & Character, Unity, Cooperation between Management & workers, Good company branding, commitment to corporate governance, sustainability & ethics written down as values, integrity.
Organisational Learning	Commitment to learning & development, Capacity to integrate SD into the organisational culture, Training on SD initiatives, Formal and continuous on the job training, Knowledge exchange on VPO, Development of organisational capabilities.
Performance Management	Staff motivation, working in shifts and handover meetings, Defined jobdescriptions in place, Performance agreement objectives, Performance tracking & evaluation through the dashboard, Continuous improvement, Low implementation of SD initiatives, Planned job observations(PJO), Daily talks on performance improvement, Long term goals on SD, Stairway level assessment criteria

Leading People	Written company vision and mission statement, Communication of company goals to the whole organisation, Handling a large group of people, We dream significant,Positive change, organisational structures, and supervisory roles.

4.1.3 Theme 3: Systems & Processes

This major category has grouped the data codes related to systems and processes. Systems and processes provides an opportunity for improvement and this creates room for SD initiatives implementation. This theme also answers RQ1, demonstrating how systems and processes integrates SD principles into business practices. Grouping of data codes under this theme fell under quality management system, environmental management system, and occupational health & safety. The results of the study indicate that in all the three industries, systems and processes are catalytic in delivering value. Two of the industries chosen for this study were textile industries, while the other was a brewery. All three companies believe in the production of quality goods to meet customer expectations. Driving for quality facilitates the economic growth pillar due to customer satisfaction. The requirements for compliance with regulations drive performance of environmental management systems and occupational health & safety systems.

Commitment to a quality management system was evident at the brewery and one textile industry. The approach to a quality management system differed for the studied companies in one of the textile industries. The quality management system is in accordance with ISO 9000:2015 with clear goals on quality objectives. A documented quality management system was found in place and it enables both internal and external audits. The brewery implements an integrated voyager plant optimization (VPO) system. The system integrates safety, quality, environment, management, maintenance, people, and logistics. The brewery emphasised on the use of standard operating procedures (SOPs) and the use of workflows. Inspections of finished products verifies quality and prevents some defects. Process improvement and optimization increases the efficiency, reducing pollution and adding value to the finished products. Inspection of raw material also removes some defects and suppliers are required to meet the standards of supply.

Trade effluent-generating industries uphold quality management because it directly affects the profit. Although the industry implements environmental management system it is not as robust as the implementation of quality management system. Inspection of the raw material used by the industry ensures compliance with environmental standards. The brewery is using the VPO that integrates environmental management with other systems. The brewery implements reputable measures such as the NOSA for environmental management. The brewery is very active in implementing the environmental management standards compared to the textile industries studied. The brewery had more documentation of policy on ecological management as well as health and safety. The three companies chosen for this study have put in place pre-treatment plants for industrial wastewater to improve the quality of the effluent before discharge. During the interview, research participants mentioned the importance of controlling the industrial processes as well as the improvement of process efficiency.

Promotion of occupational health and safety procedures is vigorous at the brewery and a statement such as *"Safety First"* is a confirmation. The three industries included for this study strongly support workplace health and safety. Research participants confirmed the provision of personal protective equipment (PPE) to all workers. The brewery and one of the textile industries had an officer designated to safety issues. The research participants mentioned mandatory adherence to procedures and protocols in designated areas, especial at the brewery. The brewery works with hot steam as a result workers safety is a priority. Safety precautions at the brewery includes safe handling of chemicals to protect workers from chemical burns. The brewery had good documentation on health and safety. Trade effluent-generating industries adhered to the COVID – 19 protocols to keep the workers and the customers safe. Systems and processes improvements provides room to incorporate

SD principles into business practices.

Table 5

Codes Supporting Systems & Processes

Category	Codes Generated at Level 2
Quality Management System	Commitment to a quality management system as per ISO 9000:2015, Periodic Quality Audits by external auditors, use of standard operating procedures(SOP's), Quality assurance and quality control procedures in place, internal audits, identification of anomalies & corrective action, strict compliance to VPO, 99% compliance to standards, Failure to meet quality standards, ISO9000:2015 compliance, workflows, avoidance of defects, adherence to standards by suppliers, documented quality management system, process improvement & optimization
Environmental Management System	Management through VPO, Alignment with international standards, SD initiatives in place, Inspections of raw material to ensure compliance with environmental standards, compliance to NOSA standards, safety, environment, and quality policy in place, Monitoring of compliancy to security, environment & quality policy, Control of industrial processes, Process efficiency,
Occupational Health & Safety	Provision of personal protective equipment (PPE), Health & wellness in the workplace, compliance to health & safety standards, procedures and protocols, safe handling of chemicals, regulation of compliance standards, health & safety officers in place, safety inspections, teaching on occupational health & safety, taking precautions when working with hot steam, protection from chemical burns, strong support of health & safety, good documentation on health & safety standards.

4.1.4 Theme 4: Stakeholder Engagement & Innovation

Stakeholder engagement and innovation is one area that has the potential to infuse SD principles into business practices. This theme is also answering RQ1 as well as its sub research questions. Stakeholders are people and they fall under the social pillar. Innovation is coming up with new methods and ways of production including doing business. Innovation cuts across all three pillars of SD, ranging from exceeding customer expectations, process efficiency, and positioning for competitive advantage. In this qualitative case study, the basis for constructing the theme on stakeholder engagement & innovation was the knowledge of the SD by the research participants, stakeholder relationships, innovation, and communication of SD initiatives in the organisation. The research study has revealed low level of awareness of the SD concept by the employees in the chosen industries for this study. The research participants indicated a low level of understanding on the agenda for 2030. The research participants appreciated the agenda 2030 on SD aspirations and demonstrated interest in learning more about the SD concept (Table 6).

Stakeholder relationships is a significant category under stakeholder engagement & innovation. The sub theme indicates the importance of stakeholder involvement, cooperation with stakeholders as well as collaboration in problem solving. One research participant indicated the involvement of regulators in resolving pollution problems. Establishment of communication routes to connect with the different stakeholders was evident in the three industries. The communication channels with the stakeholders differ for the three industries. These communication routes are for both the internal and external stakeholders. The brewery has a strong public relations office that provides an interface between the organisation and the public. In the textile industry, they indicated the different packaging

designed for the different types of customers. The industry has also indicated the occasionally visits they make to the stakeholders to discuss the wastewater management challenges.

All the three industries studied have put in place pre-treatment plants to reduce the pollution load from the industrial wastewater before discharge into the sewer system. The industry applies Innovative methods and problem solving tools to prevent the problem of pollution at source. There was evidence of research on going at industry level to turn industrial waste into a resource. The brewery mentioned the potential to convert the bran into electricity (waste to energy). At the textile industry the cut offs from the fabrics are used to make mops and pillows. The voyager plant optimization used by the brewery encourages innovation through continuous improvement. SD initiatives implemented by the industry such as the 3R strategy and zero liquid discharge provides an opportunity for curbing pollution at its source. Employees are willing to conduct researches to improve their processes and align with the technological changes. One of the research participants said, “I will make sure that I do some researches”. Another research participant at the textile industry mentioned the use of internet to conduct research to improve the processes. At the brewery, there was thinking to include COVID 19 into the Voyager Plant Optimization.

Another grouping of codes under this theme was communication of SD initiatives, where communication in the studied industries took the form of discussions at the workstations and pep talks for the textile industry. At the brewery, they work in shifts, and there are handover notes at the end of every change of shift. Meetings held provides the opportunity to monitor performance of the SD initiatives. Customer feedback is also a potential for improvement and one of the textile industries had a suggestion box in place for ideas. In all the three industries studied, there was e-mail coverage within the organisation. Other communication modes identified were consultation of staff by management,

workers committee at one of the textile industries, collaboration with peer departments, communication with suppliers, working teams and monthly reports.

Table 6

Codes Supporting Stakeholder Engagement & Innovation

Category	Codes Generated at Level 2
Knowledge of SD	Some level of awareness on SD, Lack of understanding on the agenda 2030, Need foreducation and awareness on SD, Appreciation of environmental protection, peace & prosperity.
Stakeholder Relationships	Stakeholder involvement, organisational structure, cooperation with stakeholders, customer communication, Different types of customers, Public Relations, visit to stakeholders, established communication routes for internal & external stakeholders, Collaboration with stakeholders in problem solving, Involvement of regulators.
Innovation	Problem solving and creativity, innovation, Problem solving tools, Implementation of 3R's, "I will make sure that I do some researches", Recycle, re-use & recover, Areas of improvement put in VPO, waste re-use to make pillows, Turning industrial waste into a resource, Waste to energy (Bran to electricity), Zero liquid discharge & re-use, Innovation & technological changes, the use of internet to conduct research for improvement, Inclusion of COVID 19 in VPO.

Communication of SD Initiatives	Informal discussions at workstations & Pep talks, customer feedback, shift handover notes, Meetings(safety, management reviews, general staff), Quiz & suggestion box for ideas, e-mail coverage in the organisation, collaboration with peer departments, consultation of staff by management on decision making, workers committee, communication tools, teamwork, communication with suppliers, monthly reports.

4.1.5 Theme 5: International Business

RQ2. *What are the challenges faced by the trade effluent-generating industries when balancing financial gains with environmental protection and social development.* This follow-up research question identified the challenges faced by the trade effluent-generating industries in the implementation of the SD concept. Theme on international business addressed the research questions by grouping the data codes associated with globalisation and international markets (Table 7). Globalisation and positioning for the international markets is among the major challenges faced by the trade effluent-generating industries. Globalisation has flattened the boarders forcing the local companies to adhere to the international obligations such as the green economy and international standards such as the better cotton initiative (BCI). Trade effluent-generating industry must align with the international markets to meet the demands of the international customers. The technological changes are moving at a fast pace, forcing the industry to shift and align with the changes. The trade effluent industry is aware of the global challenges but they do not have the capacity to pace up with the challenges.

All the three trade effluent-generating industries export their products to the international markets in the Southern Africa Development Community (SADC) region, the US, Europe and Asia. This poses some competition for market with the developed world. The buying power puts pressure on the local market and Botswana consumers prefer merchandize from overseas. One of the research participants indicated that the local buyers preferred t-shirts from China than from their company. The businesses are experiencing little support from the government and the private sector in the country. The industry imports raw material from overseas, increasing the operating costs for these industries. One of the research participants confirmed, “Bringing raw material in Botswana is expensive, it makes us not to be competitive”.

Table 7

Codes Supporting International Business

Category	Codes Generated at Level 2
Globalization	Green Economy, use of international standards in the organisation, the use of ICT(technological changes), Global company, Community of practice, Competing with international markets, Commemoration of World designated days, Products accepted internationally, Compliance to the Better Cotton Initiative(BCI).
International Markets	International Customers, International Markets, Importing raw material, Competition with markets in Asia and Europe, Export of t-shirts, Chinese markets preferred over the local markets. Low support of local markets by both the government and the private sector, Local buyers prefer international merchandise.

4.1.6 Theme 6: Challenges & Opportunities

Besides the global challenges affecting the international business in trade effluent-generating industries, the industry sector experiences some challenges at national and organisational level. These are challenges related to the budget constraints, making it difficult for the industry to maintain the pre-treatment plants for industrial effluent discharge. In some cases, the plants are old and difficult to adapt to the technological changes. The industry is not able to meet the required standards for effluent discharge. The education level is low in the effluent-generating industries because these are blue-collar jobs. In all the three industries studied, there was no focused unit for the SD implementation.

SD implementation is on adhoc basis with a lot of fragmentation with some business areas not aware of the SD concept. Other challenges tabulated below (Table 8) includes the difficulty the industry is facing in the balance of the 3P's (People, Profit, & Planet).

RQ3. *How does the integration of sustainable development principles into the industry's strategy benefit the trade effluent-generating industry?* This follow-up research question explored for the opportunities available for the trade effluent-generating industry in the application of the SD principles. Theme 6 on Challenges and Opportunities answered both RQ2 and RQ3, where the major category on challenges answered RQ2 and the major category on opportunities answered RQ3. The semi-structured interviews revealed that SD application is an opportunity for improvement in many aspects such as quality goods, sustainability, competitive advantage, company growth, branding, future job opportunities etc (Table 8). The statements made by the research participants evidenced the perceived benefits of SD application. These are; "Pollution prevention will give us a good name", "Being green helps us to be competitive", SD will help the entire nation", SD promotes health and wellness", "SD will help to create future jobs" (Table 9). There are many benefits associated with SD implementation for the trade effluent-generating industries, including employment creation for the future generations.

Table 8

Codes Supporting Challenges & Opportunities

Category	Codes Generated at Level 2
Challenges	Budget constraints to improve pre-treatment, Difficult adapting to new changes, lack of specialized skills, Old Plants, Low level of education(Blue collar jobs), Poor supervisory skills, Inadequate regulation by the government, limited land for growth, renewable energy expensive, lack of recycling in Botswana, Non-compliancy to effluent discharge standards, Import of working equipment, spare parts & chemicals, Operations & Maintenance of ETP, Low wages, " Because bringing material in Botswana is expensive, it makes us not to be competitive". Expensive supplies & VAT, High operating Costs, No focused unit on SD, Lack of communication skills to cascade the vision & mission from top to bottom, Government minimum wage. COVID 19, Difficulty balancing the 3P's(People, Profit & Planet)
Opportunities	Quality Service delivery, Company longevity, Customer attraction, Customer & employee loyalty, Waste as a resource, Compliance to Government regulations,Future job opportunities, Long term benefits, Improved stakeholder relationships, Conservation of natural resources, Building partnerships on compliance, Cost saving, Clean production, Informed society on SDG's, Improved company reputation & protection of future generations, benefit to the nation, Promotion of health & wellness, Staff motivation, increased sales and profit, attraction of investors, good company reputation, company growth, circular economy, "Pollution prevention will give us a good name", "Being green helps us to be competitive",

Table 9

Randomly chosen in – vivo codes

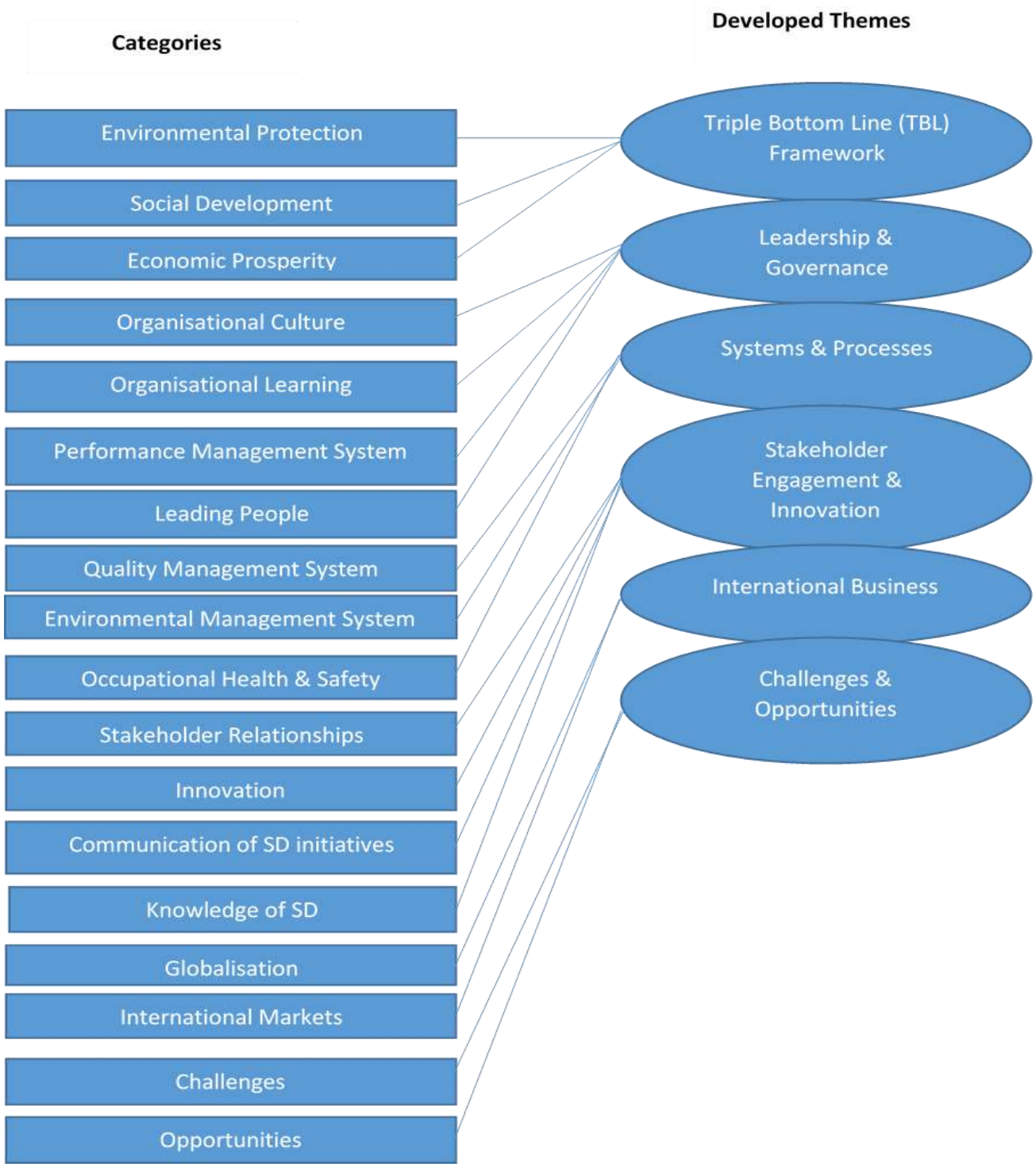
Category	In-vivo Codes Generated
Challenges	"Because bringing material in Botswana is expensive, it makes us not be competitive," " I have not heard about the agenda 2030", "Sometimes we are not able to motivate staff due to lack of finance," "Resources are lacking especial the human resources," "SD is the job of SHE,"
Opportunities	"Pollution prevention will give us a good name", "Being green helps us to be competitive", "SD will help the entire nation", "SD promotes health & Wellness", "It will cause efficiency, increasing production in the company", "SD will help to create jobs for the present and future generations.
Triple Bottom Line(TBL)	"Balancing the 3P's is tricky", "Focus on the environment may cause loss of profit," "I don't know how to balance the 3P's", "We plow back the profits to improve processes," " I don't chase profits, I care about my colleagues, and also make sure that what I use does not harm the environment", and "Our people are the biggest asset".

