Redefining Strategic Corporate Social Responsibility (CSR) in the Sustainable Development Goals (SDGs) World

by

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AUTHOR'S DECLARATION

This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

STATEMENT OF CONTRIBUTIONS

I am the sole author of Chapter 1 and Chapter 7 of this dissertation. Chapters 2-6 are based on academic work and papers that were co-authored with other scholars and academic contributors. The scoping review, which is the basis for chapter 2, was co-authored with Olaf Weber, Jeffrey Wilson, Dina ElBassiouny, and Nicholas Palaschuk, and I was the lead author on this paper. Chapter 3 was co-authored with Sean Geobey and Olaf Weber and I was the lead author on this paper, which is under review at the Journal of Applied Accounting Research.

Chapter 4 was based on a paper co-authored with Kareem Darwish, who managed the retrieval of the one million-plus tweets used for our dataset, and Olaf Weber, and I was the first author on this paper. Chapter 5 was based on a policy paper co-authored with Olaf Weber and I was the lead author on this paper. Chapter 6 was based on a book chapter co-authored with Olaf Weber, with Dr. Weber as the first author. Bibliographic citations for the paper and the co-authored chapters are based on below:

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ABSTRACT

In a paradigm characterized by unprecedented levels of transparency and business risks, CSR reporting standards have gained substantial power in their ability to drive organizations towards more sustainable business practices. With the advent of the United Nations' Sustainable Development Goals (SDGs), corporate sustainability discourse has progressed to a point where sustainability became critical to the success of firms. This dissertation explores the changes in the CSR domain post the introduction of the SDGs in 2015. The SDGs provide a robust framework for strategic CSR given their objective 17 goals along with 169 sub-goals and 232 indicators, which represent a comprehensive agenda for sustainable development. This dissertation explores the changes in the reporting practices by analyzing more than 14 thousand reports provided by 9,397 organizations to test a set of hypotheses that identify the factors that influence SDGs reporting within firms. Additionally, this dissertation highlights current gaps and challenges in the contemporary CSR domain and sheds light on the latest practices of CSR communication, such as the use of social media sites as platforms for CSR and SDGs reporting. We introduce a novel approach using social media analytics to analyze how corporations communicate about SDGs on social media, namely Twitter. The dissertation also highlights the current initiatives towards the standardization of reporting frameworks. Findings from this research contribute to strategic CSR literature by highlighting the nature of reporting per sector, and how organizations report on the SDGs that are related to their core operations. The results of the dissertation also contribute to legitimacy theory by identifying how and why corporations address the SDGs in their strategic CSR reporting. Finally, the dissertation provides a set of recommendations that can help improve strategic CSR reporting in the SDGs era.

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LIST OF ACRONYMS

Asian Development Bank	ADB
Artificial Intelligence	AI
Corporate Sustainability	CS
Corporate Social Performance	CSP
Corporate Social Responsibility	CSR
Environment Risk Management	ERM
Environmental, Social, and Governance	ESG
Financial Stability Board	FSB
Group of Twenty	G20
Global Alliance for Banking on Values	GABV
Greenhouse gas	GHG
Global Impact Investing Network	GIIN
Global Reporting Initiative	GRI
Human Resources	HR
International Finance Corporation	IFC
Integrated Reporting Council	IIRC
Integrated Reporting	IR
International Organization for Standardization	ISO
Multilateral development banks	MDB
Millennium Development Goals	MDGs
Multinational Companies	MNCs

Memorandum of Understanding	MOU
Non-governmental organizations	NGOs
Equator Principle	EP
Principles for Responsible Investment	PRI
PricewaterhouseCoopers	PWC
Resource-Based View	RBV
Responsible Investment	RI
Standard and Poor Corporations	S&P
Sustainability Accounting Standards Board	SASB
Sustainable Development Goals	SDGs
Small and Medium Enterprises	SMEs
Sustainable Stock Exchanges Initiative	SSE
Triple-Bottom-Line	TBL
United Nations Environment Programme	UNEP
UN Environment Programme Finance Initiative	UNEP FI
World Business Council for Sustainable Development	WBCSD
World Resources Institute	WRI

Chapter 1

1 Introduction

The term company stems from the Latin phrase “com panis”, which means: the sharing of bread (Khodorkovsky, 2008). Companies can play important economic, social, and environmental roles in societies where thy operate (Kolk and Pinkse, 2010). The relationship between corporations and their stakeholders has a long history in academic literature and industry practices. The debate on what we refer to as *Corporate Social Responsibility* (CSR) has existed in the academic literature for decades, without a global consensus on its definition. Research shows that CSR can help organizations gain operational legitimacy, build customer loyalty, and maintain competitive positioning (Rupley, Brown, & Marshall, 2017). Nevertheless, CSR literature has suffered from lingering skepticism by academic scholars and practitioners as a result of its vague definition. To elaborate, Votaw (1973) admonished management scholars about the implications of not having a proper definition, parameters, and reporting frameworks of CSR. His critique is valid to date when he states that:

> The term is a brilliant one; it means something, but not always the same thing, to everybody. To some it conveys the idea of legal responsibility or liability; to others it means socially responsible behavior in an ethical sense; to still others, the meaning transmitted is that of “responsible for” in a causal mode; many simply equate it with a charitable contribution (Votaw, 1973, p. 11).

Likewise, Frankental (2001, p. 20) argues that CSR is an “intangible term which can mean anything to anybody, and therefore is effectively without meaning.” Scholars have used proliferating terms when referring to CSR such as corporate social performance, corporate sustainable development, environmental responsibility, stakeholder responsibility, social

entrepreneurship, and corporate citizenship (McWilliams, Siegel, & Wright, 2006). These terms have been used interchangeably in academic literature and firms' annual reports. Scholars argue that the variations in defining CSR stem from divergent fundamental assumptions from various fields such as management, finance, and organizational theory (Jamali & Karam, 2016).

Additionally, many scholars argue that the work of Howard Bowen (1953) constitutes a shift in the CSR literature to become a fully-fledged research area. Bowen defines CSR as "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action, which are desirable in terms of the objectives and values of our society" (Bowen, 1953, p. 6). Though Bowen's definition is not explicitly measurable, yet it identifies the power of corporations and the social obligations of firms. Bowen emphasizes the inter-dependence between business and society where he argues that "Business like government, is basically of the people, by the people, and for the people" (Bowen, 1953, p. 5).

Further, CSR in the 1960s moved beyond a focus of direct economic gains for corporations, where there was a need for firms to consider the consequences of their operations on other stakeholders. The 1970s witnessed counter debates between scholars on the definition and legitimacy of CSR. The neoclassical viewpoint of Milton Friedman, which is centered around the profit maximization of firms, have been refuted by socio-economists, who adopted Archie Carroll's CSR pyramid to define the economic, social, legal, and philanthropic responsibilities of businesses (Carroll, 1979; Ghoshal, 2005). The literature in the 1980s was driven by research on corporate citizenship represented in voluntarily socially responsible agendas. Following the introduction of the *Stakeholder Theory* by Edward Freeman in 1984, the CSR domain started to explore the responsibilities of firms towards their diverse stakeholders (Freeman, 1984; Freeman, Harrison, Wicks, Parmar, & Colle, 2010). The stakeholder theory bridges socio-political

fundamentals with management theories in a way that shapes organizational behaviour (Freeman et al., 2010).

Furthermore, in the 1990s, British scholar John Elkington introduced the triple-bottom-line (TBL) as a concept that aims at balancing the economic, social, and environmental parameters of business sustainability (Elkington, 1998). This era took a broader dimension on the business role towards achieving sustainable development after the Brundtland Commission's agenda, which proposed "long-term environmental strategies that can achieve effective 'sustainable development' to the year 2000 and beyond" (Brundtland, 1987).

The twenty-first century was highly influenced by notions of sustainable development. This was evident in the World Business Council for Sustainable Development's definition of CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large" (World Business Council for Sustainable Development, 2008). Corporations started to draft their CSR reports around their roles to achieve sustainable development. The adoption of the term sustainable/ility increased the debate on the parameters of CSR and its relation to corporate sustainability. Bansal and Song (2017) highlight the systemic issues that arise when practitioners, as well as academics, use the terms sustainability and responsibility inconsistently, interchangeably, and ambiguously.

Finally, with the advent of the United Nation's Sustainable Development Goals (SDGs), corporations have started to adopt the goals as a framework for their CSR agendas and corporate sustainability reporting (Williams, Whiteman, & Parker, 2019). Unlike the Millennium Development Goals (MDGs), which were mainly state-centered, the 2015 SDGs shape a transformative shift in government and private sector cooperation. The SDGs address a delimited

number of sustainability issues that are relevant to businesses and their operations. The 17 goals incorporate 169 targets along with 232 indicators that can help organizations measure their sustainability performance as well as their progress towards the goals objectively (PWC, 2018; Scheyvens, Banks, & Hughes, 2016). The SDGs can help corporations respond better to sustainability issues by addressing defined targets under each goal. The SDGs can also help institutions identify their socio-ecological impacts in a way that can help managers map their CSR agendas from an "inside-out" approach, where firms define their corporate sustainability challenges and develop a strategy to reduce their operational externalities and enhance their socio-ecological impacts (Porter & Kramer, 2011). In this dissertation, we define corporate sustainability (CS) is defined as " the ability of a firm to manage sustainability impacts that are material, such as environmental or societal risks and opportunities, and to manage these impacts on sustainable development, such as positive and negative impacts on the environment and society" (Elalfy & Weber, 2019).

The term strategic CSR started when Drucker (1984) highlighted that CSR and business performance could correlate if CSR agendas were managed from a strategic approach. Drucker sheds light on how firms can achieve a competitive advantage when shaping their businesses towards addressing societal problems. His argument refutes instrumental CSR theories, which have been depicted around the trade-off between economic and social performance. This trade-off dilemma has been criticized by social economists, who emphasize the negative implications of focusing on short-term profits while ignoring long-term implications on other stakeholders such as employees and local community members (Bode, Rogan, & Singh, 2019). In the same lieu, Chandler and Werther (2010) define "Strategic CSR", as "the incorporation of a holistic CSR perspective within a firm's strategic planning and core separations so that the firm is managed in

the interests of a broad set of stakeholders to achieve maximum economic and social value over the medium to long-term" (p. 40).

Chandler and Werther (2010) highlight four key underpinnings that distinguish strategic CSR from other literature in the domain. First, managers should develop and implement their sustainability agendas via a strategic planning process that cascades corporate-level to functional and operational-level strategies. Second, CSR should become 'core' across all of a firm's operations and not merely a 'function,' such as marketing or public relations. Third, firms incorporate a stakeholder perspective that goes beyond shareholders. Fourth, and a very significant variable of strategic CSR, is the transition from a short-term to a long-term temporal outlook, which is the core of the Brundtland's definition of sustainability (Gibson, 2006).

In practice, Chief Executive Officers' focus should shift from quarterly economic performance to long-term investments with an outlook that exceeds three years. The longer the time, the less the trade-off between financial gains and corporate sustainability, which is an investment that realizes its rewards over the long haul. Essentially, responsibilities, costs, and risks should be shared and communicated via effective dialogues among all stakeholders. Therefore, strategic CSR provides a better framework for a firm to retain its societal legitimacy and corporate sustainability through a process that maximizes a firm's growth, adapts to market dynamics, and considers a broader array of strategic stakeholders (Chandler and Werther, 2010).

Additionally, sustainability found entrance into corporate strategy and reporting in the form of eco-efficiency promoted by the World Business Council for Sustainable Development (Stigson, 2001). This approach was the first that claimed a win-win-situation between corporate sustainability and financial performance (Winn, Pinkse, & Illge, 2012). Consequently, in the new millennium, corporations started using "sustainability reports" as an evolvement of CSR in a way

that reflects the connection between sustainable development and business (Adams, 2017).

Corporations use multiple platforms to communicate on their sustainability performance to stakeholders such as annual sustainability reports, frequently referred to as CSR reports, official webpages, and most recently social media platforms such as Twitter and Facebook (Gómez-Carrasco et al., 2020; Lee et al., 2013). Reporting on a firm's sustainability performance should enhance its reputation and legitimacy (Hamrouni et al., 2019). Suchman (1995, p. 574) emphasizes that "legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". CSR reporting also helps stakeholders understand the vision, mission, and operational strategies of organizations, which can result in the appreciation of a firm's goodwill (Brammer et al., 2012).

Several institutions have had extensive efforts to harmonize and standardize sustainability reporting such as the International Organization for Standardization (ISO), the Integrated Reporting Council (IIRC), the Sustainability Accounting Standards Board (SASB), Task Force on Climate-related Financial Disclosures (TCFD), and the Global Reporting Initiative (GRI), which has been the most popular reporting framework adopted by the majority of firms globally (PWC, 2018; Rosati and Faria, 2019). Bebbington and Unerman (2018) argue that SDGs play a critical role in the advancement of CSR and sustainability reporting domains on academic research as well as industry perspectives. In practice, existing reporting frameworks such as SASB and GRI have started to map their indicators towards the SDGs in a way that can help organizations measure their sustainability performance, benchmark their contribution towards the SDGs, and help advance the quality of their reports (United Nations Global Compact and KPMG International, 2015).

The SDGs provide a robust framework for strategic CSR since the goals have an outlook of 2030. The SDGs also represent a transformative governance dialogue that incorporates a tripartite of stakeholders namely the private sector, governments, and civil society members. The 17 goals along with the 169 targets and 232 indicators represent a comprehensive agenda for sustainable development and strategic CSR.

Reporting on a firm's sustainability performance to internal and external stakeholders should enhance its reputation and operational legitimacy as well as reduce information asymmetry (Hamrouni, Boussaada, & Ben Farhat Toumi, 2019). CSR reporting also help external stakeholders and investors understand a firm's vision, mission, and operations in a way that increases the valuation of a firm's goodwill (Brammer, Jackson, & Matten, 2012). Firms may publish CSR reports to increase their legitimacy by addressing the needs of their shareholders and other stakeholders (Suchman, 1995; Wilmshurst & Frost, 2000). Legitimacy theory has a rich academic background rooted in theoretical frameworks of stakeholder theory, institutional theory, and management theory. Recent academic publications and industry reports highlight that corporations have started to integrate the SDGs into their sustainability strategies as well as their corporate sustainability reporting (United Nations Global Compact and KPMG International, 2015, PWC, 2018, Rosati and Faria, 2019, Scheyvens et al., 2016).

1.1 Research Gap

The SDGs have impacted academic literature and business practices. SDG-based CSR reporting has increased significantly in a very short time. According to a recent report published by PricewaterhouseCoopers (PWC), 62% of the firms included in their sample mention the SDGs in their sustainability report (PWC, 2018). However, the report criticizes the ambiguity and inconsistency of reporting on the SDGs, where firms do not connect the 17 goals to their core

business, which is fundamental to achieving strategic CSR (Orlitzky, Siegel, & Waldman, 2011). In a recent study, Rosati and Faria (2019) highlight the relationship between institutional factors and reporting on SDGs. The authors highlight that due to the novelty of SDGs, there is a need to understand the drivers that influence SDGs reporting across organizations, sectors, and countries.

Additionally, based on sustainability and legitimacy theories, firms may report on their sustainability performance to increase their operational legitimacy (Suchman, 1995, Wilmshurst and Frost, 2000). However, there is a gap in identifying the relationship between the nature of a firm's characteristics and SDGs reporting.

Third, since the SDGs have an ambitious fifteen-year agenda, there is a gap in understanding the changing nature of reporting platforms such as using social media to report on CSR agendas as well as firms' progress towards achieving the SDGs. Fourth, and in the same realm, there is a critical need to understand 'how' firms report on the SDGs. To elaborate, we need to understand if firms report on the SDGs that are mandated by stakeholders to gain legitimacy or on the goals that are linked to their core business operation hence adopting a strategic CSR framework. This dissertation aims at fulfilling the four research gaps through five manuscripts that tackle CSR from a strategic lens in relation to the SDGs.

1.2 Research Questions

While each of the five manuscripts aims to answer a set of predefined questions, the entire dissertation aims to contribute to the literature on strategic CSR, the SDGs, legitimacy theory, and CSR reporting practices through answering the following questions:

1) How has the introduction of the SDGs impacted the academic literature on CSR?
2) How can the SDGs, as a global sustainability agenda, serve global CSR reporting frameworks?

3) What is the relationship between the SDGs and Strategic CSR?
4) What are the contemporary trends in CSR reporting with a special emphasis on SDGs reporting?

1.3 Organization of The Thesis and Sub-Research Questions

This dissertation is organized as follows: Chapter 1 includes the introduction to the main purpose of this research, the research questions, and a brief on each of the five manuscripts. Chapter 2 presents a literature review on the main bodies of knowledge relevant for this research and provides a novel *scoping review* on the evolution of CSR literature in the SDGs world. Considering the ambitious fifteen-year outlook of the SDGs, this chapter provides a timely overview to clarify key concepts within CSR literature and highlight central implications of research gaps and trends. This chapter aims to deepen the understandings of 1) how the global adoption of the SDGs has influenced academic literature on strategic CSR? and 2) what new elements define CSR practices in the SDGs era? Theoretically, this chapter draws on strategic CSR literature (Bansal & Song, 2017; Drucker, 1984) to provide a holistic perspective on 'how' and 'why' firms are integrating CSR into core planning, processes, and structures intending to create both social value and corporate value (Chandler & Werther, 2010).

Further, chapter 3, provides a unique study that analyzes the integration of the SDGs into CSR reporting based on the GRI dataset. This chapter contributes to the literature on legitimacy theory by identifying the factors that influence SDGs reporting such as organizational size, being publicly listed, operating in sectors that have a high environmental impact, and finally operating in specific regions. To test the hypotheses on the four variables that impact reporting on SDGs we used the data of 14, 308 reports.

Chapter 4 provides a contribution to CSR reporting literature by highlighting various

platforms, which firms use to report on their CSR and SDGs progress, and sheds light on the use of social media as a tool for reporting. This chapter addresses whether firms report on the SDGs to increase their legitimacy by reaching a larger scale of stakeholders or they tend to report on the goals that are linked to their core business. The study analyzed more than 24,999 tweets from Standard and Poor 500 companies. Chapter 5 provides a global view of the changes in the CSR reporting frameworks, highlights some challenges in the CSR domain, and provides a set of recommendations to improve CSR reporting. Chapter 6 reflects on the reporting practices in the industrial and financial sectors due to their high economic, social, and environmental impacts and provides insights on the changes needed in the CSR reporting domain. Chapter 7 summarizes the research conclusions, a discussion of the results, the contribution of the dissertation to theory, literature, and industry practices, and finally highlight future research.

1.4 Contribution to Knowledge

Four contributions have been identified throughout the published manuscripts of this dissertation. First, this research has confirmed that the SDGs can play a role in shaping the strategic CSR of corporations across the various sector, contributing to the literature on strategic CSR, SDGs, and corporate sustainability through conducted quantitative analyses. Chapter 2 represents a novel scoping review that provides a descriptive overview of how CSR research approached the SDGs. This review can help to deepen the understanding of potential synergies between the SDGs and global CSR practices.

Second, chapters 3 and 4 contribute to the literature on legitimacy theory by integrating scholarly works from the domains corporate reporting, SDGs reporting, and strategic CSR through validating the fundamentals of the theory on a new phenomenon, namely SDGs reporting. Our research provided quantitative analyses to test a set of hypotheses that impact the firms' reporting

practices hence increase their operational legitimacy.