4.2 Summary of the Results

The six themes formulated from eighteen (18) categories of data codes produced from the interview scripts and the document reviews answered the qualitative research questions. Saladana (2016, p.15) has explained the importance of merging similar categories to develop themes to answer the research questions. The eighteen(18) categories derived from the data coding are (a) environmental protection; (b) social development; (c)economic prosperity; (d)quality management system; (e)environmental management system; (f)occupational health and safety; (g)organisational culture; (h)organisational learning; (i)stakeholder relationships; (j) performance management system; (k) challenges (l) opportunities; (m)globalisation;(n) international markets;(o) innovation; (p)communication of SD initiatives; (q)leading people; and (r)knowledge of SD. The themes that emerged from these categories to answer the research questions are; (a) Triple Bottom Line (TBL) Framework; (b) Leadership & Governance; (c) Systems and Processes; (d) Stakeholder Engagement & Innovation; (e) International Business and (f) Challenges and Opportunities. The six themes are the significant findings of the qualitative case study (Figure 6).

Figure 6

Data Coding Categories and Themes



Note. Six themes developed from the 18 compressed categories

CHAPTER 5: INTERPRETATION OF THE RESULTS

The aim of the multi-method qualitative case study was to explore the integration of the SD principles in business practices for the trade effluent-generating industries. The study answered the following research questions. **RQ1**. How are the Sustainable Development (SD) pillars of economic growth, environmental protection and social development imbedded into the business practices in trade effluent-generating industries at various levels of management?, **RQ1.1.** How is economic growth imbedded into business practices in trade effluent-generating industries at various levels of management?, **RQ1.2.,** How is environmental protection embedded into business practices in trade effluent-generating industries at various levels of management?, **RQ1.3.** How is social development imbedded into business practices in trade effluent-generating industries at various levels of management? **RQ2.** What are the challenges faced by the trade effluent-generating industries when balancing financial gains with environmental protection and social development? and **RQ3.** How does the integration of sustainable development principles into the industry's strategy benefit the trade effluent-generating industry?

The analytic cyclic data coding resulted into eighteen(18) categories from which six(6) themes emerged to answer the above mentioned research questions. The eighteen(18) categories are (a)environmental protection; (b)social development; (c) economic prosperity; (d)organisational culture; (e)organisational learning; (f)performance management system; (g) leading people; (h)quality management system; (i) environmental management system; (h) occupational health & safety;(i) stakeholder relationships; (j) innovation;(k) communication of SD initiatives; (l) knowledge of SD, globalization; (m) international markets; (n) challenges and opportunities; and the six themes that emerged from the categories to answer the research questions are (a)TBL framework; (b)Leadership & Governance; (c)Systems & Processes; (d) Stakeholders & Innovation; (e) International Business; (f)

Challenges & Opportunities. The purpose of this chapter is to discuss the results of the study in relation to the research questions.

5.1 Triple Bottom Line (TBL) Framework

The TBL framework is the first theme derived from the data coding process to answer the research questions. This theme answered RQ 1 that explored the integration of the SD pillars in business practices by the trade effluent-generating industries. Literature has revealed that the TBL framework suggested by Elkington provides the opportunity to the business to balance the SD pillars (Hahn et al., 2018; Murray et al., 2017). The company has to deal with the tension of balancing the financial performance goals with the environmental protection and social equity performance goals (Horak et al., 2018; Hosta & Zabkar, 2020). SD as the global challenge aims for economic prosperity, environmental protection and social equity (Doh et al., 2017; George et al., 2016). The sub research questions RQ1.1 explored for economic growth, RQ1.2 explored for environmental protection and RQ1.3 explored for social development, which are the three pillars of SD. The results of the study have demonstrated that the trade effluent-generating industry has embraced the SD pillars in their business practices. However, trade effluent-generating industries give priority to profit making than the other two pillars of environmental protection and social development. One of the research participants even said, “Focus on the environment may cause a loss on profits”.

The balance of economic prosperity with environmental protection and social equity was perceived by Elkington (Engert et al, 2016; Tsalis et al., 2020) who realized the ecological challenges that are coupled with industrial development(Kolk, 2016). Elkington encouraged companies to reconsider their value creation activities in a multidimensional perspective to integrate the economic aspects with the social and environmental dimensions, hence the TBL framework (Ciliberto et al., 2021; Lozano, 2020). Balancing the economic aspects of the business activities with the needs of the

society and the environment is essential for the achievement of the business sustainability (Burrit et al., 2020; Ciliberto et al., 2021). Sustainability became a dimension of the business strategy after the Rio summit of 1992(Tarnanidis et al., 2019).

Before the Rio Summit of 1992, corporate sustainability was primarily concerned with environmental issues in response to the requirements of the Brundtland's report to protect natural resources in order for future generations to meet their needs (Dobrovolska, 2018). The TBL performance framework suggested by Elkington for the businesses became a more systematic approach for the balance of financial performance goals with environmental and social performance goals. The TBL performance framework aims to challenge a business' values, strategies, and practices for achieving sustainable development (Lozano, 2020). Therefore the balance of the SD pillars in business poses a significant influence on the corporate strategic management (Ghobakhloo et al., 2021) which has to focus on bringing an equilibrium between profit making, environmental protection and social welfare(Pisani et al., 2017; Qeke & Dubihlela, 2018). The balance of profit making with the safety of the environment and the people's welfare is in line with the SDGs (Foroudi et al., 2022) which are tracing the sustainability path to 2030 (Mio et al., 2020). The purpose of the SDGs is to end poverty, protect the planet and ensure prosperity for all by the year 2030(Dobrovolska, 2018; Howlett & Saguin, 2018; Wysokinska, 2017).

The multi-method qualitative case study results indicated that trade effluent-generating industry has embraced the SD principles of environmental protection, social development and economic growth in support of the global challenge (Mio et al., 2020; Montiel et al., 2021). Based on the research questions and the literature (Creswell, 2016, p.154, Marshall & Rossman, 2016, p.224), hand-coded data under the TBL theme was grouped under the SD pillars of environmental protection,

social development, and economic prosperity, which is in line with the sub research questions addressing those pillars. According to Ghobakhloo et al. (2021), sustainability is a core function for the modern business and its achievement is by striking a balance between the business's economic aspects and the needs of society and the environment (Burritt et al., 2020). Therefore, adopting Elkington's TBL performance framework for the business will facilitate the practice of SD principles in the industry. Balancing the three pillars of the business is a challenge (Benkert, 2021; Borland et al., 2016; Henry et al., Buyl & Jansen, 2019), the businesses continue to prioritize profit making at the expense of the people and the environment. This has confirmed findings by the previous scholars who posited that businesses are still giving priority to profit making neglecting the other two SD Pillars (Tate & Bals, 2018, Pedersen, Gwozdz & Hvass, 2018). There are some positives on the industry's attitude regarding the implementation of the SD initiatives in their business practices. The industry has put some unique SD initiatives in place to address the economic aspects and the needs of the environment and the society. Arrangement of the hand data coding results according to the SD pillars is a demonstration of SD uptake by the industry.

5.1.1 Economic Growth

Economic prosperity drives development and profit making (Hann et al., 2018; Jones et al., 2016). Previous studies revealed that business puts a lot of emphasis on profit making for survival because that has been the traditional norm (Horak et al., Arya & Ismail, 2018, Pedersen, Gwozdz & Hvass, 2018). But the mind-set of the modern business has to massively shift towards sustainability(Ghobakhloo et al., 2021) to balance the needs of the environment and the society with the economic aspects of the business activities(Benkert, 2021; Burritt et al., 2020). The multi method qualitative case study revealed that all the three organisations chosen for the study have set clear financial performance goals, which are the drivers of the economic growth pillar. Ciliberto et al. (2021) identified business's economic aspects as profit, revenues and financial returns on capital

invested. In this multi-method qualitative study, there was evidence that the industry has put in place strategies for budget monitoring, cost saving, revenue collection, and the derivation of economic benefits from waste. This is a clear indication that the economic aspects in the trade effluent-generating industries are visible. Financial gains continue to take precedence at the expense of environmental protection and social equity (Horak, Arya & Ismail, 2018; Walsh & Dodds, 2017). The practice is influenced by the fact that many still believe that the purpose of a business is to make profit to benefit the shareholders and the owners (Gwozdz & Hvass, 2018; Tate & Bals, 2018). The shift in mind-set for the industry is essential to ensure that the economic management for the trade effluent-generating industry is sustainable.

5.1.2 Environmental Protection

The environmental protection pillar prioritizes the protection of the planet (Walsh & Dodds, 2017; Villamil, 2021), on which the business exists and derives its raw materials (Dobrovolska, 2018; Shahzad, 2021). Industrial processes cause environmental challenges such as pollution, ecological degradation and loss of biodiversity (Carmine & De Marchi, 2020) due to wastewater discharge and air emissions (Doh et al., 2017; George et al., 2016). The suggestion of the TBL performance framework by Elkington (Ghobakhloo et al., 2020; Horak et al., 2018; Walsh & Dodds, 2017; Horak, Arya & Ismail, 2018) was meant to integrate the three dimensions of SD(Ciliberto et al., 2021) to address these global challenges(Carmine & De Marchi, 2020). However, the multi-method qualitative case study has revealed that the three industries have put in place some unique initiatives for environmental protection in line with their business processes. These industries produce large volumes of wastewater, and these wastewaters may result in pollution and environmental degradation if not appropriately managed. Pollution and environmental degradation affects the global ecosystem putting pressure on the limited natural resources (Ciliberto et al., 2021). Industrial processes release harmful substances that may put a risk to the well-being of the humankind.

The three industries studied have all put in place wastewater pre-treatment facility to reduce the pollution load on the wastewater before discharge into the sewer line. Puglieri et al. (2021) have indicated that companies have been addressing sustainability in different ways in the past through the implementation of end-of-pipe solutions to the implementation of strategies such as the 3Rs (reduce, re-use & recycle). This resonates with the strategy that the trade effluent-generating industries have put in place. The results of the study indicated that the industry has designated waste collection points on the premises, proper handling of hazardous chemicals as well as the practice of 4Rs(re-use, reduce, recycle and recover) strategy. Previous studies identified waste reduction and organisational efficiency as catalysts for environmental performance (Roscoe et al., 2019). Strategies such as green chemistry are suitable for the reduction of health, safety and environmental impacts of chemical products and processes, which contributes to the reduction of the environmental footprint (Montiel et al., 2020). Many companies are now moving from end of pipe solution to including sustainability as part of their business strategies enhancing competitive advantage in the long term, innovation and the development of core competencies (Puglieri et al., 2021).

The trade effluent-generating industry has designated officers on safety, health, and environment and have generally demonstrated commitment to sound environmental practices intended for pollution prevention at source. Previous studies have indicated the challenge faced by the industry in the measurement of environmental performance (Ciliberto et al., 2021; Shahzad, 2021; Tarnanidis, 2019). The trade effluent-generating industries are experiencing the same problems in the measurement of environmental performance. This gap hinders the industry from entirely reducing the environmental footprint. The industry derives raw material from nature and these resources are finite (Beerannavar, 2020),as a result the importance of protecting the planet is a benefit to the future

business (Ghobakhloo et al., 2021; Puglieri et al., 2021). The benefits mentioned by Ghobakhloo et al. (2021) are long-term value, constructive relationships with internal and external stakeholders, mitigating socio environmental risks, attracting investments and building brand equity.

5.1.3 Social Development

The social development pillar integrates the human aspect into the SD concept, requiring businesses to consider the welfare and the needs of the people (Kolk, 2016; Miska et al., 2018). The people are the consumers, employees, communities adjacent to the business, shareholders and the future generations (Alder, 2016; Borland et al., 2016; Tate & Bals, 2016). The needs of the people puts pressure on the business including the needs of the future generations that are to be preserved (Goergen & Tonks, 2019; Jones et al., 2018). Therefore, the social development pillar has to take into consideration all the stakeholders including the future generations. Influence from these various stakeholders puts pressure on the businesses for greening (Adomako et al., 2022; Li et al., 2022). The results of the multi qualitative case study revealed that the selected organisations have put in place company policies to support staff welfare, and in all the three organisations, there are some activities conducted to help the communities in the form of corporate social responsibility. One of the companies is sponsoring some football tournaments with t-shirts while the other has supported a women based group with donations.

The company policy on staff welfare and motivation needs strengthening to cater for staff empowerment on the SD practice. This qualitative case study revealed that most of the staff do not understand much regarding the SD principles. Understanding of the SD principles by the employees at all levels would easily facilitate the engrafting of the principles into the business practice. Sustainability has to be included in the business practice (Ghobakhloo et al., 2021). This mind-set shift by the modern business exerts pressure on the business to focus on green and sustainable value

creation (Shahzad et al., 2021). The business can no longer be reactionary to the customer demands, stakeholder concerns, and regulatory requirements (Ghobakhloo, 2021). The employees can do these good sustainability practices at company level. Company policies need to embrace the Green Human Resources Management (GHRM) to enhance the SD practices (Roscoe et al., 2019; Shahzad et al., 2021). Roscoe et al. (2019) have described GHRM as employee abilities, motivating green employees and providing green opportunities.

The document reviews revealed the company's vision, mission, and values, which is a commitment to the social aspect of the SD. The extract from the document review was, *"We are clear that our business is not separate from society; it is one, and at the same time an employer, a customer, a supplier, and a taxpayer."* A documented vision or strategic foundation needs communication to all the stakeholders, including the employees, for action. The study period was during the COVID-19 pandemic, and all the companies selected for this multi-method qualitative case study gave priority to the health and safety of the employees and other stakeholders by complying with the government regulations and protocols on COVID-19. Companies also took into consideration other restrictions, such as the national labour laws. Compared to the environmental and economic pillars, the study revealed that activities that cause the social pillar lag behind in trade effluent-generating industries. The findings of this multi-method qualitative case study have confirmed the study conducted by Tate & Bals (2018) regarding the inclusion of the social issues in practice by the business industry. Promotion of the social initiatives into the business models for the trade effluent-generating industries is encouraged.

5.1.4 Balancing the SD Pillars

The balance of the SD pillars in the trade effluent-generating industries was a challenge. The industry has put initiatives to drive the three pillars of SD in their business practices, but the balance

was not evident. Like all other conventional businesses, the trade effluent-generating industries give priority to the economic aspects. In comparison to the other two pillars of SD, the social pillar receives the least amount of attention. Puglieri et al. (2021) has posited that companies have recently begun including sustainability as part of their business strategy. Otherwise, companies implement SD initiatives for compliance, disconnected from the strategic business goals. The study revealed a lack of an integrative approach to applying SD principles in the chosen trade effluent-generating industries. Previous studies have also indicated challenges faced by the industry in the balance of SD applications (Pedersen et al., 2018; Tate & Bals, 2018). This multi-method qualitative case study has revealed that the trade effluent-generating industry has mentioned good initiatives on SD but has failed to demonstrate the linkage with organisational strategic goals.

The results of this study have confirmed tension in balancing the three dimensions of SD in business (Hahn et al., 2018; Horak et al., 2018). The fragmentation of the sustainability function with other business functions(Rego et al., 2015) has been a challenge in the past for the integrative approach in SD application(Henry et al., 2019; Puglieri et al., 2021). In all the three industries selected for this study, there was fragmentation of the core business functions from the sustainability functions. Adopting the TBL performance framework (Hahn et al., 2018) by the trade effluent-generating industry will facilitate an integrative approach to the application of the SD principles. According to previous studies, the uptake of SD practice by business is low (Clementino & Perkins, 2020; Murray et al., 2017). In this multi-qualitative case study, the business priority for the trade effluent-generating industries is the achievement of the financial goals compared to the environmental and social goals.

The SD agenda that has been evolving for the past three decades, resulting into the SDGs in 2015(Doh et al., 2017; George et al., 2016) directs business actions and public policy challenges (van Zanten & van Tulder, 2018). In response to the SD agenda, the WBCSD has adopted the SDGs in their vision 2050, which stipulates, "We support our members and the wider business community to strategically integrate SDGs as a blue print for peace and prosperity for people and the planet" (O' Reilly et al., 2018, p.2). The performance of the trade effluent-generating industries in Botswana does not equate to the commitments made by the global business. The SD agenda 2030(Doh et al., 2017; Mio et al., 2020) aims to end poverty, protect the planet and ensure prosperity for all (Dobrovolska, 2018; George et al., 2016), living no one behind (Wysokinska, 2017). Business plays a vital role in the achievement of the SDGs(Montiel et al., 2021; van Tulder et al., 2021; van Zanten & van Tulder, 2018) due to its ability to innovate(Ghobakhloo et al., 2021; Shahzad et al., 2021). Therefore, the trade effluent-generating industries have to re-think their actions to align with the aspirations of the global agenda. The adoption of the TBL performance framework by the industry is improvement to facilitate the uptake of the SD in business practices by balancing the financial, social, and environmental goals.

Many scholars (Benkert, 2021; Carmine & De Marchi, 2022; Joseph et al., 2020) reported tension in the management of the SD pillars for the business. The tension in the SD pillars application has become a hindrance to the achievement of the global agenda on SD. Many businesses are shifting their priorities to the economic aspects with little attention given to the needs of the people and the environment. In this multi-method qualitative case study, research participants demonstrated their inability to balance the SD pillars. The engrafting of the SD into the business has got some value to add, and it provides an opportunity to rethink approaches to sustainable value creation(Mio et al., 2020; Shahzad et al., 2021) and also provides a clear framework to structure sustainability goals (van Zanten

& van Tulder, 2018). Implementing the TBL performance framework at every level in the business organisational structures may yield good results. SSM (Rego et al., 2015; Rubio – Mozos et al., 2020), suggested by Stead & Stead (2019 as an improvement to the strategic management process to facilitate the uptake of TBL performance framework by the business is a new paradigm. The trade effluent-generating industry needs to build internal capacity to enable the practice of the SD principles. SSM, as a new paradigm shift for strategic management (Borland et al., 2016; Stead & Stead, 2019) will easily enable the weaving of the SD principles into business management practices and operations. Bilinska – Reformat et al. (2018) have indicated the importance of the paradigm shift in strategic management to embrace the SD concept in the business strategy. The transformation of the strategic management process is essential to pace up with the ecological and social trends (Edwards, 2020; Engert et al., 2016; Ludeke-Freund, 2019).

Pollution prevention at source and green innovations (Akhtar et al., 2018; Chan et al., 2021) are some strategies that businesses can adopt to advance the aspirations of the SD agenda. Puglieri et al. (2021) have supported the circular economy, while Borland et al. (2016) have endorsed the cradle-to-cradle initiatives promoting the recycling of technical nutrients and the discharge of biological nutrients. These are good practices that support the SD concept; however, for them to work in the business, they need to be embedded into the strategic management process for easy monitoring and balance with the traditional financial goals (Horak et al., 2018, Joseph et al., 2020). The selected industries for this study have put in place an effluent treatment plant on-site practicing the 4Rs (recycle, reduce, re-use, and recover), which supports the circular economy and the co-existence of the industrial systems with the natural systems (Borland et al., 2016). According Horak et al. (2018), adopting sustainability efforts can lead to a number of benefits for a business. These benefits, includes

positive image, enhanced trust from stakeholders, efficiency in resource management, a competitive advantage, superior returns on investment and profitability.