Results from this research show that larger organizations tend to report more on SDGs than smaller firms. Additionally, publicly listed firms are more likely to address the SDGs in their reporting. Third, this dissertation contributes to the literature on CSR reporting and its applications in the industry by highlighting the contemporary issues in the domain and suggesting a set of recommendations that can entice decisions-makers in governments and the private sector to enhance the harmonization and standardization of reporting practices. Based on academic research and industry reports, we prove the case that the SDGs can help set a global framework for corporate sustainability. Fourth, the research highlights the contemporary applications of reporting such as the use of social media as a platform for CSR reporting. The analysis of the 24,000 SDG related tweets from Standard and Poor 500 companies opens the door to test Machine Learning and Artificial intelligence applications in the sustainability domain, mainly through data retrieval and analytics of sustainability and CSR related data from firms' online platforms, which can enhance the quality of strategic CSR reporting.

Chapter 2

2 Scoping the Evolution of CSR Research in the SDGs ERA

Amidst a contemporary culture of climate awareness, unprecedented levels of transparency and visibility are dictating industrial organizations to broaden their value chains and deepen the impacts of CSR initiatives. While it may be common knowledge that the 2030 agenda cannot be achieved on a business-as-usual trajectory. At its core, this chapter aims at understanding to what ends the SDGs have impacted CSR research and academic literature. This chapter provides a novel scoping review that highlights the linkages and interdependencies between the SDGs and the evolution of CSR practice.

This manuscript analyzes a final sample of 56 relevant journal articles between 2015-2020. With the intent to bridge policy and practice, thematic coding analysis supported the identification and interpretation of key emergent research themes. Using three descriptive categorical classifications (i.e. single-dimension, bi-combination of dimensions, sustainability dimension), the results of this paper provide an in-depth discussion into a strategic community, company, consumer, investor, and employee foci.

The analysis conducted provides a timely and descriptive overview of how CSR research has approached the SDGs, and which are being prioritized. By deepening understandings of potential synergies between business strategy, global climate agendas, and the common good, this manuscript contributes to increased comprehension of how CSR and financial performance can be improved over the long-term.

This chapter is adapted from: ElAlfy, A., Palaschuk, N., El-bassiouny, D., Wilson, J., & Weber, O. (2020). Scoping the Evolution of Corporate Social Responsibility (CSR) Research in the Sustainable Development Goals (SDGs) Era. Sustainability, 12(14).

MANUSCRIPT BEGINS

2.1 Introduction

In a paradigm characterized by unprecedented levels of transparency and visibility, public stakeholders and disclosure standards have gained considerable power in their ability to drive trends toward more sustainable business practices. Amidst the advent of the SDGs, global sustainability discourse has progressed to a point where it is inseparable from the role of the firm (Marcus, Kurucz, & Colbert, 2010). What must be considered a keystone element of progressive competitive strategies, creating shared value for the common good, has become integral to *CSR* in a way that changes the narrative on 'what' constitutes CSR and 'how' companies approach it in practice (Martinez-Ferrero & Frias-Aceituno, 2015). Under cognitive framings of managerial decision-making, past CSR behaviour (s) and associated performance implications have been shown to strongly influence the perceptions of leadership regarding the relevance of social and environmental issues in value creation (Pérez-López, Moreno-Romero, & Barkemeyer, 2015). Conceptualized under ethical motives for societal well-being, the proliferation of business case(s) for CSR now materializes as a fiduciary duty and the sustainability case of business (Weber & Feltmate, 2016). As the concept of CSR evolves, it is critical to understand how the SDGs and sustainability more broadly are influencing corporate strategy, CSR agendas, reporting practices, disclosure mechanisms, stakeholder expectations, and regulatory requirements.

The motivations for investing in CSR initiatives and integrating them into business strategy are grounded in a shared desire to ensure a firm's long-term success and survival (UN Global

Compact, 2018). By aligning the purpose and values of CSR with market drivers and stakeholder demands, CSR practices have become due diligence for preserving the firm's license to operate, avoiding reputational damages, building loyalty, and maintaining competitive positioning (Rupley, Brown, & Marshall, 2017). Empirically grounded, the impacts of CSR on financial performance can be explained through top-line growth (Hristov & Chirico, 2019), decreased cost to capital, increased reputation and goodwill (Tian & Robertson, 2019), and reduced technical and material risks (Schaltegger, Lüdeke-Freund, & Hansen, 2012).

Further, recent studies have shown that firms with well-coordinated and self-organized CSR strategies outperform their counterparts across similar industry groupings (Bernow, Klempner, & Magnin, 2017; Galant & Cadez, 2017). Superior share price performance has also been exhibited by companies listed on sustainability indices (i.e. *Dow Jones Sustainability Ind*ex, *FTSE4Good*) when compared to companies listed in their non-sustainable counterparts (Schaltegger & Burritt, 2018). While a notable rise in the number of company's publishing CSR reports can be observed, the quality and consistency of content being disclosed vary significantly (Tschopp & Huefner, 2015). This becomes further compounded by the heterogeneity amongst global reporting standards and divergence in rating(s) criteria. According to Berg et al. (2019), this is what can be referred to as "*aggregate confusion*" (Berg, Koelbel, & Rigobon, 2020). Even with nearly 1400 companies, spanning 160 countries operating as signatories to the *United Nations Global Compact* (Schrettle, Hinz, Scherrer-Rathje, & Friedli, 2014)*,* the simple fact remains that companies are afforded an overly flexible disclosure process which reinforces issues of evaluation, comparability, and ultimately usefulness (Wolnia & Habek, 2016)

Whether pursuing business cases of CSR is enough to satisfy global sustainable development remains subject to debate within and across academic disciplines. Often resting on *a priori*

organizational frameworks, the legitimacy of this logic falls short when sustainable development is reduced under neo-liberal economic rationality or economic performance leveraged with coincidental CSR contributions (Nguyen, Yang, Nguyen, Johnson, & Cao, 2019). In practice, bottom-line implications are left vulnerable to capricious public opinions, senior management turnover, and quarterly financial cycles (Urbański & ul Haque, 2020). Deeply ingrained throughout conventional cost accounting and performance management is a utilitarian view that rewards manager's and senior leadership when acting as self-seeking opportunistic individuals with the intent to maximize personal economic interests (Waddock & Graves, 1997). Materializing in the form of 'greenwashing', the reduction of CSR under win-win scenarios at the intersection of the triple bottom long constitutes a key managerial motivation for CSR and a conventional approach to building the business case (Pimonenko, Bilan, Horák, Starchenko, & Gajda, 2020). Rather than an end in-of-itself, CSR activities are treated as philanthropic add-ons necessary for catering to current public opinion while securing loyalty (Burritt & Schaltegger, 2010; Nguyen et al., 2019). This does little in the way of transforming organizational behaviour in a manner that is required to support meaningful progress on the SDGs. This underscores that the very notion of 'doing well by doing good' is fundamentally a proposition of diminishing returns (Freeman, Harrison, Wicks, Parmar, & Colle, 2010; M.E. Porter & M.R. Kramer, 2011).

Demonstrable of a lack of managerial know-how and information for intervention selection/design, research indicates that such realities negatively mediate management's motivation/ commitment to CSR (Schaltegger & Burritt, 2018). Until this rationale is addressed systematically, strategic CSR literature will continue to turn-out isolated success stories. As identified by Schaltegger et al. (2012), this will require that the formulation and implementation of the strategy move away from those that only strive for market sustainability through competitive

advantages in the sense of the Resource-Based View (RBV) of the firm. By aligning the purpose and values of CSR with market drivers and stakeholder demands, CSR practices have become due diligence for preserving the firm's license to operate, avoiding reputational damages, building loyalty, and maintaining competitive positioning (Schaltegger et al., 2012). Empirically grounded, the impacts of CSR on financial performance can be explained through top-line growth (Hristov & Chirico, 2019), decreased cost to capital, increased reputation and goodwill (Tian & Robertson, 2019), and reduced technical and material risks (Schaltegger et al., 2012).

With respect to research, Bansal and Song (2017) highlight that despite novel insights being made on the role of the firm and its embeddedness within the business-society-nature interface, the variability among its subjective interpretations has limited construct validity in practice. Nevertheless, since the introduction of the SDGs, many firms have begun to strategically engage with the international framework as a means of creating functional linkages between performance outcomes and the common good (Williams, Whiteman, & Parker, 2019). An integrated framework comprised of 169 targets and 232 unique indicators, the SDGs have shifted CSR discourse from being reactive to stakeholders' mandates to a proactive one that helps firms play an active role in influencing sustainable development trajectories (Elalfy & Weber, 2019).

Therefore, this paper aims at providing a scoping review to synthesize academic literature on CSR since the global adoption of the SDGs. With the intent to deepen understandings of whether and how it has affected CSR research articles were retrieved from 2015 to 2019. This paper seeks to deepen the understandings of 1) how the global adoption of the SDGs has influenced academic literature on strategic CSR? and 2) what new elements define CSR reporting best practices in the SDG era? Theoretically, this paper draws on strategic CSR literature (Bansal & Song, 2017; Drucker, 1984) to provide a holistic perspective on 'how' and 'why' firms are integrating CSR

into core planning, processes, and structures intending to create both social value and corporate value (Chandler & Werther, 2010).

Using three scientific databases (i.e. Sci-verse Scopus, Science Direct, ISI Web of Science), the review conducted in this study consisted of a final sample of 56 peer-reviewed articles. By exploring 'whether' and 'how' the advent of the SDGs framework has impacted strategic CSR research, this paper (1) identifies trends in research output, (2) identifies key gaps within the existing literature, and (3) elaborates on current understandings of CSR-SDG linkages to identify opportunities and aid future research. The remainder of the paper is structured as follows: first, a historical review of the evolvement of the CSR literature is provided and the case for the theory of strategic CSR is positioned. Next, the method adopted to conduct the scoping review is discussed and then the results of the study are shared. Following, several research implications are highlighted and avenues for future research are presented and finally, the conclusions and research limitations of this study are provided.

2.1.1 Background

CSR has existed in the academic literature for more than fifty years without a global consensus on its definition or standard set of application criteria (Jamali & Karam, 2016). The current reporting landscape covers a wide range of topics including social issues, philanthropy, sustainability, and environmental issues, and an ever-changing set of terminology to capture the ethos of the concept. While the underlying frameworks underpinning these abstractions may imply differing ideals of firm purpose, they share a normative belief that companies have a responsibility beyond pure profit-seeking to include economic, social, and environmental concerns. The integration of these three dimensions, explains the proliferation of the term 'sustainable' as a core concept in CSR nomenclature (Kolk, 2010).

Furthermore, the adoption of the term sustainable/ility introduces further definitional confusion. The question remains whether sustainability is a dimension of CSR or does sustainability imply an expansion of the concept beyond simply the ‘social’ and require the use of a new lexicon? The interchangeability of open-ended terms like sustainability and responsibility as part of CSR literature has perpetuated ambiguity and the meaning of the concept to be widely interpreted. Bansal and Song (Bansal & Song, 2017) highlight the systemic issues for both research and practice that arise when managers and academics alike use the words responsibility and sustainably interchangeably, inconsistently, and ambiguously. Porter and Kramer (Porter & Kramer, 2006) highlight that while lauded conceptually, incongruencies throughout CSR measurement and lack of strategic orientation undermine corporate progress on sustainable development. This in part is addressed by Drucker (1984), who referred to the notion of strategic CSR, which can enhance the competitive advantage of corporations. Under this paradigm, CSR is no longer seen as an add-on to business operations but a strategy that is cascaded across all functions (Weber, 2014). Werther and Chandler (2010) define “Strategic CSR”, as “*the incorporation of a holistic CSR perspective within a firm’s strategic planning and core operations so that the firm is managed in the interests of a broad set of stakeholders to achieve maximum economic and social value over the medium to long-term*” (Chandler & Werther, 2010, p. 40). Strategic CSR offers a new lens to underpin CSR focused on strategic and operational integration as a means of improving competitiveness, performance, and profitability (Porter & Kramer, 2006; Werther & Chandler, 2010).

An additional challenge is that while CSR is a global concept, it is applied differently across social, economic, legal, and political contexts. As an inherent part of the CSR concept, this remains true for communicating and reporting on CSR engagement, which by its very nature, is affected

by differing regulatory requirements, disclosure mechanisms, and stakeholder expectations. Fifka (2013) studied how research approaches regarding CSR reporting differ across countries and regions. Cultural and geographic heterogeneity from both norm-based and regulatory framework poses undeniable challenges. This inconsistency highlights the need for a globally accepted reporting framework and disclosure mechanisms. Before achieving these needs, the business community requires a shared vision to frame CSR. The UN Sustainable Development Goals (SDGs) offer that vision, and, more importantly, an opportunity to align business models with national commitments to sustainable development (Williams et al., 2019).

Common wisdom holds that sustainable development, across all levels, is not possible without the sustainable development of corporations (Krause, Gladwin, & Kennelly, 2009). With respect to CSR practice, sustainable development literature has become particularly relevant in envisioning development pathways, defining actionable goals, creating indicators, and asserting values(Carroll, 1999). Such is the paradigm of *Corporate Social Responsibility* (Freeman et al., 2010). Dependent on common-pool resources as systems inputs, these firms have a shared responsibility to contribute to societal well-being. By doing so, the needs of future generations become internalized in organizational culture and corporate value chains (Bansal & Song, 2017).

2.1.2 Sustainable Development Goals (SDGs)

The SDGs were adopted by the United Nations General Assembly in September 2015 as part of the 2030 Agenda for Sustainable Development. Characterized as a "new, universal set of goals, to develop a global vision for sustainable development by, balancing economic growth, social development, and environmental protection" (United Nations, 2015). The SDGs can be seen as a novel approach to global governance through goal-setting and tailored eco-feedback processes. The SDGs were developed through inter-governmental collaboration using public engagement

processes to actively mobilize and consult national governments of both 'developing and 'industrialized' countries in addition to various civil society groups (Biermann, Kanie, & Kim, 2017).

As successors to the Millennium Development Goals (MDGs), the SDGs are expected to do better in addressing issues of sustainability. Moving well beyond the scope of the MDGs and the traditional "three-pillar" approach to sustainable development, the SDGs framework is intended to be universal, calling for integrative approaches that link human development and environmental sustainability (Galli & Bassanini, 2020). As a policy framework guiding society towards long-term prosperity, the SDGs represent an important set of next steps in the evolution of transitions policy. While there is growing recognition regarding the potential for the SDGs to drive global-scale transformations towards more sustainable futures, the role of corporations in supporting the process, and how the SDGs inform business models lacks clarity. Nevertheless, in many ways, the SDGs are tailored for companies looking to integrate sustainability into their business plans. The global SDG targets can be translated into a national context and framed to comply with national regulatory requirements while addressing sustainability specific to time and space (Hák, Janoušková, & Moldan, 2016). Mawdsley (2018) asserts that the private sector has particular strengths to deliver on the SDGs which include but are not limited to a capacity for innovation, efficiency, responsiveness, and provision of specific capabilities and resources.

Additionally, Martinuzzi et. al. (2017) suggest three ways the SDGs may prove beneficial as an underlying framework to guide corporate responsibility. First, the SDGs contain 17 agreed-upon sustainable development priorities broken down into targets of which many are directly relevant to the business. Second, these globally accepted goals are endorsed by governments, businesses, and civil society providing a common agenda for all stakeholders to rally around.

Third, the SDGs fully acknowledge the complexity, trade-offs, and systemic nature of sustainable development issues. Moving forward, the challenge for strategic CSR management is that of navigating a dynamic equilibrium, balancing short-term benefits with the long-term vision of sustainable development (Waddock & Graves, 1997).

By aligning business approaches with the SDGs, corporate leaders can begin to redirect investment flows in a manner that maximizes value creation opportunities on sustainable development. Further, it can assist organizations in reducing risk, identifying opportunities, and determining long-term innovation solutions for addressing SDGs. As a result, business and sustainable development agendas can and must be aligned if firms hope to move towards the macro-economic realities of sustained superior financial performance. This "phenomenon-driven" review paper contributes important insights about the current state of research on SDGs and CSR and enriches the understanding of how the SDGs can drive the proliferation of strategic CSR. Situated within broader sustainability literature, this paper's concept of CSR is not static. Given the continual evolution of CSR as a standalone body of knowledge, a scoping review is warranted. Outlined by Tricco et al. (2016) scoping reviews are different from systematic reviews and literature reviews in that the former provides a focus on diverse bodies of literature pertaining to a broad topic while the latter two direct search queries around a focused research question. Considering the ambitious fifteen-year agenda set forth by the SDGs and historical inconsistencies perpetuated by CSR research, this review provides a timely overview for clarifying key concepts while identifying central implications of gaps and trends.

2.2 Materials and Methods

2.2.1 Scope of the Review

Scoping studies provide a grounded methodology for mapping concepts within a research domain and ontology of current research and practice-based evidence (Levac, Colquhoun, & O'Brien, 2010). Past scoping reviews have been used by researchers to identify, organize, and analyze studies that are published within a domain to highlight knowledge gaps, develop future research agendas, and shed light on implications for decision-making (Grant & Booth, 2009; Tricco et al., 2016). A key component of the scoping process involves the clarification of reporting guidelines and stepwise checklist to ensure transparency, reliability, and repeatability of methods. This is particularly relevant given the strategic focus of this paper. Consequently, this review adopted the five-stage framework forwarded by Arksey and O'Malley (2005) which includes: 1) identifying the scope of the study and research questions, 2) identifying the scale of relevant studies, 3) selecting relevant studies that match inclusion/exclusion criteria, 4) charting the data, and 5) summarizing and reporting the results.

While the reasoning behind why researchers might favour scoping reviews over more systematic counterparts vary, scoping reviews are viewed as a valid approach and alternative when systematic reviews are not possible. According to Munn et al. (2018), scoping reviews are particularly "useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed" (Munn et al., 2018, p. 2). Given the recency and limited temporal period (i.e. 2015-2020) in which this study is focused, this review paper might be viewed as a natural precursor to future systematic reviews upon the conclusion of the 2030 agenda. By exploring 'whether' and 'how' the advent of the SDGs framework has impacted strategic CSR research, this paper might serve as a platform for informing future, more directed inquiries

regarding the antecedents versus determinants and mediators versus moderators of this relationship.

2.2.2 Search Protocol

Using three scientific online databases (i.e. ISI Web of Science, Sci-Verse Scopus, and Science Direct), articles focused on corporate social responsibility, and the Sustainable Development Goals were retrieved. These databases were chosen due to their broad coverage, advanced search capabilities, and to maximize the inclusivity of the resulting dataset (Palaschuk & Bullock, 2019). While we acknowledge the multiplicity of terms used interchangeably with CSR throughout the literature, this paper emphasizes strategic CSR as expressed by Werther and Chandler (Werther & Chandler, 2010) that denotes four key underpinnings:

1. firms incorporate a CSR perspective within their strategic planning process;
2. any actions firms take are directly related to core operations;
3. firms incorporate a stakeholder perspective; and
4. firms shift from a short-term perspective to managing the firm's resources and relations with key stakeholders over the medium to long-term (Werther & Chandler, 2010).

Given the specificity of this construct and variability in which sustainability language materializes in practice, terms used synonymously were not included in the search of relevant publications. Electronic databases were searched, whereby articles containing the search term: "corporate social responsibl* AND sustainable development goal*" in their title, abstract, or keyword(s) were documented and stored using "Mendeley" reference management software. Designed to account for variance among suffixes and plural phrases, the same search term was used across databases to ensure consistency (Palaschuk & Bullock, 2019). It is noted that scoping studies are capable of reporting evidence from a variety of sources including books, working

reports, corporate disclosure documents, websites, rating agencies, and disclosure standards. However, given the limited time frame, this review focuses solely on journal articles under the assumption that most research output in this time period can be expected to have occurred in 'serial' periodicals. Moreover, and speaking to the nature of scoping reviews, this paper is selective and not exhaustive.