There are some initiatives identified that promote the social aspects such as health and wellness protocols and safety procedures. Statements such as *"We are clear that our business is not separate from society, it is one, and at the same time an employer, a customer, a supplier and a taxpayer."* is an evidence of social practice by the industry. The statement indicates that the industry has embraced the inclusion of the social aspect into their business practices. However, the integration of the social elements has to be homogenous throughout the organisational structure affecting every level of business management. An integrative approach is essential to achieve the desired homogenous weaving of the SD principles throughout the structures (Henry et al., 2019; Mio et al., 2020; Villamil et al., 2021) and for the adoption of the TBL performance framework to balance the financial with environmental and social goals(Benkert, 2021; Burritt et al., 2020; Horak et al., 2018). Previous studies have revealed extensive research in the TBL's economic and environmental dimensions in management theory and practice, while the social dimension lagged behind (Shahzad et al., 2021; Tate & Bals, 2018).

5.2 Leadership and Governance

Leadership and governance is another theme developed from the multi-method qualitative case study. The achievement of the infusion of the SD principles into business practices requires some effective leadership and proper governance structures in place. Leadership and governance structures for the trade effluent-generating industries need strengthening. There is a need for capacity building to infuse the SD principles into business practices. Leaders, due to their positions of influence (Jones et al., 2016; Olejniczak & Lukasik, 2016), provide the strategic direction in an organisation (Maak

et al., 2016). The leader's responsibility is to cultivate an organisational culture based on the corporate vision, mission, and values (Kwakye, 2018; Singanga, 2019). Good leadership qualities and governance structures (Boone et al., 2019) are essential for effectively including SD pillars into business practices in trade effluent-generating industries. However, these industries are blue-collar jobs requiring the breakdown of the SD principles for understanding at these lower levels.

Leadership and governance go hand in hand; they provide a platform through which the stakeholders perceive an organisation's image. As a result, the, organisational leadership and control are critical for the integration of sustainability into the corporate strategic management process (Meijaard & Sheil, 2019; Miska & Mendenhall, 2018). WBCSD (2010) identified business leadership as a catalyst for SD, challenging companies to re-think their business models to protect the planet and the people. Trade effluent-generating industries have the same challenge and, as a result, need to improve on their leadership capabilities and governance. The leader is responsible for advocating for sustainability both inside and outside the organisation by selling sustainability to stakeholders and embedding sustainability in the practices and culture of the organisation (Jaena et al., 2021).

Leadership commitment is important to ensure the inclusion of green innovations(Ghobakhloo et al., 2021; Roscoe et al., 2019; Shahzad et al., 2021) in the firm's strategies (Akhtar et al., 2018; Dhopte & Sinha, 2016). Henry et al. (2019) has also demonstrated the importance of leadership commitment in the pursuance of the TBL performance for the business. Leadership and Governance are drivers of change required for the new paradigm shift (Goergen & Tonks, 2017; Mees & Smith, 2019). Trade effluent-generating industries in Botswana need to adopt green leadership(Jaena et al., 2021; Obeidat et al., 2020) emphasizing pollution prevention and green innovations to align with industry 4.0(Ghobakhloo et al., 2021). Leadership and governance influence the organisational culture

(Wang, Farag & Ahmad, 2021), which is necessary to cultivate SD practices in the organisation. Scholars have supported transformational leadership as a driver of change (Jaena et al., 2021; Li et al., 2022), and good corporate governance has demonstrated promising results for the industry in Australia (Goergen & Tonks, 2017) where inclusion of SD principles in business actions is reported to be a success (Mees & Smith, 2019). The categories that formed the theme of leadership and governance are organisational culture, organisational learning, performance management system, and leading people.

5.2.1 Organisational Culture

Trade effluent-generating industries have demonstrated some work culture based on organisational values such as teamwork, integrity, patience, transparency, unity, cooperation, etc. The work cultures varied from one organisation to the other based on the values chosen to shape the behaviours at work. However, the organisational cultures did not strongly include sustainability because SD initiatives are not cultivated into the cultures. It was evident from the study results that organisational culture that supports the inclusion of the SD pillars in business practices is a competitive advantage. Scholars have revealed that corporate culture is an internal capability that sets the organisation apart from its competitors (Su et al., 2016; Pedersen et al., 2018). Corporate values that align with the organisational vision and mission (Borland et al., 2016; Li et al., 2022) influences the organisational culture. Therefore, the trade effluent-generating industry have to adopt sustainability in their organisational cultures to demonstrate commitment to the SD agenda and improve their branding.

Through adopting SD principles as part of the organisational culture fosters green innovations, capabilities, and green practices (Shahzad, 2021). A green corporate culture influences green abilities by integrating positive strategic green thinking (Roscoe, 2019). Wang et al. (2021) have confirmed

that organisational culture fosters innovation, which is an important ingredient for weaving the SD into business practices. The multi-method qualitative case study results have confirmed the importance of organisational values in integrating SD principles into business practices at various levels of management. Therefore, trade effluent-generating industries have to influence green behaviours that facilitate the inclusion of the SD principles into the business practices at all levels, including at the strategic level. The adoption of sustainability as a core value for businesses will accelerate the inclusion of SD in business practice (Meijaard &Sheil, 2019; Miska & Mendenhall, 2018).

However, the adoption of sustainability as a business core value was missing, except in one organisation that highlighted sustainability and ethics as company values. Even though documents mentioned sustainability as a core value, the practice on the ground could not confirm. Previous studies indicated that the fragmentation of the sustainability function with other core business functions hinders TBL performance (Henry et al., 2019; Rego et al., 2015). Integrating SD principles into the business strategy and business practices will enhance the company brand (Horak, Arya & Ismail, 2018). The qualitative case study revealed that some of the employees do not understand the value of SD integration in their organisations, as was depicted by the research participant who said *"SD is the work of SHE"* meaning that it was not part of their job description, but the responsibility of the Safety, Health and Environment Department. Puglieri et al. (2021) has also confirmed the fragmentation experienced between the sustainability and strategic business goals. Therefore SD initiatives have to be included as part of the core business functions to drive the business' strategic goals.

5.2.2 Organisational Learning

Organisational learning increases the internal capabilities that may be viewed as valuable, rare, inimitable, and non – substitutable (Su et al., 2016; Pedersen et al., 2018), hence a competitive edge

for the company (Mena et al., 2019). Trade effluent-generating industries have demonstrated commitment to continuous learning and development, which is a catalyst for SD integration into the organisational strategic goals. The results of the multi-method qualitative study have indicated that both formal and on-the-job training are effective ways for learning. The training provided by the industries is not enough to accelerate the SD into business practices. When coupled with knowledge exchange and benchmarking with other companies both locally and internationally this training will improve. Learning is the engine through which organisational cultures can transform (Feeney et al., 2022; Li et al., 2022) to embrace green practices, innovations and technologies(Ghobakhloo et al., 2021; Roscoe, 2019) accelerating the uptake of the SD principles by the industries.

Akhtar et al. (2018) has mentioned the importance of top management competencies leading green innovations, such as waste reduction, reusable packaging, material efficiency, energy consumption, and the protection of the environment. Scholars have suggested responsible management learning to mainstream leaders and managers to embed the SD principles into their daily practices (Montiel et al., 2020). These capabilities are lacking in the studied organisations. As a result, the industry require management and leadership competencies to improve the internal organisational capabilities. Acquiring competencies for dynamic decision – making, acknowledging contradiction (Henry et al. 2019), and fostering strategic agility (Ahammad et al., 2021) is critical. These internal capabilities, including new ability (Montiel et al., 2021), will allow the organisation to refocus on the external environment by seizing opportunities and maintaining competitiveness (Ghobakhloo et al., 2021; Henry et al., 2019). Learning and growth is limited in these industries due to a lack of capacity to provide on-the-job training. External training could be an option but lack of financial resources hinder the trade effluent-generating industries.

5.2.3 Performance Management System

A performance management system is vital in ensuring the incorporation of financial and non-financial measures into the business strategy (Kaplan & Norton, 1996, p.8). A well-defined performance management system provides the basis for performance appraisal and monitoring. Kaplan & Norton (1996, p.2) alluded to the fact that what cannot be measured cannot be managed. They further indicated that an organisation's performance measurement system strongly affects the behaviour of people inside and outside the organisation. The approach to performance management differ for the three organisations selected for this study. Generally, performance objectives are drawn, and performance is monitored using various performance management tools such as the dashboard, voyager plant optimization (VPO), etc. These performance management tools do not effectively show how the TBL performance goals are balanced. Hansen & Schaltegger (2016) have suggested the Sustainability Balanced Scorecard (SBSC) that explicitly considers environmental, social, and ethical issues in performance measurement and management. A performance management and reward system focused on SD implementation are likely to increase green practices for the trade effluent-generating industries through the motivation of green employees (Roscoe et al., 2019). In this multi–method, qualitative case study, performance measurement and appraisal of the SD initiatives was not precise.

However, the brewery has adopted the voyager plant optimization (VPO) that its global companies implement to manage safety, quality, environment, management, maintenance, people, and logistics. Still, it was not clear how these aspects are balanced. VPO is a promising approach for integrating the different management aspects but it is limited in terms of performance measurement balancing the financial and the non–financial goals. Ciliberto et al. (2021) confirmed that there is no single and universal standard for measuring TBL performance. There is a significant gap in the understanding of the measurement of TBL performance especially the variables to include

(Tarnanidis et al., 2019). On the other hand, Hosta and Zabkar (2021) have commended the TBL performance framework as a well-defined and transparent method for performance evaluation. Besides the financial goals whose measurements are precise, environmental performance (Ghobakhloo, 2021; Puglieri et al. 2021) is also somewhat measured. Nevertheless, the measurement of sustainability initiatives is for compliance disconnected from the strategic business goals. Performance monitoring and measurement for the social aspect is lagging.

5.2.4 Leading People

Integrating SD principles into business practices is a new paradigm shift that requires responsible leadership and management (Montiel, 2020; Pless et al., 2021). In this qualitative case study, the leadership of the studied companies demonstrated some degree of responsible leadership through their company vision and mission statement. However, communication of the vision, mission, and values to all parts of the organisation is lacking in some of the studied industries. This is a problem of communication by the leadership to reach all the parts of the organisation. The role of corporate leaders is to communicate the vision to the external stakeholders and transform the organisational culture to embrace the SD initiatives (Jaena et. al., 2021). Eco-centric visionary leadership (Borland et al., 2019) is required to transform trade effluent-generating industries to favour sustainable development (Ciliberto et al. 2021). The businesses have not entirely aligned with the new paradigm shift considering the business impact on the planet and future generations. Change for the business is inevitable to align with contemporary requirements (Obeidat et al., 2020).

Leadership styles influence the organisational culture hence the business practices. As a result, trade effluent-generating industries should adopt the leadership styles that will allow the business's adaptation to align with green practices. The research participants in leadership positions for these industries indicated that they handle many people, which may indicate that they require the right

leadership competencies to handle these people and align with the SD. Therefore, responsible leadership (Montiel et al., 2020; Pless et al., 2021) is of benefit to these industries to influence green organisational cultures strategically. The desire for positive change by the industries is an advantage for embracing SD initiatives. The achievement of these changes is possible through leadership commitment and the embrace of green values by the entire organisation. Ethical leadership (Zhu et al., 2019) that promotes high moral standards is likely to cause transformation towards SD initiatives throughout the organisational structures. Although in some instances documentation of company vision, mission, and values was available, the employees did not understand how they relate to the strategic foundation. One of the research participants said. *"the company vision, mission, and values are at the admin,"* indicating that there were not familiar with the vision, mission, and values of the company they work for.

5.3 Systems and Processes

Another theme developed based on the information in the categories to answer RQ 1 is systems and processes. The improvement of business processes and systems is an opportunity to incorporate SD principles into the business practices in trade effluent-generating industries. These improvements are possible from the strategic levels to the operational levels. Including SD principles in the business systems and processes changes the DNA of the business. Literature has revealed the business' slow uptake of the SD (Clementino & Perkins, 2020; Henry et al., 2019). In response to the slow uptake of SD by the business, Stead and Stead (2019) suggested SSM for the facilitation of the TBL performance goals to balance the financial goals with the environmental and social goals. The industry's business systems and processes are the engine through which performance improvement areas can be identified (Kaplan & Norton, 1996, p.9) to cause a paradigm shift to SD inclusion into the strategic management process hence SSM(Bilinska – Reformat et al., 2018).

Today's businesses need to embrace the SD concept into their business models to align with contemporary challenges. Sustainable innovation is likely to bridge the gap in industry 4.0 as mentioned by Ghobakhloo et al. (2021). Business systems and processes are the gateway to these improvements, which includes waste reduction (Roscoe et al., 2019). Other improvements associated with business systems and processes include production efficiency (Galbreath, 2019; Puglieri et al., 2021), pollution prevention at source (Chan et al., 2021), resource recovery (Rovanto & Finne, 2022) and green innovations (Borland et al., 2019; Shahzad et al., 2021). These improvements are visible in business systems and processes (Engert et al., 2016; Borland et al., 2016). Pedersen et al. (2018) alluded to the relevance in the improvement of business models to align with the SD principles. Generation of information to answer the research question in accordance to this theme is under three categories: Quality Management System, Environmental Management System, and Occupational Health & Safety.

5.3.1 Quality Management Systems

The industries chosen for this study are manufacturing industries with a clear focus on quality management systems. The approach to implementing a quality management system varied for the three industries selected for this study. Quality management has a direct impact on the economic pillar since customers prefer high-quality products. The textile industry that produces towels primarily for the hotelier industry is highly committed to a quality management system guided by ISO 9000:2015. Clear quality objectives are included in the strategic business goals. The company has in place a clearly documented a quality management system that is auditable through both internally and externally audits. The company promotes the use of standard operating procedures to meet customer expectations. Commitment to quality by this company is not necessarily for the promotion of the SD pillars. The focus of the industry is on profit making through customer loyalty.

On the other hand, the brewery is implementing the voyager plant optimization (VPO) that integrates several systems such as safety, quality, environment, management, maintenance,people, and logistics. The brewery is also highly committed to the implementation of a quality management system. The quality management activities conducted at the brewery includes adherence to quality assurance and quality control procedures, internal audits and application of problem solving skills to identify areas of improvement in the processes. These efforts intend to deliver a high quality product, which advances the economic prosperity pillar. However, by utilizing the VPO and identifying areas for improvement, inclusion of SD initiatives that drive all three pillars is possible. Green innovations (Galbreath, 2019) could be included as areas to improve on and tracked through the VPO. Akramova et al. (2020) has confirmed that Diogo Proenca developed the VPO as a model for managing business process improvement to assess the maturity level of an organisation. Therefore, VPO provides an opportunity for the adoption of green practices such as the Green Human Resources Management (Shahzad et al., 2021).

5.3.2 Environmental Management Systems

The three industries studied demonstrated the implementation of an environmental management system. Documented policies on environmental management were in place especially at the brewery. Controlling industrial processes improves process efficiency. Wastewater pre-treatment facilities installed in all three industries aim to prevent pollution at source. However, the treatment facilities have not functioned optimally to reduce the pollution load at the source. The industries have experienced the release of poor-quality effluent into the sewer system, causing problems at the end of pipe treatment. An auditable environmental management system is an opportunity to facilitate the inclusion of SD initiatives into the industrial processes to improve production efficiency. End-of-pipe solutions have proven not to be effective, resulting in pollution problems. Management scholars have also observed that proactive environmental strategies enhance performance compared to reactive

environmental strategies (Chan et al., 2022).

Companies to avoid penalties from the regulatory authorities have done mostly environmental management practices. This must change, and the industry must take a proactive approach to non-regulated environmental practices (Tatoglu et al., 2020) for competitive advantage. Voluntary practices such as responsible care (Beerannavar, 2020; Ghobakhloo et al., 2020), global certification scheme following ISO 14000(Shahzad et al., 2021; Wang & Mao, 2020), and other innovative (Roscoe et al., 2019; Shahzad et al., 2021) ideas on corporate environmental practices are likely to facilitate the uptake of SD by the industry. The trade effluent industries studied in this multi-method qualitative study could not demonstrate the voluntary environmental practices performed by the industry for good governance. Most of the environmental management initiatives implemented are for compliance with the regulations and for achieving economic goals. Striving for a global certification such as the ISO 14000 is a voluntary environmental management practice (Tatoglu et al., 2020) which is also an effective tool for improving sustainable development (Wang and Mao 2020). However, for the industries selected for the study, the maintenance of an auditable environmental management system may be costly. Previous studies have indicated that maintaining an EMS certification and ISO 14001 standard requires making constant improvements, which in turn requires continuous investment increasing operating costs (Chan et al., 2022; Tatoglu et al., 2020). The industries may have to replace outdated equipment and technology with new environmentally friendly versions and buy green raw materials that are costly.

5.3.3 Occupational Health & Safety

Occupational health and safety systems were prominent in two of the industries studied. In both these industries, safety in the workplace is highly regarded, with some officers designated to championing safety issues. However, the integrative approach to the implementation of environmental

and occupational health and safety systems was found missing, supporting the fact that core business functions and sustainability functions are fragmented (Rego, Pina e Cunha& Polonia, 2015, Henry et al., 2019; Rego et al., 2015), making it difficult to balance the SD pillars for the business. Research participants mentioned the NOSA standards, and the document reviews verified the same. Slogans such as *"Safety First."* depicts vigorous promotion of occupational health and safety procedures All three organisations promote occupational health and safety by providing PPE to the workers, adherence to procedures and protocols in designated work areas, chemical management, and complying with health and safety protocols, including the COVID-19. Robust implementation and monitoring of occupational health and safety is an opportunity to increase the uptake of the social pillar by the business. The uptake rate of the social pillar is slower than the other two pillars of SD (Tate & Bals, 2018).

5.4 Stakeholder Engagement and Innovation

Stakeholder engagement and innovation is another theme developed from the multi-method qualitative case study to answer RQ 1. Stakeholder engagement stimulates innovations for problem-solving, leading to green strategies and the setting of green goals (Dhopte & Sinha, 2016; Roscoe et al., 2019). These problem solving strategies, including pollution prevention, may accelerate the inclusion of SD principles into business practices. Akhtar et al. (2018) have supported that green innovations are necessary for pollution prevention. Ghobakhloo et al. (2021) have posited the importance of innovation in the industry to align with the technological changes and the environment. A broad range of stakeholders may increase innovation on how to engraft the SDGs into the business strategies for the industry. The trade effluent-generating industry described a wide range of stakeholders, including the shareholders, the regulatory authorities, and the suppliers. The categories that formulated this theme are knowledge of SD, stakeholder relationships, innovation, and communication of the SD initiatives.