Following initial article retrieval and prior to any data filtration, a snowball approach was used to collect any unfound articles from our sample reference lists. This was conducted to increase the robustness of the article sample. The final step of sample refinement required that all retrieved articles meet one or more of the following inclusion/exclusion criteria (Colquhoun et al., 2014):

1. articles must contain a direct reference to corporate social responsibility and the sustainable development goals in the title, keywords, or abstract;
2. CSR-related activities related to strategic firm-level initiatives were implemented in reference to the SDGs;
3. the impact of the SDGs on corporate operating models and relevance as an Integrated Reporting (IR) framework were discussed; and,
4. the content of the article met the definition and core underpinnings of Strategic CSR set out by Werther and Chandler (Werther & Chandler, 2010).

The initial search retrieved 146 peer-reviewed articles from the three databases between 2015 and 2020. Initial vetting and removal of duplicate articles left 91 articles remaining for consideration. After applying the inclusion/exclusion criteria, 56 articles were left to constitute the final data sample. A classification process of the SDGs mentioned per article was conducted using NVivo, which is a qualitative data analysis software. Using the NVivo software provided data security and easy access and manipulation throughout the coding process. The final sample of 56

articles was analyzed using the following metrics: 1) author(s), 2) journal name, 3) year of publication, 4) publisher, 5) study location (by country), 6) SDGs covered, 7) sustainability dimensions (i.e. single, bi-combination, sustainability), and 8) sustainability research themes.

Previous studies were used to help inform and guide qualitative thematic coding processes and help saturate emergent criteria and elements. Coding is an iterative process of categorizing and sorting data, where codes represent categories that help summarize, synthesize, and organize themes characterizing a dataset (Strauss, 1987). Additionally, Gibb's (2007) process of 'thematic' coding was applied to the final sample of this study due to its particular usefulness in creating codes that are analytically and theoretically robust rather than being purely descriptive. With the intent to deepen insights as to the proliferation of the SDGs in CSR research discourse, thematic coding emphasized the identification, analysis, and interpretation of patterns of meaning (or "themes") within the dataset.

2.3 Research Findings and Results

2.3.1 Charting The Data

The analysis of this study shows that research on the topic of CSR and SDGs has increased substantially since 2015 with approximately 55% of the final sample being published in 2019 (see Figure 1). Given that the search protocol included articles published up to and including the end of January 2020, it is expected that the number of articles in 2020 is lower relative to previous years.

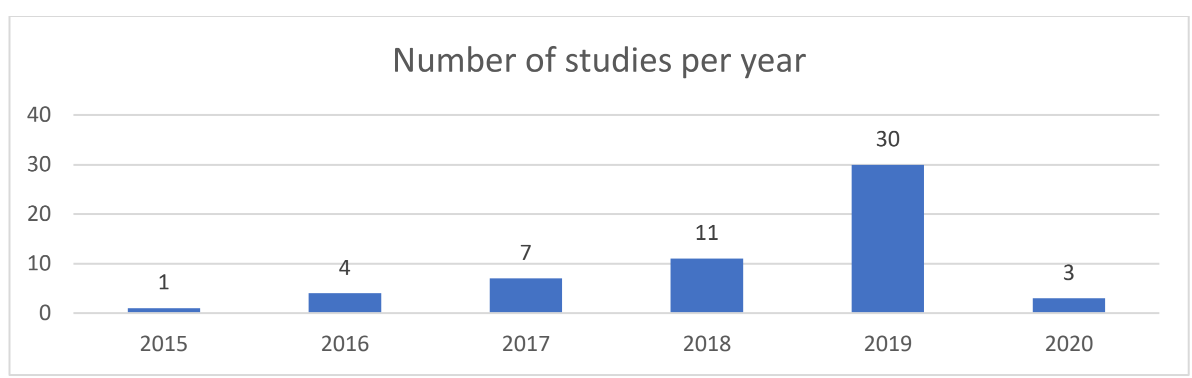

Figure 1: Number of publications per year

The studies were published in reputable journals such as the Journal of Cleaner Production, which has the highest number of published articles on the subject followed by the Sustainability journal, and finally the European Journal of Sustainable Development. For the full list of published articles per journal see Table 1 below.

Table 1: Full list of the number of published articles per journal

Journal	**Published Articles**
JOURNAL OF CLEANER PRODUCTION	6
SUSTAINABILITY	5
EUROPEAN JOURNAL OF SUSTAINABLE DEVELOPMENT	3
CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	2
JOURNAL CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	2
SUSTAINABLE DEVELOPMENT	2
TRANSNATIONAL CORPORATIONS	2

BUSINESS AND POLITICS	1
BUSINESS ETHICS	1
BUSINESS STRATEGY AND THE ENVIRONMENT	1
CENTRAL ASIA AND THE CAUCASUS	1
CORPORATE GOVERNANCE (BINGLEY)	1
EXTRACTIVE INDUSTRIES AND SOCIETY	1
GEO JOURNAL	1
GLOBALIZATION AND HEALTH	1
HUMAN RESOURCE MANAGEMENT REVIEW	1
INTERNATIONAL JOURNAL OF INFORMATION MANAGEMENT	1
INTERNATIONAL JOURNAL OF NONPROFIT AND VOLUNTARY SECTOR MARKETING	1
JOURNAL OF CORPORATE LAW STUDIES	1
JOURNAL OF MANAGEMENT SPIRITUALITY AND RELIGION	1
JOURNAL OF SUSTAINABLE TOURISM	1
JOURNAL BUSINESS AND POLITICS	1
JOURNAL INTERNATIONAL FOOD AND AGRIBUSINESS MANAGEMENT REVIEW	1
JOURNAL INTERNATIONAL JOURNAL OF SOCIOLOGY AND SOCIAL POLICY	1
JOURNAL INTERNATIONAL JOURNAL OF SUSTAINABLE DEVELOPMENT AND WORLD ECOLOGY	1
JOURNAL OF HUMAN RIGHTS PRACTICE	1

WASHINGTON INTERNATIONAL LAW JOURNAL	1
PROBLEMS AND PERSPECTIVES IN MANAGEMENT	1
SOCIAL AND ENVIRONMENTAL ACCOUNTABILITY JOURNAL	1
SOCIAL SCIENCES	1
STRATEGY AND LEADERSHIP	1
WORLD DEVELOPMENT	1

Source: developed by the authors using articles retrieved from *Scopus, Science Direct, and Web of Science*.

Distribution of studies by country

The final sample is geographically diverse, including articles published in both developed and developing countries. As shown in figure 2, the United Kingdom had the highest number of published articles followed by Australia, Spain, and Germany. Out of the 56 articles we analyzed in this scoping review, 48 articles are published from developed countries while 8 publications are from developing countries. The degree to which geographic clustering can be expected to exist is largely dependent on stakeholder awareness and availability of slack resources, which currently, favours markets in developed countries (Waddock & Graves, 1997). Noteworthy topics for future comparative analyses might focus on assessing geographical disparities outlining 'how' and 'why' strategic CSR varies across context and measuring the depth and degree to which firms can realize the benefits of CSR engagement in developed versus developing economies. While controlling for organizational and contextual influences, the United Nations' SDGs framework should provide an internationally transferable measurement framework with 169 targets that might be translated and compared at the organizational level.

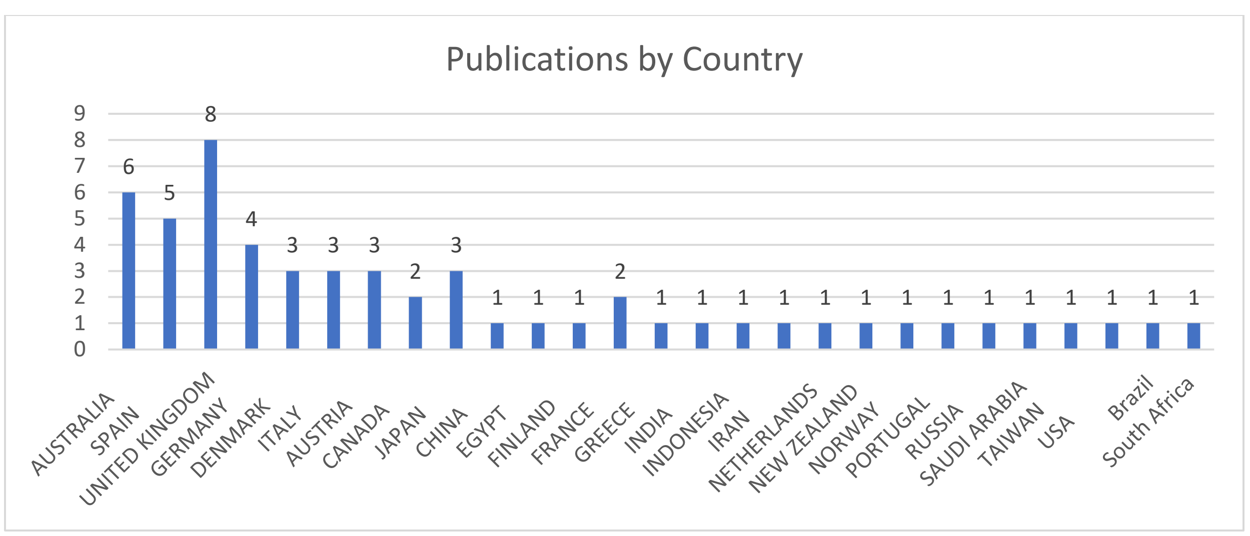

Figure 2: Publications by country

Distribution of articles based on SDG Focused

As shown in Figure 3, a large proportion of articles were conducted under a generic lens, linking corporate CSR activities with a general mention of progress towards the achievement of the SDGs. Relatively, a smaller cohort of articles adopted a narrowed lens connecting specific SDGs to CSR activities. The following section of this paper provides a thematic analysis of the 56 articles and highlights the main SDGs within the papers, which are summarized in Table 1.

In line with findings of previous CSR research, the analysis of this study highlights that there continues to be a hyper-emphasis on larger multi-/trans-national corporations in comparison to their small and medium enterprise counterparts (Cantele & Zardini, 2020).

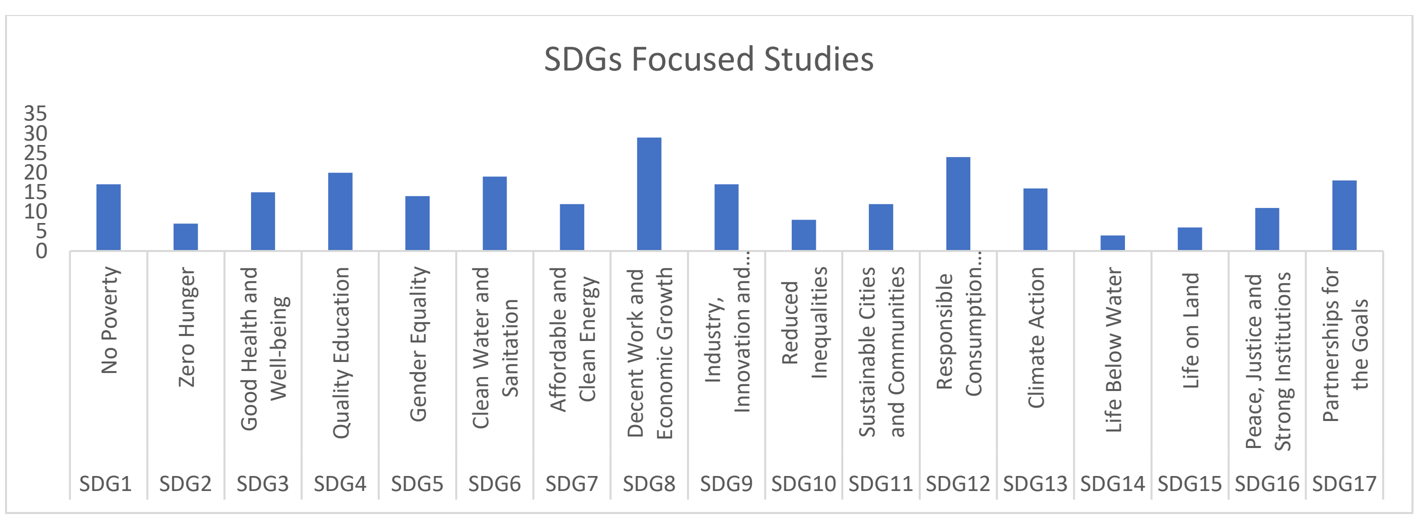

Figure 3: Distribution of articles based on SDGs focused

2.3.2 Thematic Analysis

Using qualitative thematic coding methodology, a categorical framework for article classification was created. The content analysis approach was used to examine and assess the degree and nature of the influence of the SDGs on CSR literature. In this paper, the three categories of sustainability dimensions framework by Alshehhi, Nobanee, and Khare (2018) were adopted to analyze the distribution of the articles. The three categories are:

1) Single-Dimension: Economic-Environmental-Social
2) Bi-Combination of dimensions: Socio-Economic, Economic-Environmental, and Social Environmental
3) Sustainability Dimension

Theme 1: Single-Dimension

The review of this study found 9 articles that highlight a single dimension of CSR, specifically the social (7 studies) and economic dimension (2 studies). These articles speak specifically to the social dimensions of corporate actions that aim at increasing societal welfare. As part of this paradigm, the role of internal and external stakeholders along with specific institutions are

highlighted with respect to their role in driving CSR agendas toward achieving the SDGs. Specific sub-themes of corporate social action and performance included corporate contributions toward poverty alleviation (Medina-Muñoz & Medina-Muñoz, 2020), solutions to social issues (Zavyalova, Studenikin, & Starikova, 2018), corporate CSR volunteering (Mañas-Viniegra, 2018), and corporate-civil society partnerships (Kelly, 2016). Articles examining societal influence in driving CSR focused on cultural values as a normative institutional pressure (Cubilla-Montilla, Nieto-Librero, Galindo-Villardón, Vicente Galindo, & Garcia-Sanchez, 2019) and the role of responsible management education (Borges, Ferreira, Borges de Oliveira, Macini, & Caldana, 2017; Ramboarisata & Gendron, 2019).

Articles focusing on the economic dimension of CSR address sustainable finance and investment while elaborating on the centrality of the business-case 'of' sustainability as a vector for continued CSR engagement. This includes Contreras et al. (2019) who explore the drivers of adopting voluntary sustainability regulations in financial institutions. In addition, Avery and Hooper (2017) studied how corporate CEOs can change organizational culture and performance by investing in CSR. Of the 9 articles focused on the economic dimensions of CSR, only 2 (i.e. Kelly, 2016) and Zavyalova et al. (2018) discuss corporate responsibility from a strategic lens that views CSR as a strategic planning process that can only be achieved through partnerships among concerned stakeholders. Most articles associated with this theme explore the SDGs from a holistic approach. That being a general focus on the framework rather than a specific reference to 1 or more goals. Two notable exceptions include Zavyalova et al. (2018) and Borges et al. (2017). The former article examines business projects that aim at solving social sustainability issues that can help achieve "socially-oriented" SDGs, specifically SDG 1,3,4,5,6,8 and10. The latter, Borges et

al. (2017), examine responsible management education hidden in the curriculum of business students with a focus on SDG (4) related to quality education.

Theme Two: Bi-Combination of dimensions

The analysis highlights that some scholars tackle sustainability from a two-dimensional viewpoint, either 1) socio-economic, 2) socio-environmental, and 3) environmental-economic. In this review, 8 articles examine CSR from a socio-economic dimension. In the first sub-category, namely the socio-economic dimension, the literature highlights that organizations, which invest in their CSR strategies, should enhance their goodwill, and develop trust from their stakeholders. Some authors adopted a corporate-oriented lens to reflect on the operationalization of CSR. For example, Buhmann, Jonsson, & Fisker (2019) explore how corporations can utilize their Human Resources (HR) towards achieving the SDGs. Likewise, Kim (2018), Rahdari, Sepasi, & Moradi (2016), and Bull & Miklian (2019) analyze the socio-economic dimension of CSR from a corporate-driven standpoint, which highlights the positive economic and social gains for an organization to invest in CSR agendas. Calabrese, Costa, Ghiron, & Menichini (2018) study the impact of gender equality on corporate governance, hence achieving robust CSR outcomes.

Nevertheless, some scholars focused on the socio-economic dimension of CSR from an outside-in approach, which targets external stakeholders such as investors (Miralles-Quirós, Miralles-Quirós, & Nogueira, 2018) or customers (Gider & Hamm, 2019; Soonsiripanichkul & Ngamcharoenmongkol, 2019). The socio-economic articles tackled the SDGs from a holistic perspective except for Bull & Miklian (2019), where the authors emphasize SDGs 1, 8, 12, and 13, which shed light on the economic and social implications of businesses.

Additionally, in the same category of the two-dimensional CSR strategies are the socio-environmental and the economic-environmental perspectives. In this review, only one article, that

being Naciti (2019) uses a socio-environmental lens to examine the role of an institution's Board of Directors in achieving better sustainability performance with a higher prominence on the social and environmental pillars. The author uses a strategic CSR framework that highlights the long-term dimension of CSR, which necessitates strategic collaboration among concerned stakeholders. The author uses a company-focused viewpoint with a holistic overview of the 17 SDGs. Finally, in the economic-environmental sub-category included two articles. The first by Naidoo & Gasparatos (2018), which examines the sustainability drivers within CSR agendas as well as the performance measurement and reporting in corporations. This article focused on SDG#12 and identified best practices for responsible consumption and production in the SDGs era. Likewise, Nurunnabi et al (2019) analyze energy efficiency as a tool to achieve the SDGs with a specific focus on goal #7.

Theme 3: Sustainability Dimension Studies

In the last categorization of this review, we identified articles that study CSR from a comprehensive viewpoint are identified that covers the economic, social, and environmental dimensions of sustainability. Out of the 56 articles included in this scoping review, 36 articles analyzed CSR from a comprehensive approach that aims to balance the economic, social, and environmental pillars of sustainability. The majority of these articles (32 articles) have a company-focused approach such as exploring the impact of CSR on company reputation (Grover, Kar, & Ilavarasan, 2019), identifying product, and process innovation within organizations towards achieving the SDGs (Denoncourt, 2019). The research on large organizations and multinationals still dominate the literature on CSR (Berning, 2019; Poddar, Narula, & Zutshi, 2019; Stahl, Brewster, Collings, & Hajro, 2019) with a little emphasis on the role of small and medium enterprises in achieving the SDGs through their CSR agendas.

Moreover, some scholars in the sustainability dimension used a community-focused lens to highlight the needs of interdisciplinary education programs in the academic world and industry to help achieve the SDG via strategic CSR approaches (Annan-Diab & Molinari, 2017). Other scholars adopted an employee-focused lens that highlights the importance of decent working conditions for employees (Robinson, Martins, Solnet, & Baum, 2019) especially gender issues in the workplace (Wofford, MacDonald, & Rodehau, 2016). Finally, an investor-focused lens that explores the role of responsible investors in achieving the SDGs (Bosch-Badia, Montllor-Serrats, & Tarrazon-Rodon, 2018). The majority of the articles in this theme (24 articles) covered SDGs in a generic sense. Yet, studies such as Denoncourt (2019), Katamba (2017), and Robinson et al. (2019) tried to link specific goals with the CSR practices of companies such as SDGs 8, 12, and 13.

2.3.3 Summary of Scoping Review Results

Table 2 summarizes the results of the scoping review. Although some single and bi-dimensional articles exploring CSR from one- or two-dimension(s) view CSR as a strategic planning process, articles adopting a comprehensive approach to CSR are the main articles tackling CSR from a strategic lens such as Poddar, Narula, & Zutshi (2019), Grover, Kar, & Ilavarasan (2019), and Fasoulis & Kurt (2019).

From a research-focus perspective, the articles under review were classified according to whether their studies focused on companies or other internal or external stakeholders such as employees, consumers, investors, and the wider community. The analysis of this study shows that most articles that follow a comprehensive sustainability approach are company-focused. A limited number of articles tackle sustainability from a stakeholder perspective for example Gider & Hamm

(2019), Miralles-Quiros Miralles-Quiros, & Nogueira (2018), and Wofford, MacDonald, & Rodehau (2016).