5.4.1 Knowledge of Sustainable Development

The results are an indication that the industry appreciates the SD concept, but the level of awareness about the concept is very low, where the majority of the research participants could not explain the meaning of the SD concept nor state the intentions of the agenda 2030. This lack of understanding by the employees regarding the global challenges (Doh et al., 2017; George et al., 2016) hinders the inclusion of the SD principles into business practices. Continuous learning (Feeney et al., 2022) changes organisational culture and adapts the organisation to changes. Ignorance by the industry of the SD agenda expectations is likely to cause some irresponsible care (Martinez et al., 2017) that may affect the business' standing in the future. The adverse effects of the business on future generations are likely to affect the prospective business owners and stakeholders (Jones et al., 2018, Shrempf-Stirling et al., 2016). Sharing of information and knowledge on SD initiatives with internal and external stakeholders can potentially increase green business behaviours and practices in the industry. These green behaviours and practices, once discharged by the industry, will cause social change in the communities.

The interactions of the businesses with the external stakeholders is low, especially with the adjacent communities. The expectation is for the industry to get feedback from the community about the industry's impact on society and the environment on regular basis. Feedback, either positive or negative, is essential for the industry to improve its processes. The three industries studied could not adequately demonstrate the stakeholder engagement channels and activities. Collaboration, community service, reports to regulatory authorities, and public relations activities, are some of the channels used to communicate with the stakeholders. Improvement of these communications is essential to create awareness of the SD initiatives across the organisational structures. The industry has put in place many channels internally through which the dissemination of SD initiatives and the

identification of areas of improvement is possible. These internal channels are informal discussions, monthly reports, suggestion boxes, meetings, emails, worker's committees, etc. The use of these channels is likely to improve communication of the SD initiatives between the internal and external stakeholders.

5.4.2 Stakeholder Relationships

Stakeholder engagement enhances the stakeholder relationships with the present and future generations (Jones et al., 2018; Borland et al., 2016; Shrempf-Stirling et al., 2016). Good stakeholder relationships enhance company reputation (Horak et al., 2018; Walsh & Dodds, 2017) hence the company branding (Borland et al., 2016). Eco-friendly products (Borland et al., 2019; Ghobakhloo et al., 2021) delights the customer and the stakeholder reducing pressure and concerns (Adomako et al., 2022; Montiel et al., 2020). Therefore, stakeholder collaboration is an opportunity to improve product performance and devise pollution prevention strategies. Pollution caused by the industry due to wastewater discharge has the potential to affect the industry's relationship with the community, affecting the business performance. To buttress this point Montiel et al. (2020) have also posited the importance of stakeholder collaboration in solving pollution challenges.

The involvement of the stakeholders is a sign that the industry respects the interest of its stakeholders. Stakeholders are aware of the global challenges and because of that, there are bound to exert a lot of pressure on the business. Therefore, the industry has to re-focus to address the stakeholder demands. Crifo et al. (2019) has indicated the importance of balancing the stakeholder interests for the prosperity of the business. In this case, the trade effluent-generating industries have to embrace all the stakeholders going beyond the boundaries of the respective companies. Stakeholder pressures influences the strategic orientation (Cop et al., 2020; Tatoglu et al., 2020) of the business. The inclusion of the SD in the business practices in a balanced manner is a responsible care that may retain

customers and build trust with stakeholders (Etse et al., 2022). Previous studies have revealed that Ford and General Motors have suffered the consequences of the irresponsible care of their former leaders in the past (Martinez et al., 2017).

5.4.3 Innovation

Stakeholder engagement and collaboration increases creativity and innovation for the businesses to solve SD challenges. Sustainable innovation is a proactive strategy for pollution prevention at source (Beerannavar, 2020). End of pipe solutions for pollution prevention for these industries have proven not to work and the adoption of corporate green innovations is likely to improve the situation. Chan et al. (2021) has supported pollution prevention strategies for the industry as opposed to the end of pipe control of pollution. Trade effluent-generating industries have a challenge to prevent pollution at source proactively to accelerate the achievement of the SD agenda. This can never be possible without creativity and innovation to include green practices in strategic corporate and operations. Wang et al. (2021) has also supported the promotion of green innovations for SD.

Trade effluent-generating industries have demonstrated the opportunity for green innovation inclusion in the corporate strategies and business operations. Strategic inclusion of the SD initiatives at corporate level has the potential to solve pollution problems caused by the industrial effluents. The industry is currently implementing good initiatives that drive the SD agenda such as the 3Rs (recycle, re-use & recover) turning industrial waste into a resource where pieces of cloth from the textile industry is used to make pillows in another industry. The brewery indicated the potential for waste to energy initiatives where energy generation from bran is a possibility Eco- Innovations such as cleaner production, waste reduction, energy efficiency (Borland et al., 2019; Shahzad et al., 2021) and the use of green technology(Ghobakhloo et al., 2021) are some of the initiatives available for the industry. A study conducted by Shahzad et al. (2021) in Pakistan has recommended corporate green innovation to

accelerate sustainable development practices for the industry. This multi – method qualitative case study also recommends the adoption of corporate green innovation by the trade effluent-generating industry in Botswana to prevent pollution at source by reducing the industrial waste.

Innovation is an internal capability that can help the industry to leverage industry 4.0. Ghobakhloo et al. (2021) has supported the inclusion of SD thinking in innovative practices to adopt the use of technology to streamline green processes. Innovation is greatly influenced by knowledge (Shahzad et al., 2021) and this knowledge can be gained through stakeholder engagements, informal and formal training. The research participants in this multi – method qualitative study indicated the importance of acquiring new knowledge to solve problems at industry level. The importance of knowledge acquisition was evidenced in the statement by a research participant *"I will make sure that I do some researches"* demonstrates the importance of knowledge acquisition for these industries. Research and development at industry level would generate new knowledge for application in problem solving. This may include the improvement of the VPO to include sustainability and COVID 19 pandemic as well as some improvements on the wastewater pre-treatment facilities to reduce the pollution load at industry level.

5.5 International Business

Another theme derived from the multi – method qualitative case study is international business to answer RQ2. RQ2 read as, *"What are the challenges faced by the trade effluent-generating industries when balancing financial gains with environmental protection and social development?"* The intention of the research question was to explore the challenges faced by the industry in SD application. The brewery is a multinational company governed by the global company corporate strategy while the two textile industries are local but export their finished products to the international markets. Therefore, the three industries studied in this multi-method qualitative case study are affected

by international business. A gap in scholarship was identified for IB (Montiel et ta., 2021; Nambisan et al., 2019; van Tulder et al., 2021), and the results obtained in this study may be used to advance research in IB and SD. IB affects companies in developing countries where they have to export their products to developed countries competing with more advanced companies for customers. The theme on international business was constructed from codes grouped under globalisation and international markets.

5.5.1 Globalisation

The flattening of the natural boarders due to globalisation (Agarwal & Qouyatahi, 2017), brings both the challenges and the opportunities to the business in the growing economies (Okaro et al., 2018). The SD concept is a global challenge (Doh et al, 2017; van Tulder et al., 2021) that requires the business to align with the expectations of the agenda 2030 (Dobrovolska, 2018; George et al., p 2016). The 17 SDGs currently guides the SD agenda and translating these goals into action is a challenge for the business because the goals are set at the level of national governments (Montiel et al., 2021). However, the business sector has to figure out on how to integrate these goals in their business practices.

The requirements set by the international community exert pressure on the local business that needs to meet the international standards for their products acceptance by the international markets. Pollution generation due to industrial wastewater discharge may render goods produced by these industries not fit for export to the global markets. Therefore, these industries have a challenge to think globally while they act local (Goworek et al., 2018). Implementation of the international standards to meet the requirements of the global community is putting pressure on the resources within these industries. The industry has demonstrated appreciation in the use of international standards such as the better cotton initiative (BCI), adherence to the green economy, community of practice and the use

of ICT for positioning. The industries need the competencies and the resources in place for adaptation (Ahammad et al., 2021) to the global requirements. Previous studies have proven that the developing countries face more challenges in the practice of the SD agenda (Akhtar et al., 2018; Shahzad et al., 2021).

5.5.2 International Markets

Globalisation though it brings some challenges to the companies in the developing countries (Okaro et al., 2018) it also provides an opportunity for international markets (Ihemezie et al., 2018). However, businesses in developing countries have to compete for markets with the developed countries, which is a big challenge. According to Stead & Stead (2019), a company can differentiate its products in the market by using sustainability strategies that are process-driven and demand-driven and customers prefer green products (Galbreath, 2019). Pollution prevention at source, the use of cleaner production and the adoption of green innovations and culture maybe an advantage for the industries to penetrate the international markets.

The multi-method qualitative case study, has mentioned that competition for the international markets is a threat for the businesses, especial competition for markets in Asia, US and Europe. These calls for a differentiation of products to win the global markets; hence corporate green innovation (Roscoe, 2019; Shahzad et al., 2021) may address this problem. The textile industries investigated under this study export their finished products to the international markets in Africa, USA, Asia, and Europe. Closure of boarders due to the outbreak of the COVID-19 pandemic affected sales to these markets enormously. The industry could not import the raw material nor export the finished goods due to the national lockdowns. Support from the local markets is minimal due to the preference of merchandise from abroad by the locals. The adoption of the industry 4.0 technological innovations such as big data analytics (Ghobakhloo et al., 2021) is an opportunity to overcome the challenges in

the global markets by increasing sales and breaking through the COVID 19 challenges.

5.6 Challenges & Opportunities

The last theme from the multi-method qualitative case study is Challenges and Opportunities. This theme addresses both RQ2 and RQ3. RQ2 explored the challenges faced by the industry on the application of SD, while RQ3 intended to explore the benefits derived by the industry from the application of SD principles. The grouping of data codes was into two categories, which are challenges and opportunities. There are many challenges facing the trade effluent-generating industries. These range from meeting global standards, penetrating the international markets, and meeting the demands of stakeholder pressures, and the local markets. Along with these challenges are opportunities for business growth, improved stakeholder relationships, competitive advantage, and business sustainability.

5.6.1 Challenges

Previous studies have revealed many challenges faced by the industry regarding the integrative approach to imbed the SD principles into business practices (Clementino & Perkins, 2020; Montiel et al., 2021; Rego et al., 2015). These include fragmentation between the sustainability and other business functions, lack of commitment by the business leadership, and shortage of appropriate skills for the integrative approach (Akhtar et al., 2018; Henry et al., 2019; Mio et al., 2020. Akhtar et al. (2018) have confirmed shortage of human skills in developing countries worsened by the migration of human resources skill to developed countries (Majidi, 2017). Strategic management and leadership competencies are required to break through the barriers of culture and diversity of skills (Boone et al., 2019) and variety in top management teams are essential to enable higher levels of TBL performance(Henry et al., 2019).

The industry in Botswana experience the same challenges. These challenges are a hindrance to the adoption of the SD principles in business practices at all levels in the industry. Responsible leadership (Jaena et al., 2021; Roscoe et al., 2019) is essential to translate the SD principles into actions (Montiel et al., 2021) and transform businesses (Borland et al., 2019). Responsible leadership learning that mainstreams SD principles into leadership and management training is likely to overcome these challenges. The industry has indicated shortages in specialized skills that are required for the weaving of the SD principles into business practices. Poor supervisory skills are also a challenge for the industry, especially since the studied industries are blue-collar job industries. The industries are experiencing some internal problems, such as budget constraints, organisational cultures, and lack of compliance of industrial effluents to national discharge standards. Non-compliance of the industrial effluents to the national discharge standards contributes to the global challenge. SDG6.3 states that "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally" (Essex et al., 2020). Pollution prevention at source is likely to improve the product value chain (Verbeke, 2020) for the studied industries when taken into consideration.

5.6.2 Opportunities

The adoption of the SD principles by the industry has many benefits, which include business longevity, improved stakeholder relationships resulting in company reputation, cleaner production, resource efficiency and reduced pollution at industry level. SD practice by the industries is likely to sustain the businesses and create jobs for the future generations. Job creation for the present and the future generation is a strategic pillar for Botswana's development agenda. Therefore, business longevity is a socio – economic benefit for the communities adjacent to the industries and for the prosperity of the nation of Botswana. Benefits such as pollution prevention (Ciliberto et al., 2021;

Chan et al., 2021), business sustainability (Benkert, 2021; Ghobakhloo et al., 2021) and competitive advantage (Tollin & Christensen, 2019; Shahzad et al., 2021) were revealed by the previous studies. In this study, the research participants confirmed the benefits of SD in business in statements such as *"Pollution prevention will give us a good name", "SD will help to create jobs for the present and future generations", "SD will help the entire nation".*

Ghobakhloo et al. (2021) confirmed the benefits accrued through SD practice as constructive relationships with internal and external stakeholders, identifying business areas for long-term value, mitigating socio environmental risks, attracting investment, and building brand reputation. The same sentiments resonates with the findings of this study. An ecocentric perspective is required to facilitate corporate green innovations and strategic green thinking. Stead and Stead (2019) suggested SSM as an improvement to traditional strategic management for the facilitation of TBL thinking throughout the organisation. Stead and Stead(2019)'s SSM was supported by Takacs et al.(2022) who stated that the adoption of SSM supports the circular economy by creating value, reducing waste and promoting cleaner production. Trade effluent-generating industries may also consider the practice of SSM to facilitate the TBL performance goals in their organisations. The adoption of SSM may improve the integrative approach for the SD practice by the industry. Rubio – Mozos et al. (2020) have developed a sustainable strategic management model for the hotel industry to facilitate the uptake of the SDGs using the slogan "Walk the Talk".

5.7 Limitations of the Research Study

The limitations of the research study are noted in Chapter 1 as limited research on the theory of SSM that was suggested by Stead & Stead(2019) for the improvement of the traditional strategic management and the advancement of Elkington's TBL performance framework(Carmine & De Marchi, Ciliberto et al., 2021) in 2008. Stead and Stead (2019) believed that SSM was essential for

the uptake of the SD pillars by business through the facilitation of the TBL performance. Literature on the SD theory and the TBL performance is adequate and there are limitations in literature on the theory of SSM. There were few publications found on the theory of SSM. Takacs et al. (2022) have commended the theory of SSM for the balance of the SD pillars for the business while Rubio – Mozos et al. (2020) have developed an SSM model for the hotel industry based on Stead and Stead (2019)'s SSM. Researchers are beginning to appreciate the theory of SSM and are putting it into practice to facilitate the uptake of SD practice for the business.

The study used a multi – method qualitative case study that is not generalizable. The study area was Francistown region in Botswana in Southern Africa and the focus of the study was on trade effluent-generating industries. The purpose of the study was to explore a phenomenon by studying the practice of SD by the industry in a normal setting. This study is not generalizable to other industries but it is generalizable for the cases studied in this qualitative case study. However, the results obtained in this multi –method qualitative case study are transferable to other situations or other management set-ups. The study period coincided with the COVID -19 pandemic when there were movement restrictions imposed in the country. The study used a speaker telephone to perform semi-structured interviews denying the interviewer the opportunity to be in the same space with the interviewees. Document reviews complemented the results obtained from the semi – structured interviews.

Qualitative data collection is categorised into interviews, documents, observations, and audio-visual materials (Marshall & Rossman, 2016, p.141; Creswell, 2016, p. 113). There are different forms of interviews, which are; face to face one-on-one, in person interviews, telephone interviews, focus group in person or online, online interviews using e-mails, chat rooms, bulletin boards, instant messaging etc. In this qualitative case study, COVID 19 that restricted movements in the country

hindered in person interviews. Focused group discussions online could have been an option, but it was not possible due to poor internet connectivity in Botswana and lack of access to ICT equipment by the research participants. COVID -19 protocols hindered the physical observations due to restricted movements in the country imposed by the national lock downs. Data collected from the document reviews enriched data collected from the semi-structured interviews.

Employees in blue-collar jobs are mostly semi – skilled with limitations in understanding of national policy requirements and global concepts. The majority of the research participants had limitations in the knowledge of SD and this could affect the research study. The use of interview protocols guided the interviews making sure that the research participants understood the questions to provide the answers to the best of their abilities. Translation of the research questions into Setswana where there was need enhanced understanding of the research questions by the research participants. Limitations in knowledge and understanding of the SD theory by the research participants did not hinder the achievement of the study. The researcher used the interview questions derived from the research questions to probe the research participants for more information to answer the research questions.

5.8 Summary

The qualitative data analysis resulted in six themes to answer the three central research questions. These are (a) TBL performance framework; (b) leadership and governance; (c) systems and processes; (d) stakeholders and innovation; (e) international business; and (f) challenges and opportunities. The first four themes answered RQ 1 that explored the embedding of the SD pillars into business practices is answered by international business, and the theme on challenges and opportunities answered RQ 2 that explored the challenges faced by the industry in SD application and RQ 3 that explored the benefits derived from the SD application. SD uptake in trade effluent-generating

industries is low due to business bias towards profit making, lack of leadership and management competencies to transform businesses towards green practices, and low levels of internal and external stakeholders' engagements. However, there are benefits associated with SD application such as business sustainability, pollution prevention, and employment creation for both the present and future generations.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

Major trade effluent-generating industries in the Francistown Region in Botswana have not fully adopted SD principles as business practice. The bias by the industries is towards profit making than the protection of the environment and the communities where they operate. The industry requires a paradigm shift to embrace the SD principles in all the facets of the organisation at both strategic level and operational level. The history of these industries is that they have consistently failed to produce effluent quality that complies with the Botswana national wastewater discharge standard (BOS 93:2012) for over 20 years. This has caused a pollution threat to the quality of the environment and to the health of the people who reside in the proximity of the operations. Engineering and Scientific interventions such as pre-treatment of industrial wastewater before discharge into the main sewer line have not yielded positive results. Failure to produce good quality effluent through the application of engineering and scientific interventions has prompted for a different approach to solve the problem of non-compliance to national wastewater discharge standards by trade effluent-generating industries.