Finally, the majority of the articles under study discuss CSR in relation to SDGs in a generic manner such as Naciti (2019), Grzeda (2019), and Buhmann, Jonsson, & Fisker (2019). On the other hand, some studies tackled specific SDGs in their studies. For instance, Denoncourt (2019) examined the connection between CSR and SDG 9 "industry, innovation, and infrastructure). Likewise, Calabrese, Costa, Ghiron, & Menichini (2018) specifically studied the presence of SDG 5 'gender equality" among CSR managers. Other articles, however, mentioned more than one SDG in their studies. For instance, Barkemeyer & Miklian (2019) explored the implications of their results on more than one SDG and Zavyalova, Studenikin, & Starikova (2018) attempted to frame CSR initiatives of a leading multinational company under the umbrella of a number of SDGs. Overall, this review opens various potential avenues for new research in the business-society field in specific and sustainable development discipline in general. Future research recommendations are discussed in the following section.

Table 2: Summary of Review Analysis

Source	**Dimension**	**Strategic CSR**	**Research focus**	**SDG(s) covered**
(Naciti, 2019)	Socio-Environmental	✔	Company-focused	General
(Poddar et al., 2019)	Sustainability	✔	Company-focused	General
(Grzeda, 2019)	Sustainability	×	Company-focused	General

(Contreras et al., 2019)	Economic	×	Company-focused	General
(Grover et al., 2019)	Sustainability	✔	Company-focused	General
(Calero, García-Rodríguez De Guzmán, Moraga, & García, 2019)	Sustainability	×	Company-focused	General
(Cubilla-Montilla et al., 2019)	Social	×	Community-focused	General
(Fasoulis & Kurt, 2019)	Sustainability	✔	Company-focused	General
(Buhmann et al., 2019)	Socio-Economic	×	Company-focused	General
(Perkiss, Dean, & Gibbons, 2019)	Sustainability	✔	Company-focused	General
(Rosati & Faria, 2019)	Sustainability	✔	Company-focused	General
(Barkemeyer & Miklian, 2019)	Socio-Economic	×	Company-focused	SDG: 1, 8, 9, 12, 13
(Medina-Muñoz & Medina-Muñoz, 2020)	Social	×	Company-focused	General
(Denoncourt, 2019)	Sustainability	✔	Company-focused	SDG 9

(Lu, Ren, Lin, He, & Streimikis, 2019)	Sustainability	×	Company-focused	General
(Raj & Arun, 2019)	Sustainability	✔	Company-focused	General
(Cantele & Zardini, 2020)	Sustainability	✔	Company-focused	General
(Gunawan, Permatasari, & Tilt, 2020)	Sustainability	✔	Company-focused	General
(Gider & Hamm, 2019)	Socio-Economic	×	Consumer-focused	General
(Sukhonos, Makarenko, Serpeninova, Drebot, & Okabe, 2019)	Sustainability	✔	Company-focused	General
(Abdelhalim & Eldin, 2019)	Sustainability	✔	Company-focused	General
(Munro & Arli, 2019)	Sustainability	✔	Company-focused	General
(Stahl et al., 2019)	Sustainability	✔	Company-focused	General
(Liu, 2018)	Sustainability	✔	Company-focused	General
(Zavyalova et al., 2018)	Social	✔	Company-focused	SDGs 1,3,4,5,6

				,8,10
(Miralles-Quirós et al., 2018)	Socio-Economic	×	Investor-focused	General
(Avery & Hooper, 2017)	Economic	×	Company-focused	General
(Rahdari et al., 2016)	Socio-Economic	✔	Company-focused	General
(Guandalini, Sun, & Zhou, 2019)	Sustainability	×	Company-focused	General
(Robinson et al., 2019)	Sustainability	×	Employee-focused	SDG 8
(Avrampou, Skouloudis, Iliopoulos, & Khan, 2019)	Sustainability	×	Company-focused	SDGs #8, 10, 12
(Rosati & Faria, 2019)	Sustainability	✔	Company-focused	General
(Zimmermann, 2019)	Sustainability	✔	Company-focused	General
(Berning, 2019)	Sustainability	×	Company-focused	SDG 3,4, 8, 9,10, 11, 12, 13
(Kim, 2018)	Socio-Economic	×	Company-	General

			focused	
(Mañas-Viniegra, 2018)	Social	×	Company-focused	General
(Bosch-Badia et al., 2018)	Sustainability	✔	Investor-focused	General
(Calabrese et al., 2018)	Socio-Economic	×	Employee-focused	SDG 5
(Yakovleva, Kotilainen, & Toivakka, 2017)	Sustainability	×	Company-focused	General
(Ekiugbo & Papanagnou, 2017)	Sustainability	×	Company-focused	General
(Wofford et al., 2016)	sustainability	✔	Employee-focused	SDG 17, 3, 8
(Kelly, 2016)	Social	✔	Community-focused	General
(Scheyvens, Banks, & Hughes, 2016)	Sustainability	✔	Company-focused	General
(Sharma, 2015)	Sustainability	✔	Company-focused	General
(Banik & Lin, 2019)	Sustainability	✔	Company-focused	SDG# 8, 12
(Bull & Miklian, 2019)	Sustainability	✔	Company-focused	General

(Soonsiripanichkul & Ngamcharoenmongkol, 2019)	Socio-Economic	×	Consumer-focused	General
(Nurunnabi et al., 2019)	Economic-Environmental	×	Company-focused	SDG 7
(Selmier & Newenham-Kahindi, 2017)	Sustainability	×	Company-focused	SDG 8,5,16
(Schönherr, Findler, & Martinuzzi, 2017)	Sustainability	✔	Company-focused	General
(Ramboarisata & Gendron, 2019)	Social	×	Community-focused	General
(Borges et al., 2017)	Social	×	Community-focused	SDG 4
(Naidoo & Gasparatos, 2018)	Economic-Environmental	×	Company-focused	SDG 12
(Xia, Olanipekun, Chen, Xie, & Liu, 2018)	Sustainability	✔	Company-focused	General
(Katamba, 2017)	Sustainability	✔	Company-focused	SDG 3
(Annan-Diab & Molinari, 2017)	Sustainability	✔	Community-focused	General

Source: developed by the authors using articles retrieved from *Scopus, Science Direct, and Web of Science*.

2.4 Discussion and Implications for Future Research

The SDGs offer a shared vision to the roadmap by which businesses can begin to strategically align firm-level CSR initiatives with both national and international sustainable development agendas. This CSR – SDG nexus is crucial in enhancing the contribution of CSR to sustainable development. Based on the review conducted in this study, future research insights for more strategic implementations of CSR that can effectively contribute to the successful achievement of the development goals are highlighted below:

Investigating Actual Corporate Contribution to Sustainable Development

An emergent theme to this analysis highlights the role of corporations in elevating social problems and enhancing the well-being of society. While companies increasingly take action to improve their social and environmental performance, the effectiveness of these efforts in advancing progress toward the SDGs remains poorly understood. This points a critical gap and lingering need for empirically grounded research and evidence-based management systems that are necessary to accelerate and scale up the adoption of governance structures, reporting methods, and management innovations to achieve sustainable development. More specifically, deepened understandings of the impact(s) of CSR activities on sustainable development and the achievement of the SDGs is required. For instance, future research can assess the impact of a specific business sector as a whole or comparatively study the impact of one sector with other business sectors (Naidoo & Gasparatos, 2018).

In addition, the effectiveness of various CSR initiatives emphasizing poverty alleviation and the underlying driving forces of implementation can be explored. In this vein, corporations can enhance the strategic integration of social SDGs, specifically those related to poverty alleviation, by conducting and reporting short-term social targets and communicating them across the

company (Kelly, 2016). Such corporate dedication on a specific goal can eventually lead to the promotion of other SDGs (i.e. positive spillover). As a vehicle for more precipitous change, the action of this nature holds the potential to increase the scale and rate at which CSR-related impacts address macro-level sustainable development problems (Zavyalova et al., 2018). Moving forward, future research might begin to explore the most effective strategies companies can adopt to implement CSR projects that can effectively contribute to the long-term sustainable development of their societies.

While research exists on the role of multinational companies (MNCs) in driving sustainability, there is a need to further investigate the actual, and absolute positive contribution(s) of an MNC's CSR practices on sustainable development. Particularly, how does and what are the absolute impacts of firm-level CSR initiatives on the degree to which a given MNC is successful in attaining a given SDG. The notion of "giving back to society" in a mere philanthropic sense is becoming less legitimate in the eyes of stakeholders. As a result, this 'business as usual' approach has left the ability of businesses to face sustainable development challenges in question (Martinuzzi et al., 2017). Impact assessment studies should be performed to identify the positive developments that MNCs enhanced and the negative challenges that MNCs were able to eradicate or reduce. Since the SDGs highlight a wide range of sustainable development issues, more research is needed to identify the main Sustainable Development Goals where MNCs can provide the most significant positive impacts in various contexts and across different industries. Overall, it is important to gain insight into how the SDGs are being integrated into strategy and understand the potential value creation provided through the SDG framework. This will help research move towards more accurate and precise evaluations when determining the extent to which core CSR initiatives strategically address sustainable development problems and effectively implement the goals.

The Role of Financial institutions in driving Sustainable Development

While there is increasing interest in the role financial institutions play in driving sustainable development (Contreras et al., 2019), more research is required to measure the impacts of institutional action and the degree of influence they have on sustainable development progress. For instance, future studies might elaborate on the role of financial institutions in financing SDGs. This represents a significant element in enabling collective action and ensuring continued sub-national progress on relevant SDGs. In addition, future research might examine the triple bottom line impacts of adopting voluntary social and environmental guidelines (i.e. the Principles for Positive Impact Finance and the Equator Principle) on the degree and nature of cooperative collaboration between financial institutions, businesses and civil society members (specifically NGOs). Weber and Feltmate (2016) highlight that voluntary self-regulatory principles, specifically the Equator Principle (PE), significantly increase cooperation between institutions that adopt them. This draws specific attention to SDG 17, Partnerships for the Goals, and its centrality to enabling symbiotic, multi-stakeholder action networks. Exploring how such cooperation can contribute to the strategic implementation of CSR and the achievement of the SDGs amongst adopting institutions is an important avenue for future research.