Effluents released by these industries constitute aggressive chemicals that affect the biological treatment of wastewater at the end of the pipe. Previous studies have advocated for proactive SD initiatives to reduce the reactionary end of pipe solutions (Chan et al., 2022; Tatoglu et al., 2020). Effluents generated from the manufacturing industries are the main sources of water pollution worldwide(Ata & Tore, 2019; Bhatia et al., 2017; Peng et al., 2017). Non-compliance of trade effluents with the set standards for discharge is a violation of pollution prevention strategies, hence negating the aspirations of the agenda 2030 on SD (Alexus & Furusten, 2020; Tesfaye & Fougere, 2021). The intention of the agenda 2030 is to end poverty, protect the environment, and promote social welfare (Dobrovolska, 2018; Doh et al., 2017; Joseph et al., 2020; Mio et al., 2020). Therefore,a re-focus from profit making to balance the economic goals with the benefits to the planet and the people

(Ahammad et al., 2021; Carmine & De Marchi, 2022; Han et al., 2018; Horak et al., 2018) is required for the industry. The strategic corporate balance of the SD pillars by the trade effluent-generating industries is a sustainable solution for pollution prevention at source. The strategic agility (Ahammad et al., 2021) supports proactive implementation of SD initiatives that concentrates on modifying the design of operational processes to prevent the creation of pollutants on the outset (Chan et al., 2021; Wang & Mao, 2020).

The adoption of Elkington's TBL performance framework (Ciliberto, 2021; Dzhengiz & Niesten , 2020) is an opportunity for the industry to balance financial goals with environmental and social goals. Currently the bias is on economic goals and some effort on environmental goals is noticeable for the purposes of compliance to regulations (Roscoe et al., 2019; Wang & Mao, 2020). The social goals are lagging behind when compared to the other two pillars supporting the findings of the previous studies (Montiel et al., 2020; Pedersen et al., 2018; Tate & Bals, 2018). Industrial processes are never without pollution problems due to wastewater discharge and air emissions (Dobrovolska, 2018; Hosta & Zabkar, 2021; Lamb et al., 2017; Villamil et al., 2021). As a result, the industry has to consider the negative impacts on the natural environment and the welfare of the people proactively (Chan et al., 2021).

The purpose of this multi method qualitative case study was to investigate business practices in three (3) major trade effluent-generating industries in the Francistown region in Botswana to explore the integration of SD principles at various management levels and recommend solutions for improvement to the industry and the Botswana Government. The integrative approach on the SD application for the industry is lacking. The enhancement of the integrative approach is possible

through the accelerated uptake of the TBL performance framework, improved leadership, and governance, cleaner production through the improvement of systems and processes as well as stakeholder engagement and innovation. The industry has to adopt these as part of the business strategy and practice. Limitations in internal capabilities, threats posed by globalisation, and access to international markets are some of the challenges that face the trade effluent-generating industries in Botswana. However, there are socio- economic benefits that are associated with the application of the SD principles in trade effluent-generating industries including pollution prevention, resource efficiency, and competitive advantage.

SSM (Rubio – Mozos et al., 2020; Takacs et al,) suggested by Stead and Stead (2019) for the facilitation of SD into the business strategy is the new paradigm shift for the 21st century business. The adoption of SSM by the industry as an integrative approach advances the SD theory that aims at economic prosperity, environmental protection and social development (Joseph et al., 2020; Montiel et al., 2020). SSM improves the traditional strategic management to align with the global challenges (Bililinska-Reformat et al., 2018; Henry et al., 2019). SSM (Murray et al., 2017) is a strategic approach that may help to prevent pollution at its source by promoting proactive corporate efforts on SD application (Chan et al., 2021; Tatoglu et al., 2020). The practice of SSM by the industry is an opportunity to balance competing priorities of the financial goals, environmental and social goals. Previous studies indicated tension in the balance of these SD goals (Dzhengiz & Niesten, 2020; Joseph et al., 2020) and most of the time environmental and social goals are a means to achieve economic goals (Benkert, 2021; Carmine & De Marchi, 2020). The industry needs a paradigm shift to remove bias towards the achievement of economic goals, but also consider benefit creation for the society and the environment (Edwards, 2020; Shahzad et al., 2021).

The study has revealed some areas of improvement in policy development and SD practice. Policy aspirations formulated at the national level have to be actioned by the various stakeholders, including the private sector, for national prosperity. The business community has experienced challenges in turning the SD agenda into action (Chan et al., 2021; Clementino & Perkins, 2020) and has called for guidance from the policymakers (Henry et al., 2019; Montiel et al., 2020). The study guides business, especially the trade effluent-generating industries, on SD practice supporting the agenda 2030 on SD and the WBCSD vision 2050. There are research gaps identified in grand challenges (Carmine & De Marchi, 2022; van Zanten & van Tulder, 2018) and international business (Montiel et al., 2021; van Tulder et al., 2021). Future research will bridge this gap and contribute positively to improving the uptake of SD practices by the trade effluent-generating industries. As a result the multi-method qualitative case study has recommended solutions for application by the industry and has also identified opportunities for future studies

6.1 Recommendations for Application

The multi – method qualitative case study is recommending a model (Fig 7) for application based on the SSM (Stead & Stead, 2019) integrative approach for adoption by the trade effluent-generating industries. The model when adopted will strategically facilitate the inclusion of SD principles into business practices at all levels. Stead and Stead (2019) suggested the SSM approach as an improvement to traditional strategic management to cater for the eco-centric view (Borland et al., 2019) of the business. Elkington suggested the TBL performance framework (Ciliberto, 2021; Dzhengiz & Niesten, 2020) after the Rio Summit of 1992 to include environmental protection and social development in business at strategic level. The uptake of the SD principles by the business has been low even after the introduction of the TBL performance framework by Elkington in 1992. Stead and Stead (2019) then suggested SSM in 2008 to facilitate the uptake of the TBL performance framework by the business. Stead and Stead (2019)'s SSM theory and practice advocates for the

transformation of the traditional strategic management theory to align with the challenges brought by the SD agenda to the business.

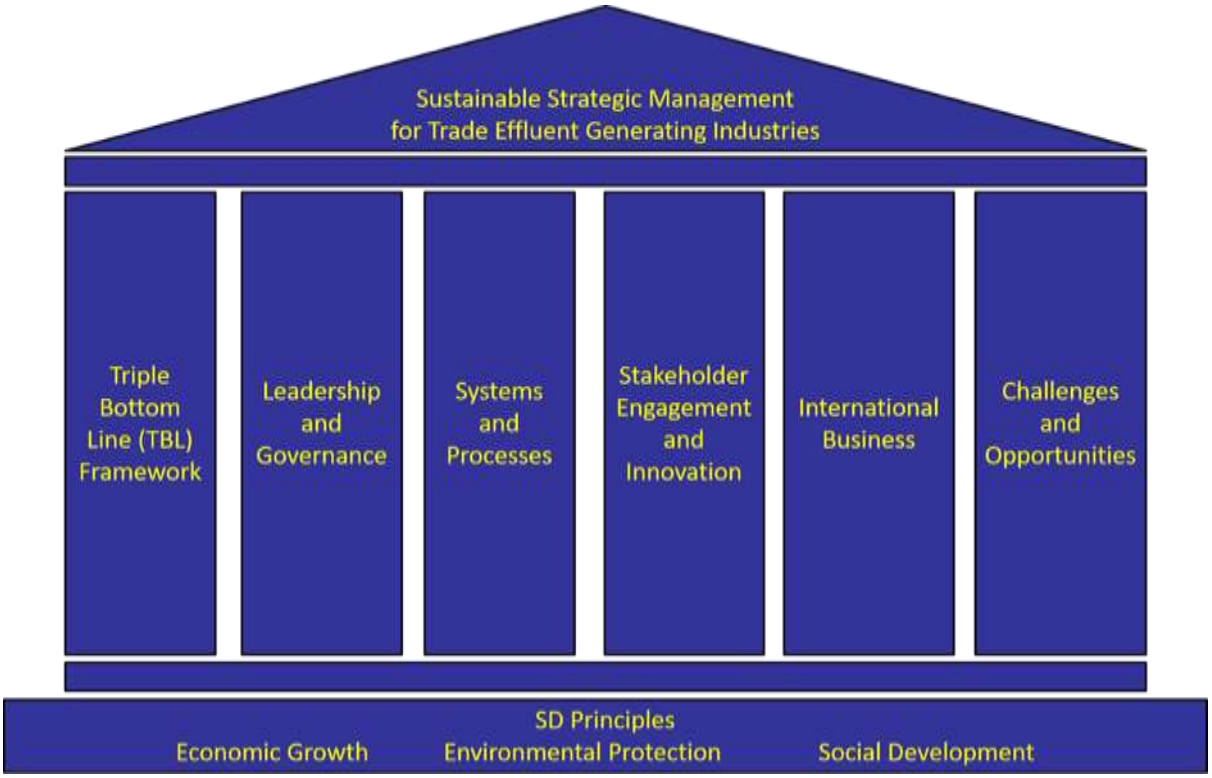
SD principles of economic growth, environmental protection, and social development form the foundation of the suggested model. The industry need to strike a balance between the three pillars of SD to improve on economic performance and at the same time adding the environmental and the social value. SD thinking at corporate level influences green management and leadership as well as corporate green innovations. This green strategic thinking is very critical for the facilitation of green practices at operational levels. The norm has been to investigate the operational processes for pollution and recommend solutions to the industry and to the government for improvement. Concentrating on the manufacturing operational processes created a gap between the decision-making and the practice at operational level. The study recommends six strategic areas, which are the TBL performance framework, leadership and governance, systems and processes, stakeholder engagement and innovation, international business and challenges and opportunities, to the trade effluent-generating industries to connect the corporate strategic thinking and the operational processes.

The multi – method qualitative case study generated six themes that formed the assertions regarding the practice of SD in trade effluent-generating industries. These six themes are the strategic areas needed by the industry to practice SD at all management levels. Blending these strategic areas through the SSM theory and practice will increase the integrative approach of SD for the trade effluent-generating industries. Elkington's TBL performance framework has not successfully cultivated sustainability into the business practices (Clementino & Perkins, 2021; Yekini et al., 2019). The SSM approach suggested by Stead and Stead (2019) has the potential to improve the integrative approach on SD application targeting all levels of management. TBL performance framework is the main

strategic area that balances the economic goals with the environmental and social goals. Other strategic areas, which are leadership and governance, systems and processes, stakeholder engagement and innovation accelerates the uptake of TBL performance framework into business practices. The six strategic areas are converged at corporate level through sustainable strategy formulation, planning and thinking. Application of sustainable strategic thinking and planning influences business practices at functional and operational levels. The model guides the industry on the required internal capabilities to enable the integrative approach for efficient and effective SD practice. However, the industry has to position itself constantly for the external challenges and opportunities that may arise due to the global challenges. These may include changes in the external environment as well as technological advancements.

Figure 7

SSM: Application Model for Trade Effluent-generating Industries



*Note.*A model developed to guide trade effluent-generating industry on SD application. Six

strategic pillars facilitates the inclusion of SD in business practice. Industry adopts the SSM integrative approach to balance the uptake of the SD pillars.

The developed model provides guidance to the trade effluent-generating industries on how to apply SD in the business practices. Previous studies revealed lack of practical knowledge on the practice of SD by the business (Clementino & Perkins, 2021; Henry et al., 2019). The qualitative case study has demonstrated that trade effluent-generating industries have appreciated the SD concept as an opportunity to leverage the business. The industries are currently using different approaches to integrate SD strategies into their business practices based on their management set-ups. The suggested model provides guidance for the trade effluent-generating industries to achieve an integrative approach in SD practice. Strategy formulation and planning for the trade effluent-generating industries should take into consideration the six strategic areas derived from this study as part of the corporate strategic goals. The integrative approach through the adoption of SSM ensures SD practice throughout the business management levels, which are corporate, competitive, and functional reducing the focus on the end of pipe solutions for pollution prevention.

A study conducted by Takacs et al. (2022) influenced the generation of this model to cultivate SD practice in trade effluent-generating industries. Takacs et al. (2022) supported the circular economy for small and medium –sized enterprises and their integration in a sustainable strategic management framework. The study adopted the same approach in the generation of this model for trade effluent-generating industries. The six strategic areas are the themes derived from this multi method qualitative case study as the practice that needs adoption by the industry to increase the uptake of SD. Integration of these strategic areas into Stead and Stead (2019)'s SSM concept is viewed as a strategic solution for pollution prevention by the trade effluent-generating industries. Takacs et al. (2022) have mentioned problems of pollution by the textile industry worldwide that needs sustainable

solutions such as closing resource loops and cleaner production with less emissions and reduced pollutants in wastewater discharged. Trade effluent-generating industries are currently investing on the end of pipe solutions through the building of pre-treatment facilities to reduce the pollution load before industrial effluent discharge, which has not yielded good results.

Chan et al. (2022) supported a strategic approach for pollution prevention by suggesting proactive SD initiatives to reduce the reactionary end of pipe solutions. A prevention-oriented approach is concerned with proactively preventing the formation of pollutants outset. In contrast, control-oriented approach is concerned with properly adequately treating and disposing pollutants after their creation (Chan et al., 2022). Therefore, the expectation is for the trade effluent-generating industries to shift their focus from treating pollution after formation to transforming the operational processes to prevent the formation of pollution. SSM (Stead & Stead, 2019) provides the industry with the opportunity to proactively include pollution prevention strategies and reduce end of pipe solutions. SSM transforms the traditional strategic management to include sustainability issues (Rubio – Mozos, 2020; Takacs et al., 2022) in strategic thinking and strategy formulation (Ahammad et al., 2021; Henry et al., 2019). Rubio – Mozos et al. (2020) developed an SSM model for the Hotel industry to facilitate the uptake of the SDGs by the tourism industry. New and sustainable business models are required to refocus the business of the 21st century to meet the needs of the environment and the people. The strategic areas identified by this qualitative case study will practically advance the uptake of SD by the trade effluent-generating industries accelerating the achievement of the SDGs.

6.1.1 Strategic Area 1: Triple Bottom Line (TBL) Performance Framework

The TBL performance framework ensures the balance of the financial goals with environmental and the social goals. Strategic goals that drive the economic performance require a balance with those that add environmental and social value. Strategic planning and formulation for

the trade effluent-generating industry should include these goals in equilibrium. The adoption of Stead and Stead (2019)'s SSM provides an opportunity to integrate these goals. Rubio-Muzos (2020) has confirmed the importance of SSM in enhancing the integrative approach and transforming the business from the triple bottom line to the triple well-being. This requires a deliberate effort at the highest decision making level in the business to plan and allocate resources to deliver TBL performance for the industry. The qualitative case study has revealed that trade effluent-generating industries are challenged by the balance of the 3 P's (People, Profit and Planet). The current focus of the industry is profit making for survival and non-financial goals such as environmental protection and social wellbeing of the people is not a priority.

A strategic area on TBL performance enables target setting and monitoring of economic goals as well as environmental and social goals. The tandem setting and monitoring of these goals is essential for balance in allocation of resources. The adoption of the SSM approach enhances the integrative strategic planning for economic prosperity with environmental protection and social development. Currently the pursuance of environmental protection activities is to meet the regulatory requirements and not necessarily for value addition. Performance measurement and monitoring for the industry lacked the social goals that drive the staff welfare and the stakeholder engagements. Philanthropic activities such as community service characterized the social goals. Previous studies have confirmed the contradictions between the financial performance goals and the environmental and social goals (Henry et al., 2019; Joseph et al., 2020) which needs convergence and balance. TBL performance promotes green and eco-friendly strategies as well as technologies that develop eco-friendly products to alleviate climate change risks and environmental pollution (Shahzad et al., 2021).

The industry faces the challenge to balance the TBL performance goals with performance measurement tools for the simultaneous measurement of financial, environmental, and social goals. There is no single and universal standard for measuring the TBL performance (Ciliberto et al., 2021). The gap in the simultaneous measurement of the financial goals, environmental goals, and social goals makes it difficult for the industry to account for the TBL performance. The known strategy-monitoring tool that balances the economic and the non-financial goals is Kaplan and Norton (1996)'s balanced scorecard (BSC). Some studies have attempted the modification of the BSC performance management tool to include the measurement of sustainability issues (Hansen & Schaltegger, 2016; Villamil, 2020). The voyager plant optimization (VPO) implemented by the brewery has the ability to integrate different management systems. The study suggests improvements on the VPO to balance the financial performance goals with the social and environmental performance goals. Currently the balance of the SD pillars of economic growth, environmental protection, and social equity is not precise in the VPO.

The strategic area on the TBL performance framework will bring together the main business functions for strategic goal setting and monitoring. Currently sustainability functions in trade effluent-generating industries are not a priority causing fragmentation with other business functions. These fragmentations have caused the industry to give priority to other strategic business functions such as finance, human resources, marketing, and supply chain. SSM approach, which is integrative, brings the business functions together aligning the facilitation of the TBL to benefit the whole organisation. Fragmentation of these business functions has caused slowness in the uptake of the TBL performance framework by the trade effluent-generating industry. Literature review(Han et al., 2018; Henry et al., 2019) has confirmed the slow pace in the adoption of the TBL performance framework by the business.

Therefore, integration of sustainability function with other strategic business functions is a window for fast tracking TBL performance in the business. The industry currently views sustainability as a voluntary best practice and not a strategic function for business value addition. SSM concept as suggested by Stead and Stead (2019) is eco-centric supporting the circular economy (Takacs et al., 2022). The adoption of SSM by the industry as an integrative approach embraces sustainability as a core strategic function.

The strategic area on TBL performance framework will improve monitoring of the adoption of the SD agenda by the industry and by the policy makers. Countries have made commitments on the SD agenda and these commitments are included in the national priorities. The Botswana Vision 2036 "Achieving National Prosperity" and the Africa agenda 2063 "The Africa We Want" are the national and the continental strategies based on the SD agenda respectively. Performance by all the actors including the private sector contributes to the cumulative national achievement of the SDGs. Strategic inclusion of the TBL performance goals by the industry provides the basis for performance monitoring by the regulatory authorities. At the moment environmental protection activities such as inspections and audits of industrial processes provides the basis for SD performance monitoring in trade effluent-generating industries. This does not necessarily link the environmental protection performance goals with the economic prosperity and the social welfare performance goals. Considering TBL performance as a strategic area as depicted by the model (Figure 7) enhances the simultaneous measurement and monitoring of performance goals that contribute to the support of the SD pillars.

6.1.2 Strategic Area 2: Leadership and Governance

Leadership and governance is an essential driver for achieving SD practices in trade

effluent-generating industries. Appropriate leadership competencies and good governance structures are required for Botswana's trade effluent-generating industry to integrate SD principles in business practices from top to bottom. Lack of commitment to the adoption of the TBL performance framework by top management is a cause of poor integration of SD principles in business practices (Henry et al., 2019). The strategic area of leadership and governance commits the leadership to SD practices. This means transformation of the business and refocusing to the new paradigm shift for the 21st century business. Therefore strategic agility (Ahammad et al., 2021; Ivory & Brooks, 2018) and responsible leadership(Jaena et al., 2021; Montiel et al., 2020) are some of the competencies required to drive change by streamlining sustainability into business practices. Setting strategic goals focused at competence development in responsible leadership and management is likely to improve the adaptation of the trade effluent-generating industries to the new changes. Acquisition of green leadership and management skills is an internal capability for the organisations.

Literature review has revealed that companies in Australia have an improved corporate governance due to their embrace of the SD principles (Goergen & Tonks,2019; Mees & Smith, 2019). The practice in these companies is in line with the UN Global compact requirements for the business to adopt international standards on sustainability (Mees & Smith, 2019). Good corporate governance is an advantage to the business, because it promotes good stakeholder relationships (Etse et al., 2022; Martinez et al., 2017). Good leadership and good corporate governance is a strategic area required for SD practices. Leadership has the responsibility to cultivate the changes in an organisation and provide guidance in strategic planning and implementation. Previous studies have demonstrated the importance of leadership commitment in the achievement of SD practices (Henry et al., 2019; Jaena et al., 2020). Leadership skills are required for the motivation of the employees and for providing a

link between the organisation and the external stakeholders. Therefore, strategic goals to deliver green leadership competencies are essential for these organisations to align with the contemporary changes.

This multi-method qualitative study has revealed that although trade effluent industries have embraced the SD principles in their business practices, full integration of the SD principles into the business practices is lagging. Lack of appropriate leadership and management competencies has caused a short fall in integrating SD principles into business practices. Green leadership and Management competencies (Li et al., 2022; Shahzad et al., 2021) are required to implement the changes in these organisations. These changes may curb the fragmentation currently experienced between the sustainability function and other core business functions within these organisations. The adoption of SSM as an integrative approach for SD practices promotes the acquisition of green leadership and management skills suitable for the integration of sustainability function with other core business functions such as finance, human resources, procurement, and marketing.

The industry may need to re-look at its strategic foundation to ensure that sustainability is included as a core value for the organisation. Henry et al.(2019) has posited that the organisation's low uptake of sustainability issues is caused by the fragmentation of the sustainability functions with other core business functions and low commitment by the leadership to sustainability issues. Organisational cultures facilitate organisational change based on the vision, mission, and values as the strategic foundation. Appropriate leadership competencies coupled with green organisational culture are essential for driving SD practices into all facets of the organisation. This includes improving communications and engagements with the external stakeholders.

The acquisition of green organisational culture is an internal capability that distinguishes the organisation apart from the rest(Roscoe et al., 2019). Therefore, leadership capabilities are essential to transform organisations to align with the new paradigm. Organisational cultures that promote values such as trust, fairness, loyalty, care, and respect cement relationships with stakeholders, thus promoting good governance(Goergen & Tonks, 2019; Mees & Smith, 2019). However, implementing sustainability initiatives and reporting is not mandatory but voluntary (Tatoglu et al, 2020). Many organisations worldwide have put in place good objectives on environmental and social initiatives to adhere to the stakeholder pressures (Cop et al., 2020; Tatoglu et al., 2020) without necessarily making changes within the organisation. Adherence to stakeholder pressures through setting strategic goals on SD to window dress hinders the advancement of SD by the industry. Transparency, openness, and precise monitoring mechanisms enable audits to reduce window dressing.

The culture of learning and continuous improvement is an essential element to allow the organisation to adapt to the new paradigm shift. As a result, agility (Ahammad et al., 2021; Ivory & Brooks, 2018) is required in leadership for creativity and innovation to seize opportunities. Organisational learning is the chance to learn new competencies suitable for adaptation to new changes. The external business environment is dynamic. As a result, consistent learning creates new knowledge for continuous business improvement. Therefore, knowledge management is an internal capability and a critical strategic resource for positioning. Constant learning and good knowledge management strategies in place are essential for business process improvement as well as improved services and products (Cunliffe & Scaratti, 2017; Shahzad et al., 2021; Wang & Mao, 2020). The qualitative case study has identified systems and processes as another strategic area necessary to facilitate the integration of SD principles into business practices at all levels.

6.1.3 Strategic Area 3: Systems and Processes

Systems and Processes provide the opportunity to identify areas of improvement. The integrative approach of sustainability issues for the business targeting the improvement of systems and processes has the potential to manage social and environmental impacts at source (Chan et al., 2020). Stead and Stead's (2019)'s SSM concept can link strategic ideas with practice in the systems and processes. There has been a gap between strategic thinking and manufacturing operational strategies. The proposed model (Figure 7) provokes pro-active corporate efforts to improve operational processes than just concentrating on the end-of-pipe solutions. Linking the operational processes with the strategic goals on TBL performance can dissipate SD practices such as the use of eco-friendly active strategies and technologies as well as the development of eco-friendly products. Connection of the strategic goals with operational practices commits the top management to environmental and social value.

Manufacturing processes generate pollution due to emissions and wastewater discharge (Shahzad et al., 2021; Li et al., 2022). The generated pollution has the potential to affect the environmental and the social value and as such, proactive SD initiatives prevent this pollution at source protecting both the ecological and the social value. Cleaner technologies, resource efficiency, modification and the design of the operational processes are some of the SD initiatives necessary for pollution prevention at source. Transformation of manufacturing processes to achieve economic prosperity in tandem with environmental and social value is a commitment to both the top management and the middle management. Kaplan & Norton (1996), in their Balanced Score Card concept identified business processes and systems as the heart of an organisation. Performance improvement to align with the new paradigm transforms business processes and systems with linkages to the corporate strategy. Linking strategic thinking in sustainability with process driven sustainability strategies is a

prevention-oriented approach that prevents pollution from forming at its source. Prevention strategies reduce end of pipe solutions associated with resource depletion, materials use, energy consumption, emissions and effluent discharge (Stead & Stead, 2008; Chan et al., 2021; Wang & Mao, 2020).

Processes drive systems and these systems are commonly the business systems, environmental management systems and the social systems. Trade effluent-generating industries demonstrated the implementation of systems in business management, environmental management, quality management as well as occupational health and safety. These systems are conduits for transferring sustainable business practices within the organisations and linking with the external stakeholders. Systems driving the economic pillar get the most attention for resource allocation and performance monitoring. The suggested model provides an equal opportunity to implement the systems with an integrative view. Auditable quality management system based on ISO 9000 series of standards (Abbas, 2019; Yong et al., 2019), occupational health and safety system based on ISO 45001 series of standards (Tang & Gekara, 2018; Ikram et al., 2020) and environmental management system based on ISO 14000 series of standards(Wang and Mao, 2020; Tatoglu et al., 2020) provide information on SD application. An integrative approach to the management and monitoring of these systems enhances business performance at the same time adding value to the environment and the society.

Scholars (Ikram et al., 2020) proposed an integrated management system that overlaps between the different management systems for improvement. The SSM approach harnesses the idea of integration balancing economic prosperity with environmental protection and social development. The industry has management systems in place that are fragmented; integration pulls them together for maximum business performance, resource efficiency, and synergy. Strategic goals on systems implementation linked to the tactic and the operational practices makes monitoring by the policy

makers easier. Policy statements on SD should trickle down for actualization to reduce cases of window dressing due to stakeholder pressures. Previous studies have warned against green washing (Sheth & Parvatiyar, 2021) in SD application. Commitment to an auditable integrated management system is likely to yield eco-friendly products (Shahzad et al., 2021), cleaner production (Ghobakhloo et al., 2021; Yu et al., 2021), closed loop systems (Borland et al., 2019) and green organisational cultures (Li et al., 2022). Lozano (2019) has also suggested sustainability initiatives such as cleaner production, design for environment, industrial ecology, green chemistry, eco-efficiency, environmental management systems to achieve SD practice.

6.1.4 Strategic Area 4: Stakeholder Engagement and Innovation

Stakeholder engagement by the industry involves the community, the government, the suppliers, and the employees in various aspects such as consultation, collaboration in problem solving as well as customer feedback. Stakeholder greening pressures (Adomako et al., 2022; Obeidat et al., 2020) influence positioning by the business of the 21st century towards the global challenges. The multi method qualitative case study has revealed low stakeholder engagement by the trade effluent-generating industries. The industry does embark on community service, which is part of the CSR strategies. Literature has revealed that CSR was practiced as far back as the 1960s to cater for the needs of the people and the planet(Kourula et al., 2017; Low,2016), and CSR is viewed as an isolated philanthropic action that legitimizes the company's activity (Martinez et al., 2016; Schrempf-Stirling et al., 2016; Velte, 2020). CSR did not cater for the future generations. The inclusion of sustainable stakeholder engagement strategies in an integrative approach is a socially responsible investment (Crifto et al., 2019; Fischer et al., 2020; Velte, 2020) that takes care of the future generations (Borland et al., 2019; Stead & Stead, 2019).

Unlike conventional strategic management theory and practice, SSM advocates for diverse stakeholder engagement (Crifo et al., 2019; Tatoglu et al., 2020). These stakeholders are internal and external to the business, including future generations. SD practice shifts the focus of the business from making a profit for the business owners to responding to the interests and pressures of the stakeholders. Crifto et al. (2019) confirmed that SD practice in business requires planning for the stakeholder interests and needs. A diverse stakeholder engagement strategy intended to influence a broad range of stakeholders is necessary to advance SD application in trade effluent-generating industries. Stakeholders range from politicians, competitors, shareholders, the community, suppliers, and employees. The industry has to implement unique strategies for stakeholder engagement and outreach to update on the TBL performance. Technological advancements are an advantage to increase stakeholder engagement and outreach using the internet, social media, and other emerging modes of communication.

Scholars have demonstrated the importance of stakeholder focus on business prosperity (Stead & Stead 2019; Tatoglu et al., 2020). Action on stakeholder influence policies provides the required information on the TBL performance while guarding against the green washing. Stakeholder relationships are essential for business survival in the present and for the future. Pollution caused by the present business may affect the stakeholders' connection with the future business. SSM approach considers the present stakeholder relationships as well as the future stakeholder relationships. The relationship between the business, the planet in which it exists, and the society in which it operates has become a critical concern for long-term health and welfare of the people (Takacs et al., 2022; Rubio – Mozos et al., 2020). Therefore, the strategic area on stakeholder engagement and innovation will drive strategies for stakeholder engagement taking into consideration both the present and the future generations.

Stakeholder engagement fosters innovation (Crifo et al., 2019; Etse et al., 2020). Innovation strategically helps to weave the SD principles into the industry's strategic management process and practices. The expectation is for the trade effluent-generating industry to adapt to the new paradigm shift for the 21st-century business (Ahammad et al., 2021; Ivory & Brooks, 2017). Innovation is an internal capability that enables the industry to leverage technological changes with industry 4.0(Ghobakhloo et al., 2021). Eco- innovations (Borland et al., 2019; Li et al., 2022) are required for sustainable value creation (Shahzad et al., 2021). Green corporate innovations for the trade effluent-generating industry provide a solution for pollution prevention at source. Green capabilities and green practices (Shahzad, 2020) influence green corporate innovations such as green human resources management (Yong et al., 2019). Corporate environmental ethics, innovation strategy, and knowledge management strategy influence corporate innovation (Shahzad, 2020).

Green innovations includes business process improvements through the inclusion of new changes such as cleaner production, industrial ecology (Ghobakhloo et al., 2021; Sullivan et al., 2017), design for environment, eco-efficiency, green chemistry, circular economy etc (Lozano, 2019; Takacs et al., 2022). Green strategies such as re-use, recycle, reduce and recovery are some of the pollution prevention initiatives suitable for the trade effluent-generating industries. The circular economy promotes the recycling of technical nutrients creating closed-loop systems (Rovanto & Finne, 2022). Zero waste discharge, eco-innovations, and retrofitting to reduce waste discharge are some of the interventions suitable for pollution prevention. Innovations are central to these initiatives, including on-site wastewater treatment.

On-site wastewater treatment is a pollution prevention and resource efficiency strategy. Innovations in wastewater treatment are required and should reflect in the corporate strategic plan for ownership by the leadership and implementation at tactic and operational levels. Previous studies conducted in Nigeria and Ethiopia (Adegbite et al., 2018; Firew et al., 2018) have recommended on-site treatment for trade effluents to reduce the pollution load before discharge. Wastewater pre-treatment facilities are in place for the industries studied to minimize the effluent's chemical strength before release into the sewer line. However, these pre-treatment facilities are not always effectively and efficiently functional causing the industry to discharge effluent of high chemical strength affecting the performance of the central wastewater treatment facilities.

Therefore, the pre- treatment facilities need constant improvements to align with the strength of the process water for efficiency and effectiveness. The industry needs a budget for the operations and maintenance of these facilities for better results. Previous studies highlighted the importance of process-driven sustainability strategies that promote pollution prevention at source (Chan et al., 2022; Puglieri et al., 2021). On-site wastewater treatment would prompt other green innovations such as the recycling of technical nutrients and biological nutrients, promoting the co-existence of industrial systems and natural systems. Previous studies have demonstrated the importance of industry symbiosis for resource efficiency (Rovanto & Finne, 2022), and onsite wastewater treatment has the potential to produce water for input in another industry.

Other innovations fit for adoption as sustainability initiatives are the Zero Liquid Discharge (ZLD) policy and the 4 Rs (reduce, reuse, recover and recycle) strategy. Both the ZLD and the 4R strategy promote resource efficiency. The ZLD is a closed loop system that supports the cradle-to-

cradle principle mentioned by Stead and Stead (2019) for promoting the circular economy. Recovery systems that keep the resources in the loop minimize pollution and promote cleaner production (Takacs et al., 2022). Currently, the industry is pre-treating where possible and then discharging into the sewer line. In most cases, the discharged effluent from these industries contains some pollution load that interferes with treatment at the central wastewater treatment facility. The ZLD policy combined with the 4 Rs strategy can yield good results for the industry by preventing chemical pollution at source. The practice of these green innovations by the trade effluent-generating industry is low. An increase in the adoption of ZLD policy and the 4Rs strategy, including the transformation of trade effluents into a resource, are a potential for accelerating the uptake of SD in trade effluent industries.

Currently, the rate of wastewater re-use by the industry is low, and there are few instances where waste generated by one industry is a resource in another industry. Turning waste into a resource requires more exploration for these industries. One industry uses waste generated from another as raw material. This kind of industry relationship promotes industry symbiosis (Neves et al., 2020; Yu et al., 2021). Yu et al. (2021) have described industry symbiosis as recovering value of by-products and waste. Environmental and socio-economic benefits can be derived from wastewater re-use and recycling. Process water may be recycled in the industrial processes, and pre-treated industrial effluent used for non-potable uses such as cleaning and dust suppression within the premises. Wastewater re-use is a resource efficiency strategy that is highly recommended for water conservation and demand management. A UK-based company, Rocoh made savings through adopting conservation strategies as part of their business actions (Borland et al.,2016). Adopting these green strategies by the industry benefits greening the economy (Rovanto & Finne, 2022; Takacs et al., 2022). Wastewater reuse is a resource efficiency strategy and a pollution prevention strategy at the same time.

6.1.5 Strategic Area 5: International Business

Positioning for international business by the trade effluent-generating industries is another area that can potentially increase the uptake of SD practices. The trade effluent-generating industries investigated in this study export their finished products to the international markets. The strategic area of international business is to promote strategies for green international marketing and trade. These includes positioning for global challenges (Mio et al., 2020; Montiel et al., 2020). The pollution caused by the trade effluents is a threat to the global business and the SD agenda's achievement. Pollution reduction and waste minimization at source are sustainability priorities (Ghobakhloo et al., 2021; Wang & Mao, 2020). Products produced from polluting sources are likely to affect the international markets because consumers prefer green products (Galbreath, 2019). Strategies on product stewardship are important for the industry to ensure pollution prevention across borders, and these should reflect in the corporate and functional strategy.

Strategies are required to address the requirements of international standards and align with the communities of practice. Strategic decisions are required on the choice of international standards for maximum profit in equilibrium with environmental protection and social development. Improvements in the use of ICT for connectivity is another area that needs attention for the industry to prosper. ICT connects the world and provides the opportunity for learning and problem solving. These also advance knowledge management, research and internet use. Industry 4.0 emphasizes on automation and digitization to increase competitiveness in the manufacturing industries (Ghobakhloo et al., 2021). The industry has to plan for these challenges by providing the resources and the ICT infrastructure to match the industry 4.0 requirements. COVID-19 is another global challenge that requires positioning from the industry for international business. The use of ICT proved effective in reaching out to the global markets for communication during the pandemic. These improvements maybe explored further to include other aspects like the sales of products.

While selling their products to the international markets is an opportunity for the industries, competition for the same markets with products from developing countries is a threat. Therefore, there is a need for the industry to differentiate their products for the international markets. Selecting the product portfolio (Villamil et al., 2021) and responding to the changing global markets poses a challenge to the industry. Strategies on product portfolio and differentiation are necessary to drive international business. Commitment to sustainability marketing at corporate and functional levels (Tollin & Christensen, 2019) is essential. Integration of sustainability into marketing activities such as brand management, new product development, pricing, sales, and marketing communications is a competitive advantage. Maintaining the brand image in international markets is critical for customer loyalty. Product cost strategy is also essential to match the cost of products supplied by the competitors in the global space.

6.1.6 Strategic Area 6: Challenges & Opportunities

Strategic area on challenges and opportunities improves the internal organisational capabilities, eliminates the weaknesses, and positions the organisation for the external environment. The industry demonstrated many inadequacies that need address and some strengths to capitalize on. At the top of the list is the budgetary constraints faced by the industry resulting in poor implementation of SD initiatives. The multi-method qualitative case study indicated some opportunities for improvement within the organisations and some moments to seize in the external environments. Possibilities included a good reputation due to pollution prevention and long-term socio-economic benefits. Using the SSM view, the industry sets strategic goals to address the identified challenges and opportunities. These include strategies to address research and development, innovations on pollution prevention and SD practice, and capacity development.

The study recommends industrial research & development (R&D) as an opportunity to find sustainable solutions to pollution caused by trade effluents. Streamlining SD principles into the strategic management process creates sustainable solutions for the future (Hristov et al., 2019; Villamil et al., 2021). There is a lot of opportunity for R&D in the selected industries and this includes turning industrial waste into a resource that can benefit the adjacent industries, hence the industry symbiosis (Neves et al., 2020; Yu et al., 2021), as well as business process improvement(Ghobakhloo et al., 2021; Hansen & Schaltegger, 2016). Investing on R&D to create sustainable solutions for the industry is a strategic option that places the business at a competitive advantage (Hristov et al., 2019; Ludeke-Freund, 2019; Puglieri, 2022). R&D is an internal capability that promotes innovations and creates new knowledge within the industry. This then allows the industry to refocus business practices to position for the turbulent external environment.

The industry's full adoption of the TBL performance framework (Clementino & Perkins, 2020; Mio et al., 2020) is low due to a lack of capacity. The jobs in these industries are blue collar, and the staff are limited in educational backgrounds. SSM practice that Stead and Stead suggested (2019) for the facilitation of the TBL performance (Takacs et al., 2022; Rubio-Mozos et al., 2020) is expected to make some significant changes when applied at all levels including the operational levels. Leadership competencies are required to drive the integrative approach of the TBL performance (Akhtar et al., 2018; Henry et al., 2019), but these have to be backed by some specialised skills on the operations to actualise SD initiatives. The results of this study indicated a challenge on the adoption of the SD principles by the trade effluent-generating industries. Formulation of policy happens at national level and there is need for both leadership competencies and technical competencies at industry level to actualise the policy requirements. The challenges faced by the industries in both

green leadership and green management competencies for translating the policy into action hinders the green practices at the operations. Technical competencies also require improvement to match the demands of the global challenges, hence the need for capacity building.

Capacity building is essential for the industry to enable SD practice at all levels. The industry is experiencing difficulty with the integrative approach to enable the balance of the TBL performance goals. Technical skills to perform the operations in line with the SD practice is lacking. Therefore, capacity building is required for leadership, management, and technical skills to adapt to the contemporary business environment. Globalisation (Eger et al., 2019; Wagner, 2019) puts pressure on organisations to embark on green innovations (Galbreath, 2019) and renewal to remain relevant (Boone et al., 2019). Green strategic thinking (Cop et al., 2020; Henry et al, 2019; Li et al., 2022) is necessary to cultivate green corporate culture (Roscoe et al., 2019; Shahzad, 2021). Technical skills are also required for practice at the lower levels for process improvement to align with SD. The flattening of boarders due to networking through technology is an advantage to accessing knowledge (Boone et al., 2019, Shahzad et al., 2021;) from developed countries to advance the implementation of the SD. Collaboration with the government is an opportunity to guide the industry on policy implementation.

The adoption of the SD agenda by the industry is voluntary and self-regulatory (Wagner, 2019) There is no international law that governs the implementation of the SD (van Zanten & van Tulder, 2018). The industry adopts the SD agenda as a global best practice to embark on "developments that meet the needs of the present without compromising the ability of the future generations meet their needs" (Fischer et al., 2020, p. 89). Countries have to factor in the requirements of the SD agenda into

their legislation framework to improve on the SD governance. Currently the reporting of environmental performance and social performance is voluntary. There are no legal instruments in place to punish the deviations (Tatoglu et al., 2020) from SD requirements. Global initiatives such as the UN Global Compact and the GRI provides guidance on the reporting sustainability initiatives only for consistency and comparability (Tatoglu et al., 2020; Rosati & Faria, 2019). Strengthening of the national legal framework to include sustainability issues would provide the basis for monitoring TBL performance. Previous studies have revealed problems of green washing(Sheth & Parvatiya, 2021) by many businesses around the world in response to stakeholder pressures(Velte 2020) and not necessarily accounting for the sustainability objectives they claim to undertake (Borgstedt et al., 2017; Allen et al., 2019).

ISO standard on sustainability 26000 provides sustainability guidance (Douglas et al., 2021) with the intention to assist organisations in contributing to the SD. The adoption of this ISO standard by the industry is an opportunity to improve on sustainability reporting and governance. ISO 26000 guidelines complements the Global initiatives on sustainability reporting such as the UN Global compact and GRI that encourages organisations to go beyond legal compliance. The adoption of this standard is likely to curb problems of green washing in the industry. ISO 26000 is not a management system but a code of practices that commits the industry to environmental, societal, legal, cultural, political, and organisational diversity differences in economic conditions, upholding the international code of practice. The standard influences ethical considerations in doing business promoting organisational governance, human rights, labour practices, the environment, fair operating practices, community involvement, and development and consumer issues.

Adopting ISO 26000 to improve on sustainability practices and integrating management

systems would refocus and streamline SD throughout the organisations. Integration of management systems promotes sustainable business practices by simultaneously managing occupational health and safety, environmental, quality and corporate social responsibility (Ikram et al., 2020). The social aspect is lagging behind in the practice of SD by the industry. The ISO 26000 standard is putting a lot of emphasis on the social aspects, which includes stakeholder involvement and engagement. Both ISO and GRI are in support of environmental ethics and innovation. Social responsible investments promote disclosure in environmental, social and governance (Grewal, 2020). Adopting international best practices in business ethics will ensure disclosure in carbon emissions, water consumption, waste generation, and social and governance issues. Corporate integrity and upholding business ethics has benefits such as competitive advantage, reputation, customer loyalty, improved stakeholder relationships, and employee morale.

Trade effluent-generating industries are currently releasing trade effluents that do not comply with the national set standards for discharge. The generation of poor quality effluent by the industry is a pollution threat to the environment and to the welfare of the people (Bhatia et al., 2017; Firew et al., 2018). Pollution resulting from these effluents is posing a hindrance to the achievement of SDG 6.3, which states, "By 2030, improve water quality by reducing pollution, eliminating dumping, and minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally" (Essex et al., 2020). Non-compliance to effluent quality standards is a threat to the achievement of the sustainable development goals and the national priority goals. Collaboration between the industry and the government on the implementation of SD does not just build industry capacity but also stimulates innovations for sustainable solutions. Villamil (2020) has confirmed that stakeholder collaboration is essential in solving problems. In this study, the industry has indicated a lack of government support with regard

to the application of the SD concept and collaboration between government and the industry, which is an opportunity to increase the support.

The government must incentivize good performance with regard to SD practice. Currently the government does not have a system in place to incentivise the practice of SD by the industry. An incentive scheme may encourage the industry to embark on green strategies such as the 4 Rs Strategy, ZLD, onsite treatment and green organisational cultures. The industry does not feel the contribution of the government in facilitating the uptake of the SD practice. Monitoring and compliance are mainly for controlling and managing pollution to fulfil the regulatory requirements. Good methods such as quality management systems and occupational health and safety systems implemented by the industry mainly aim to increase economic gain. Previous studies have proven that incentivising and rewarding SD practice achievements is of great benefit to the monitoring regime (Al – Shaer & Zaman, 2019; Derchi et al., 2021). Tatoglu et al. (2020) has argued that businesses in the developing economies are lacking incentives for compliance with sustainability requirements due to weak regulation. Monitoring of the SD initiatives require strengthening of the legislation to include incentives for SD practice. Incentivising and rewards for sustainability performance will improve compliance, and motivate the industry into action and foster support by the government on SD practice.

Accelerating the implementation of green strategies and capitalizing on the recycle loops advances the CE. SDG 12 advocates for responsible consumption and production (Mio et al. (2020) which is achievable through CE. Green production and consumption that encourages re-use of by-products accelerates the principle of CE. At the Rio + 20 summit the heads of state agreed on the concept of greening the economy (Gutlerrez et al., 2020; Murray et al., 2017) which has become a

strategic issue both at national and international levels. SSM has a co-evolutionary perspective where the industry's performance influences the environment and the environment also affects the industry's performance. The adoption of CE as the new vision for sustainability increases economic efficiency, value add and environmental protection (Ciliberto et al., 2022). The SSM approach that considers the CE principles is an opportunity to set the business apart. The industry capitalizes on environmental opportunities and minimise on environmental threats. The greening of the business environment is a critical dimension that will provide significant opportunities and threats well into the future. Coupling the strategic planning with CE strategies is a potential for green growth.

6.2 Recommendations for Future Research

The purpose of the study was to explore the integration of the SD principles in business practices in trade effluent-generating industries. The study area was Francistown region in Botswana in Southern Africa. The three selected industries are the area's major trade effluent-generating industries, and they have consistently failed to meet trade effluent quality for over 20 years. The non – compliance of these facilities to the trade effluent discharge requirements is a pollution threat that may hinder the achievement of the SDGs. These are the universal goals adopted by the national governments in January 2016 to provide guidance to the practice of SD (van Tulder et al., 2021; van Zanten & van Tulder, 2020). The intention of these goals is to balance prosperity with the needs of the people and the planet targeting the year 2030(Mio et al., 2020). The 17 universal SDGs shape the SD concept that guided this study. Elkington suggested a strategic approach for the business to cater for environmental challenges after the Rio Summit of 1992(van Tulder et al., 2021; Carmine & De Marchi, 2020) through the introduction of the TBL performance framework (Dzhengiz & Niesten, 2020; Puglieri et al., 2021). Stead and Stead(2019) proposed the SSM theory and practice for improving TBL uptake after observing the business's slow adoption of the TBL performance framework (Takacs et al., 2022; Rubio-Mozos, 2020).

The theory of SD has been evolving since 1992 based on the Agenda 21 on SD (Dobrovolska, 2018; McDonald et al., 2019), the MDGs and then the SDGs (Mio et al., 2020). The SDGs are a global commitment between the UN member states including the private sector and the civil society (van Zanten & van Tulder, 2020; van Zanten & van Tulder, 2018) to achieve the agenda 2030 on SD. The business community through the WBCSD has made a commitment to action the SDGs (Eang, 2019; van Zanten & van Tulder, 2020). However, previous studies have indicated lack of understanding in the role of business in SD and specifically in actualizing; the SDGs (Clementino & Perkins, 2021; Mio et al.2020) and the industries selected for this study have proven the same. The industry is experiencing problems regarding the integrative approach to the SD principles, which needs clarification. Future research provides an opportunity to clarify the integration of SD in business.

The study recommends future research on pollution prevention strategies in trade effluent-generating industries. Pollution prevention and waste minimization at source are priorities in SD practice (Ghobakhloo et al., 2021; Wang & Mao, 2020). Trade effluent-generating industries release a lot of wastewater with varying chemical strengths based on the type of manufacturing process for the industry. Pollution load reduction and eco-design for cleaner production takes the strength of the effluent into consideration. The industry has implemented the end of pipe solutions for a long time to solve pollution problems by trade effluents with no success. Sustainable strategic inclusion of pollution prevention initiatives require an understanding of the type of pollution generated. Chan et al. (2022) has demonstrated the effectiveness of pro-active environmental strategies in pollution prevention. The achievement of the SDGs require a collaborative effort between the policy makers, the researchers, the non-governmental organisations (NGOs) and the business actors (Doh et al.,

2017; van Tulder et al., 2021). The role of business is very vital in the achievement of the SD agenda. Businesses are capable of creativity and innovation for pollution prevention and control. Innovative sustainable solutions such as the development of pollution prevention strategies (Ghobakhloo et al., 2021; Villamil et al., 2020) facilitates the achievement of the SD concept.

The multi-method qualitative case study focused on trade effluent-generating industries in the Francistown region in Botswana with the intention to improve the quality of trade effluents generated from these industries, hence preventing pollution of the environment and protecting the lively hoods of the communities that resides in the area. Replication of the same study is possible in other businesses in the area to investigate other potential pollution sources and then devise some mitigation strategies. Replicating the same research study in the same area targeting different management set-ups will enhance the results of this study and at the same time, advance the theory of SD, in particular, the theory and practice of SSM. The advantage of a qualitative case study is that the same research is repeatable in another case (Creswell, 2016, p.265). The qualitative case study used telephone interviews, and document reviews as data collection tools. Future studies may consider some improvements in data collection by coupling semi – structured interviews with document reviews, observations and focused group discussions (Marshall & Ross, 2016, p.170, Creswell, 2016, p.114). The flexibility of qualitative case studies enables the incorporation of multiple data collection tools (Marshall & Ross, 2016, p.19). The outbreak of COVID 19 pandemic that restricted movements and gatherings in the country hindered the collection of data through focused group discussions and physical observations.

The qualitative case study design is flexible and it has the ability to incorporate both the

qualitative & quantitative data collection tools (Creswell, 2016, p.328). In this particular case study, the study used qualitative data collection tools only to collect data. A quantitative case study on the same industries using questionnaires to collect quantitative data (Creswell, 2014, p.200) to augment the results of this study is possible. This would assess the extent of SD infusion into the industry's strategic management process establishing the extent of the development of the theory and practice of SSM. The quantitative case study may validate the results obtained in this qualitative case study by using the results obtained in this study to set the variables for a quantitative case study.

This multi- method qualitative case study and the literature survey has indicated that the industry is struggling with the balance of the TBL performance goals (Clementino & Perkins, 2021; Joseph et al., 2020). The study generated a model intended for pollution prevention at source based on the SSM integrative approach for trade effluent-generating industries. The purpose of the model is to guide the inclusion of SD in business practices by the trade effluent-generating industries. The model indicates six strategic areas suitable for accelerating the uptake of SD practices by the trade effluent-generating industries. Pedersen et al. (2018) has mentioned the importance of building business models that enables the business sustainability. Recent studies (Ghobakhloo et al., 2021; Puglieri et al., 2022) echoed the same sentiments of the need to build business models that support sustainability in the modern businesses. These includes cultivating the CE principles into the business as well as advancing towards the requirements of the industry 4.0(Ghobakhloo et al., 2021) There is an opportunity for future studies to test the validity of the SSM application model for trade effluent-generating industries developed in this multi-method qualitative case study.

There is a gap in performance measurement tools for the TBL performance. Performance

management in businesses has been dominated by the measurement of financial goals (Pedersen et al., 2018; Rosati & Faria, 2019) while non-financial goals have not been adequately supported (Borgstedt et al., 2019). Hansen & Schaltegger (2016) has indicated that the increasing importance of social and environmental issues in businesses prompts for sustainability performance management and measurement. The WBCSD has adopted the TBL performance for the business in order to fulfil the requirements of the Rio summit of 1992(O'Reilly et al., 2018; Rubio – Mozos et al., 2020), but they have never considered the practicality of measuring performance to balance the three SD pillars for the business. The exploration for alternative performance measurement tools that could balance the TBL performance for the industry is imperative. Kaplan & Norton (1996) developed the Balanced Score Card (BSC) that measures the financial and non-financial goals for the Business. Hansen & Schaltegger (2016) have suggested the modification of this performance measurement tool to include sustainability issues. Further studies would assess the possibility of improving this performance management tool to align with TBL performance measurement. This may go further into exploring other alternative performance measurement tools that considers the balance of the TBL performance goals (Ciliberto et al., 2021; Hristov et al., 2019; Vilamil, 2021).

Stakeholder involvement and engagement is a major factor in the achievement of the SD practice for the industry. Stakeholders for the 21st century business are a wide range that includes, the employees, the business owners, the communities where the business operates, the regulatory authorities, suppliers, customers, the general public and the future generations (He et al., 2020; Li et al., 2022; Takacs et al., 2022). Therefore, the challenge facing the 21st century business is to position for both the present and the future generations. The business that does not position itself for the future generations may affect its corporate image and destroy its relationship with stakeholders. Ford and

General Motors had to pay to restore their reputation with stakeholders due to their past actions (Martinez et al., 2017) because of poor stakeholder management. The business focus is still on the CSR, which is more of a philanthropic action that may legitimise the company's actions. Future research may explore on how the 21st century business should position itself for all the stakeholders including the future generations. The SSM framework suggested by Stead and Stead (2019) for the acceleration of SD in business takes into consideration the anthropocentric and the eco-centric view (Borland et al., 2019; Takacs et al., 2022).

There are benefits derived from the application of the SD principles by the industry. The study has revealed benefits such as pollution prevention at source, job creation for the present and future generations, company reputation, and good relationships with stakeholders. Future research may explore the benefits of engrafting the SD principles into the traditional strategic management process for the 21st century business. The engrafting of the SD principles into the traditional strategic management has resulted into the theory and practice of SSM, which is a new paradigm shift. The SD concept is a broad concept that keeps on evolving over the years putting more clarity and direction (Henry et al., 2019; Mio et al., 2020). The broadness of the SD concept and the understanding to different businesses and countries may carry different meanings (Okara et al., 2018). Therefore, there is an opportunity to compare benefits derived in diffusing the SD principles into the strategic management for the developed economies and for the economies in transition. Previous studies have revealed that businesses in Australia have survived the 2009 economic depression because of the adoption of S D practice (Goergen & Tonks, 2019; Mees & Smith, 2019). The UN Global compact has introduced international standards for business sustainability (Mees & Smith, 2019; Tsali et al., 2020). These standards can be adopted by businesses across the globe for improvement, hence the

need to establish the feasibility of adopting these standards by the businesses in the economies in transition.

Industry has lamented lack of practical guidance on the implementation of the SD, especial the integrative approach to the business (Henry et al., 2019; Clementino & Perkins, 2020). Collaboration between the government as the policy maker and the industry is highly expected to communicate the SD expectations to the business owners and other stakeholders. The SD agenda is multi –stakeholder formulated by consensus involving the government, researchers, business actors, and non-governmental organisations (van Zanten & van Tulder, 2018).Engagements by these stakeholders provides the potential for improvements, including innovations on effective instruments of compliance monitoring. Therefore, the study encourages partnerships in research programs between the government and the industry aiming at solving problems for the improvement of policy and practice. There is an opportunity for future research in conducting an assessment in the various business entities to establish challenges on SD implementation including the regulatory framework. Despite the fact that the SD has been into existence for three decades, this qualitative case study and the studies conducted in the past have revealed that the understanding of the SD concept has not reached all levels (Okaro et al., 2018; van Tulder et al., 2021). The aspirations of the business community regarding the SDGs is enshrined in the WBCSD vision 2050 as "We support our members and the wider business community to strategically integrate SDGs as a blue print for peace and prosperity for people and the planet"(O'Reilly et al., 2018, p.2). Quantification and establishment of baselines for the business uptake of the SD practice is essential. Collaboration between the business and the government aligns business actions with government programs and policies, facilitating the achievement of the global challenge.

There is also some potential for demand – driven research for problem solving at industry level, the industry can partner with the local Universities to solve the existing problems in the industry through the masters and PHD programs. Applied research is currently not highly promoted in Botswana, but there is a lot of potential in the existing institutions to benefit the local businesses. Institutions such as Botswana University of Science & Technology (BIUST), Botswana Innovation, Technology & Research Institute (BITRI), Botswana Innovation Hub (BIH) and University of Botswana (UB) need to work on projects that are solving real life problems on the ground to improve on productivity. Collaboration between the industry and the research institutes is a potential for knowledge and skills transfer. The training program for students may involve attachments at the industry to work on objectives that drive sustainability as part of their training. This may also offer practical guidance to the industry regarding the SD adoption for the business. There are several sustainability initiatives available for adoption by the industry such as clean production, design for environment (Lozano, 2019), environment, social and governance (Clementino & Perkins, 2021) and the TBL performance framework (Dzhengiz & Niesten, 2020; Joseph et al., 2020). Collaboration with the local research institutions is an opportunity for the industry to identify the initiatives that are suitable to the business processes.

Pollution problems are regarded as a grand challenge (Ciliberto et al., 2021; Doh et al, 2017; Shahzad et al., 2021) and it is an area of concern for the international business (Kolk, 2016; Doh et al., 2017). The adoption of the SSM approach will balance the eco-centric and the anthropocentric view for the 21st century business (Borland et al., 2019; Borland et al., 2016). The theory and practice of SSM encourages pollution prevention at source through the promotion of cradle-to-cradle (Stead &

Stead, 2019; Borland et al., 2019). The theory of SSM is still at an infancy stage requiring a lot of research to understand its practice. Stead & Stead (2008) suggested the theory and practice of SSM, supported by Borland (2009) as a driver for the TBL performance in business. There is little work that was done on the theory of SSM (Henry et al., 2019; Takacs et al., 2022; Rubio-Mozos, 2022), since it was suggested for the facilitation of the TBL performance. The study views collaboration work between the research institutions and the industry on the application of SSM as a sustainable solution to wastewater pollution problems for the industry. Such research when conducted will advance the theory of SSM and at the same time improve policy and practice regarding the adoption of the SD principles by the industry.

SD application promotes resource efficiency, re-use, and recycling (Borland et al., 2019; Horak et al., 2018). These are good practices that supports the CE (Murray et al., 2017; Takacs et al., 2022; Ciliberto et al., 2021) and green practices for the business (Dhopte & Sinha, 2016; Ludeke-Freund, 2019; Shahzad et al., 2021). The Rio + 20 summit committed the world to a green economy (Kolk, 2016; Murray et al., 2017). The results of the qualitative study indicated little efforts in terms of re-use and recycling both at industry and at national level. Further investigations may explore the challenges faced by the economies in transition in the adoption of green practices. Green strategies such as the ZLD promotes the cradle to cradle, which is a closed loop system (Borland et al., 2016; Borland et al., 2019; Stead & Stead, 2019). These practices supports resource efficiency and re-use on-site which prevents pollution at source.

The study has revealed shortage of appropriate skills as a hindrance to the application of SD by the industry. Leadership and management competencies are essential for strategic direction as

well as ensuring the balance of the TBL performance (Montiel et al., 2020; Pless et al., 2021, Jaena et al., 2021). Organisational cultures are affected by the type of leadership employed (Li et al., 2022; Olejniczak & Lukasik, 2016). Responsible leadership (Montiel et al., 2020) would easily embed sustainability into the organisational cultures to effect changes. Contemporary human resource skills such as problem solving,big data analytics, and internet of things, qualitative and analytical are essential for the new paradigm shift (Akhtar et al., 2018; Boone et al., 2019; Ghobakhloo et al., 2021). Future research may close the gap by investigating the leadership and management competencies suitable for the 21st century business.

The SD concept has been evolving since the adoption of the agenda 21 in 1992(Kolk, 2016; Dobrovolska, 2018). The SD concept currently takes its shape from the seventeen (17) SDGs to provide guidance for policy development and practice. The role of business in SD has been growing over the years and studies has revealed that IB research has not kept pace with this expanding role, especial with the goal setting agenda such as the MDGs or SDGs.(VanZanten & VanTulder, 2018; van Tulder et al., 2021). IB research could do much more to contribute to the development of the theory of SD and SSM in particular. Doh et al. (2016) and van Tulder et al. (2021) have identified a gap in IB scholarship regarding the SD concept. Performing future research on the SD concept in IB is necessary and will aid in addressing the global challenges. This would include the refocusing of the business to the contemporary environment, helping to harness science, technology, and innovation to solve significant national or global problems. These problems includes the pollution challenges posed by the trade effluent-generating industries.

IB research would facilitate new ways of building knowledge and relationships, as well as

enabling new ways of creating and delivering value to global customers (Nambisan et al., 2019). Scholars and educators through their research work will guide business leaders, employees, and stakeholders with objective evidence on how to tackle the global challenges (George et al., 2016). Developing new knowledge in IB provides a solution to the many challenges posed by globalisation including the grand challenges. Businesses have to position for the global markets, and greening of products (Tollin & Christensen, 2019; Yu et al., 2021) is a requirement. Therefore, IB research with emphasis on SSM to address the global challenges will improve the theory and practice of strategic management. New knowledge in IB is an opportunity to improve on the foreign direct investment by giving an understanding on the opportunities and threats to the business. Foreign direct investment need to take into consideration the impacts on the people and on the planet. Research on IB is an opportunity to explore the benefits that may result from the foreign direct investment in a nation.

Literature review has revealed that most of the sustainability initiatives implemented primarily address the environmental pillar leaving the social pillar behind. The importance of the social pillar in SD practice cannot be over emphasised. The social pillar connects the business with both its internal and external stakeholders. Engert et al. (2016) has indicated that businesses have to meet the needs of all the stakeholders, direct and indirect stakeholders, without compromising the ability to meet the needs of the future stakeholders. The attack on businesses for their past wrongdoing is the same as the attack for their present wrongdoing (Schrempf – Stirling et al., 2016). Studies have revealed the escalating problems of green washing done by the business to window dress to impress the stakeholders (Allen et al., 2019; Borgstedt et al., 2017; Sheth & Parvatiyar, 2021). The study recommends future studies on the investigations of the social pillar and its contributions to the TBL performance. Tate & Bals (2018) have also posited the need for future research to address the social pillar. Management theory and practice has not adequately covered the social pillar when compared

to the environmental and economic pillar. Business models(Pedersen et al., 2018), should not just consider the Resource based-View(RBV) and Natural Resource based-View(NRBV), but the Social Resource based-View(SRBV) needs to be considered to take care of the business' social capabilities(Tate & Bals, 2018).

Future studies will explore the performance of implications of proactive strategies at corporate level to bring some understanding. There is a research gap regarding the implications of proactive strategies at corporate level (Chan et al., 2021). Investigations on SD performance has been concentrated on the manufacturing processes, which is primarily reactive. Linking the corporate level strategies and the operational level strategies will benefit the organisations more by mainstreaming the SD strategic thinking into practices. Strategic planning and thinking aligned with SD will cause changes and modifications of the design of the firm's operational processes for pollution prevention at source. Proactive strategies require some corporate efforts to provide direction and commitment to SD initiatives in the whole organisation. Primarily proactive thinking has been on environmental management guided by ISO 14001 for certification and gaining financial mileage (Wang & Mao, 2020). There is potential for studies in comparing the performance implications of proactive strategies and reactive strategies. Previous studies have revealed that mostly the proactive strategies to align with the SD requirements focused on the developed countries (Tatoglu et al., 2020; Wang & Mao, 2020). There is opportunity for studies in the developing countries to explore the proactive strategies in an integrative approach balancing the economic pillar with the environmental and the social pillar.

Organisational culture that embraces green practices and behaviours is likely to catalyse SD practice at all levels (Li et al., 2022; Wang et al., 2021). Organisational culture also known as corporate culture form the values and the beliefs of an organisation for value creation. Green corporate culture

influences green technology innovations and green management innovations (Abbas & Sagsan, 2019). These can also affect green employee abilities, motivating green employees, and providing green opportunities. Organisations that subscribe to a green culture would easily integrate the SD initiatives into the business practices such as recruitment, training, and leadership development (Roscoe et al., 2019). Corporate green innovation is another aspect emerging to influence the practice of SD in organisations (Shahzad et al., 2021), but lack of proper knowledge management hinders progress. Research on the relationship between Organisational culture and the organisational performance is another gap identified for future studies. Further studies investigating the influence of organisational culture on performance will create new knowledge required for innovation and problem solving.

There is need to re-think the business models to align with sustainability innovations to create value for the stakeholders. Industry 4.0 provides the opportunity for systems and process improvement resulting in financial returns and non-financial effects. Ludeke – Freund (2019) described non – economic effects as improved capacities and positive social impact leading to the reduction of ecological and social ills. Implementation of advanced digital and operations technologies at industry level is an avenue to search for the areas of improvement to prevent pollution at source. Technological advancements directly influences cleaner production driving sustainability priorities such as pollution reduction and eco-design. Future research to improve business models to align with the industry 4.0 is a benefit. Industry 4.0 supports the inclusion of the CE principles in business models, which is an opportunity for pollution prevention at source supporting economic prosperity, environmental protection, and social development. Strategy, technology, and economic value are essential drivers for sustainability business models, and an integrative approach taking industry 4.0 into consideration is an opportunity for improvement.

6.3 Summary

Trade effluent-generating industries in Botswana embraced the SD application. Still, there is a lot of potential for improvement facing the industry and the policymakers. The industry requires a paradigm shift in strategic management practice to embrace the Stead and Stead (2019) SSM approach. The SSM approach is integrative, facilitating the uptake of the TBL performance framework for the business. The study has generated an application based on the SSM approach to facilitate the uptake of the SD practice by the industry (Figure 7). These practices include good leadership and governance, improved systems and processes, stakeholder engagement, and innovation. At the same time, the industry has to build on its internal capabilities and position for the global challenges, including international markets. The study has also recommended future studies to interrogate the suggested SSM model for the trade effluent-generating industries for validity. Strategic inclusion of stakeholder engagement and innovation in business practice is likely to enhance the uptake of the social pillar that is lagging behind

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APPENDICES

APPENDIX A

UREC's Final Decision

UNICAF UNIVERSITY

UREC's Decision

Student's Name: Kene Dick

Student's ID #: R1703D2418976

Supervisor's Name: Dr Pascale Hardy

Program of Study: UUM: DBA - Doctorate of Business Administration

Offer ID /Group ID: O17036G16352

Dissertation Stage: 3

Research Project Title: Sustainable Development: A Strategic Approach for Sustainable Business Practices in Trade Effluent Generating Industries in Francistown Region in Botswana.

Comments:

Decision: A. Approved without revision or comments

Date: 23-Jun-2020

APPENDIX B

Botswana Research Permit

TELEPHONE:
Website:
FAX No:

MINISTRY OF TERTIARY EDUCATION,
RESEARCH, SCIENCE & TECHNOLOGY
GABORONE
BOTSWANA

REPUBLIC OF BOTSWANA

REF: MOTE 1/18/6 VIII (49)

08 July 2020

Kene Dick
P.O. Box 45363
GABORONE

DEPARTMENT OF RESEARCH SCIENCE & TECHNOLOGY
29 JUL 2020
RECORDS MANAGEMENT

Dear Madam

Sustainable Development: A Strategic Approach for Sustainable Business Practices in Trade Effluent Generating Industries in the Francistown Region in Botswana.

Reference is made to your application on the above captioned matter. Your application for Research Permit for the proposed research titled: ***'Sustainable Development: A Strategic Approach for Sustainable Business Practices in Trade Effluent Generating Industries in the Francistown Region in Botswana'*** has been granted. The permit is valid for one (1) year. You are kindly advised to peruse section 4.4 to 5.0 of the 'Guidelines for Application for Research Permit' in Botswana.

Any changes in the proposed research should be communicated, without fail, to the Permanent Secretary, Ministry of Tertiary Education Research Science and Technology citing above reference. You are further advised to deposit the final report with the Department of Research Science and Technology or Department of National Archives and Records Services.

By copy of this letter, the Director of Research Science and Technology is advised to take note of this development and ensure that deliverables to government are timely met.

Yours faithfully

Dr. Keitshonne Balpoledi
Ag Permanent Secretary

CC: Director of Research Science and Technology

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APPENDIX C

INTERVIEW QUESTIONS – DBA DISSERTATION

1. Explain the meaning of Sustainable Development (SD).

2. What does the SD agenda 2030 intend to achieve?

3. How have you included the SD principles in your business practices?

4. How do you ensure the in calculation SD principles at all management levels in your organization?

5. How is the implementation of the SD initiatives assessed in the company's performance?

6. What are the challenges that the company is facing when implementing the SD initiatives.

7. How do you balance your company profits with environmental protection and the social welfare of the employees and the stakeholders?

8. How does the company communicate sustainability issues with its employees and stakeholders?

9. Explain the benefits of including SD principles in the company's business practices.

10. What else can you tell me about the SD principles in relation to your business practices and the future of your company?

CONFIDENTIALITY:
All data collected will be kept confidential and will be used for the purposes of the study only. Feedback on the results of the study will be shared with the selected industries for improvement

APPENDIX D

Debriefing of Participants

UNICAF UNIVERSITY

UU_IC - Version 2.0

Informed Consent Form

Part 1: Debriefing of Participants

Student's Name: Kene Dick

Student's E-mail Address: kenedick36@gmail.com

Student ID #: R1703D2418976

Supervisor's Name: Dr Pascale Hardy

University Campus: Unicaf University Malawi (UUM)

Program of Study: Doctor of Business Administration

Research Project Title: Sustainable Development: A Strategic Approach for Sustainable Business Practices in Trade Effluent Generating Industries in Francistown Region in Botswana.

Date:

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

The purpose of this qualitative case study is to investigate business practices in three (3) major trade effluent generating industries in the Francistown region in Botswana to explore the integration of SD principles at various management levels and recommend solutions for improvement to the industry and the Botswana Government. The aim of the study is to ensure that trade effluent generating industries are adopting the TBL framework in their businesses to balance their profit making with environmental protection and social development. This kind of practice is in line with the paradigm shift from the traditional strategic management to sustainable strategic management (SSM), which is embracing the SD principles. The results of the study are intended to influence organisational cultures to focus on pollution prevention at source hence the improvement of public policy and business practice, which is also a driver for the sustainable development agenda 2030 and the Botswana vision 2036.

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

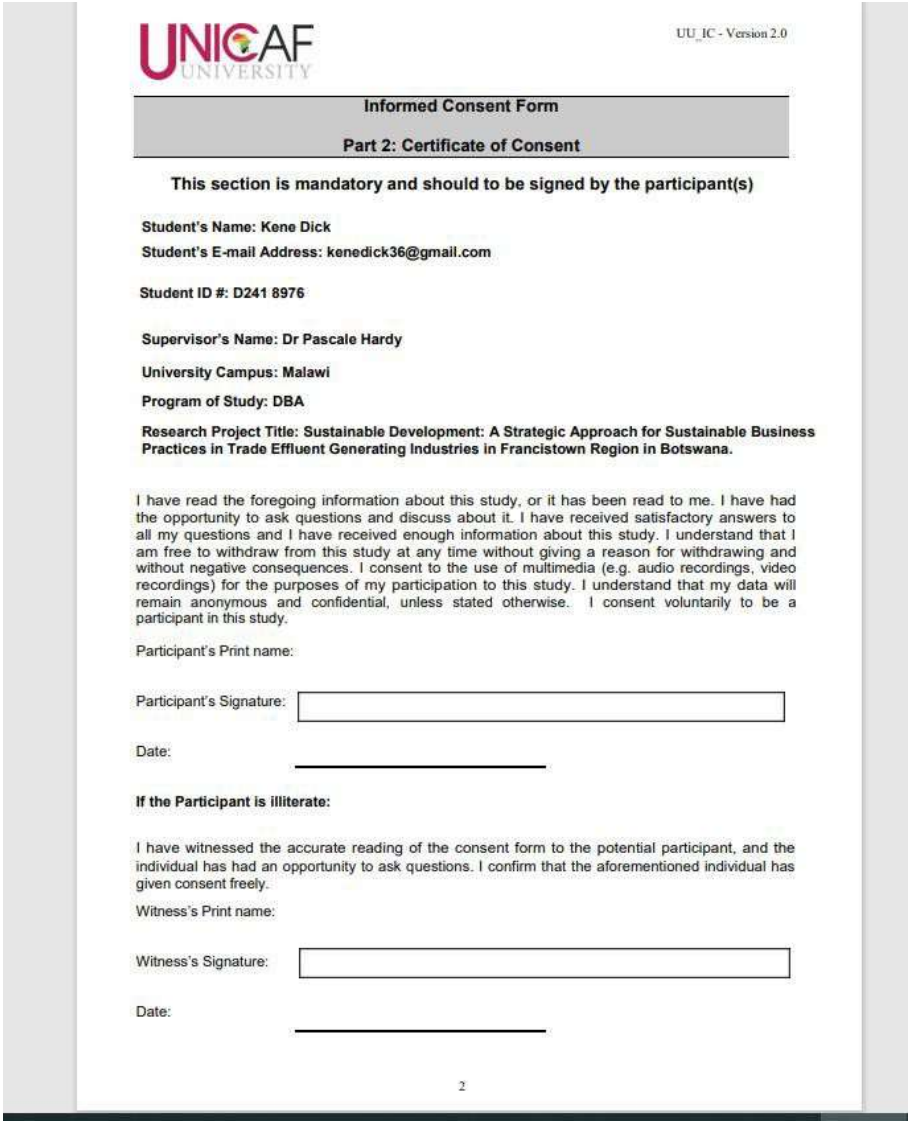
I, Kene Dick **, ensure that all information stated above is true and that all conditions have been met.**

Student's Signature: _____

1

APPENDIX E

Certificate of Consent



UNICAF UNIVERSITY

UU_IC - Version 2.0

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name: Kene Dick

Student's E-mail Address: kenedick36@gmail.com

Student ID #: D241 8976

Supervisor's Name: Dr Pascale Hardy

University Campus: Malawi

Program of Study: DBA

Research Project Title: Sustainable Development: A Strategic Approach for Sustainable Business Practices in Trade Effluent Generating Industries in Francistown Region in Botswana.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name:

Participant's Signature:

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name:

Witness's Signature:

Date:

2

APPENDIX F

UREC Decision 1

UNICAF UNIVERSITY

UREC Desision, Version 2.0

Unicaf University Research Ethics Committee Decision

Student's Name: Kene Dick

Student's ID #: R1703D2418976

Supervisor's Name: Dr Pascale Hardy

Program of Study: UUM: DBA - Doctorate of Business Administration

Offer ID /Group ID: O9246G9573

Dissertation Stage: 1

Research Project Title: Sustainable Development: Water Pollution Prevention at source is a strategic option for trade effluent generating industries

Comments:

Risk Assessment Form

-Remove any reference to information related risks associated with everyday life, such as road accidents etc.

REAF form

-Point 19a: Remove any reference to information related risks associated with everyday life, such as road accidents etc.

-Point 16: storing the data for up to 5 years not 10

-Point 3a: Principal Investigator is the student

-Point 3b: Co-Investigator is the supervisor

Informed Consent Form

-Point 9: the student should add UREC information instead

Decision*: B. Provisionally approved with comments for minor revision

Date: 29-Mar-2019

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.