The role of stakeholders in the implementation of strategic CSR models

More attention should be given on the role of stakeholders in achieving effective implementation of the goals across the globe. It is argued that the SDGs are "macro-ethics" where individual ethics represent a main building block of its achievement and success (Bosch-Badia et al., 2018). A likely research question can examine the ethical behaviour of individuals that highly support or discourage the path to sustainable development. In addition, future research can investigate the ethical awareness of individuals concerning sustainability and whether it can

positively impact the attainment of the goals. On the other hand, the role of the government as a powerful stakeholder that can drive strategic CSR should not be ignored in future research. Legislative frameworks on CSR can provide incentives to the private sector to implement strategic CSR models and can act as a shield against declining CSR practices specifically in unfavorable economic conditions. Yet, the government alone is not enough. The successful embedment of the SDGs in the CSR practices of the private sector cannot be achieved without the active involvement of all stakeholders (Abdelhalim & Eldin, 2019). Accordingly, future research should pay closer attention on how companies can utilize and empower stakeholders, such as social entrepreneurs, to further enhance the strategic outcome of CSR activities in realizing SDG objectives on both the micro, meso, and macro scales (Rahdari et al., 2016).

Increasing Research on Sustainability in Under-Researched Areas

The subject of sustainability in small and medium enterprises has been largely ignored in the examined literature. For the SDGs to be successfully achieved, the role of small and medium businesses should be considered (Cantele & Zardini, 2020). It is an unprecedented time that a universal sustainable development vision exists where businesses are considered significant partners in shaping their success (Martinuzzi et al., 2017). Therefore, there is a need to widen the scope of CSR literature in the SDG era to encompass not only large corporations but also small and medium enterprises. Future research is needed on the potential contribution of Small and Medium Enterprises (SMEs) to the achievement of the SDGs and impacts of SMEs social and environmental activities.

Finally, while developing countries require "inclusive business models" that link CSR strategies with sustainable development and the SDGs studies that explicitly tackle a strategic approach to CSR in the context of developing countries are outnumbered/very few. Understanding

the impact of the CSR practices of the private sector in developing countries and to what extent they are aligned with the SDGs is crucial to facilitate the achievement of the goals and help solve major social and environmental challenges faced by such countries. Future research is needed on the impact assessment of CSR practices both quantitatively and qualitatively to strategically develop CSR in developing countries and redirect it towards the attainment of the goals (Abdelhalim & Eldin, 2019).

2.5 Conclusion

The global adoption of the United Nations' Sustainable Development Goals has shifted what society should expect of companies in their communities and their role as leaders in the global sustainability transition. Nevertheless, it should be clear that organizations are still among the largest contributors to issues of sustainability. Despite known profitability and mounting evidence pointing to the multiplicity of direct and indirect benefits, there remains a lingering reluctance to undertake strategic CSR initiatives. The field of Management Sciences has made notable strides in supporting corporate transitions toward more sustainable futures led by an ambitious action-oriented research agenda. Emerging as a functional response to the innate difficulties in managing the sustainability paradox and making progress on sustainability targets, management sciences, as a field of research, holds potential to ground practitioner decision-making processes in empirical evidence. While it is acknowledged that this scoping review falls short in establishing causality between the evolution of CSR research trends and progress on the SDGs, this paper should serve as an entry point for future scientific inquiry.

With the intent to contribute to evidence-based management literature on CSR, this review advocates for the development of a Global Ontological Framework for CSR practices. By deepening insights regarding the nature of diffusion, depth of integration, and degree of influence

of the SDGs into CSR practices, this review highlights key areas of overlap between research and macro-level policy discourse. Future research in managerial sciences may use the findings of this review to explore potential causality and bi-directional influences between specific SDGs and strategic CSR research. Such findings could inform corporate strategy, operations, product development, and supply chain management in a manner that would minimize the impacts of cognitive biases latent to managerial decision-making and rational limitations to corporate governance structures.

The results of this review provide the initial framings of a roadmap in regards to changing expectations of corporate responsibility in the SDG era; which SDGs are influencing corporate strategy, and CSR agendas; how the SDGs are affecting stakeholder expectations and regulatory requirements; and examples of how the SDGs are being integrated into CSR reporting. By presenting a summary of current research on SDGs and CSR while highlighting under-researched and unexplored research areas, more knowledge for the advancement of this field can be gained. Further, based on the suggested areas for future research, theoretical perspectives related to how the SDGs inform sustainable business models and the role of stakeholders in promoting corporate commitment to sustainable development can be extended.

Peer-reviewed articles on CSR and the SDGs have increased substantially over the study period, specifically in 2019. Over half the articles published since 2015 were published in 2019, and early indications based on the first two months of 2020 suggest the trend will continue. While the authors of this paper acknowledge the importance of all 17 SDGs, this study indicates that to date, research has placed a particular emphasis on SDGs, 1,4,6,8,12, and 17. Given the voluntary nature and lack of a single ubiquitous reporting standard spanning geographic contexts and industries, the capacity for CSR to positively drive the global sustainability agenda remains

impeded. While this review is descriptive in its analysis of CSR-SDG linkages, future systematic reviews might seek to quantify the relationships highlighted by this study. Moreover, the degree and depth of CSR-SDG interactions might be impacted by geographic context, and as such, warrants future investigation to comparatively assess developing countries and not only developed ones. Nevertheless, it is the opinion of this paper that the UN SDGs represent a touchstone that offers a unifying framework for corporate reporting. Moving forward, this will require continuous efforts to ensure comparability and consistency in reporting mechanisms that create functional linkages between both: 1) national and global commitments to sustainable development; and 2) corporate and civil society actions to building sustainable and resilient communities. Integrated reporting is particularly helpful to increase understanding of the importance of sustainable development issues to value creation because of its: multi-capital approach; long-term focus; guiding principle of connectivity; and a requirement for board involvement.

In this paper, several important areas of future research have been identified to understand the role of corporations in supporting the societal achievement of the SDGs by 2030. First, current literature focuses mainly on the role of large organizations yet further analysis is needed to explore the SDGs as a framework to inform the activities and performance of small and medium-sized enterprises. Second, further studies might consider analyzing the role of governments in advancing strategic CSR practices. Finally, future research might consider examining the role of stakeholders in driving strategic CSR including employees, investors, consumers, and civil society members. Overall, the findings of this study affirm the need to understand the environmental and social impacts of CSR activities on sustainable development and how current CSR performance can be improved and redirected to have long-term sustainable benefits on companies and society at large.

The limitations of this study are twofold. First, the selection process of this study mainly

focused on pre-defined keywords which may have resulted in the exclusion of relevant papers. However, the study used three scientific online databases (i.e. ISI Web of Science, Sci-Verse Scopus, and Science Direct), to obtain studies on CSR in the SDG era covering a period of more than 5 years (2015-2020). This wide-scope analysis can provide extensive evidence on the interconnection between CSR and sustainability goals. Second, the findings of the study on CSR activities are mainly derived from academic journal articles rather than industry sources, such as corporate websites and corporate sustainability reports. Yet, the majority of the examined articles in this study are applied research covering a wide range of industry sectors which may be sufficient to reveal the status quo of CSR in a post SDG era. Moving forward, global policy studies must give greater emphasis to understanding processes of actual organizational change in CSR practices over time. This review provides a timely response highlighting the continued evolution of CSR research in a post-SDGs era. However, if the UN SDGs are in fact to assume their role as a universally accepted corporate reporting standard, future research will require clarity and causality regarding 'how' and to 'what' degree interaction(s) between mediating mechanisms, context, and outputs influences the nature of CSR-SDG relationships.

MANUSCRIPT ENDS

Chapter 3

3 Global Reporting Implications in the SDGs World

This chapter is based on a manuscript that aims at investigating the integration of the United Nation's SDGs into GRI based reporting to explore factors that support the adoption of the SDGs by organizations in a way that optimizes firms' reporting on SDGs. We analyzed the official GRI dataset provided by the GRI Data Secretariat. We analyzed 14,308 entries provided by 9397 organizations between 2016 and 2017. Using legitimacy theory as a framework, we test a set of hypotheses to identify the factors that influence SDGs reporting within firms.

The results show that larger companies are more likely to integrate the SDGs into their reporting than smaller companies. Secondly, the results suggest that publicly listed firms are more likely to address the SDGs. Furthermore, we found that industries with higher sustainability impacts are more likely to address the SDGs in their reporting than those with lower impacts. Fourthly, our data confirm a regional effect with the highest percentages of SDG reporting in South America and Europe. Also, the reporting quality measured by following international standards, having external assurance, being a member of the GRI Gold Community, and those using GRI services, such as SDG Mapping is correlated with the likelihood to report about the SDGs.

This chapter contributes to the literature on CSR and SDGs reporting by providing the first study that analyzes the integration of the SDGs into GRI based reporting. The study contributes to legitimacy theory in suggesting factors that contribute to the legitimacy-based adoption of the SDGs, including organizational size, being publicly listed, being from high impact industries, and certain global regions, etc. SDG reporting is a way to increase organizational legitimacy that is used by organizations striving for legitimacy in front of their stakeholders and consequently to

reduce risk. Finally, this chapter sheds light on the integration of the SDGs into organizational reporting and accounting, including the adoption of the SDGs by SMEs and the benefits of the SDGs for strategic corporate sustainability.

MANUSCRIPT BEGINS

3.1 Introduction

In 2015, the United Nations adopted the SDGs, which are a framework for achieving global sustainability until 2030 (United Nations, 2015). The 17 goals incorporate 169 targets along with 232 indicators that can help organizations track their progress towards each goal objectively (PWC, 2018, Scheyvens et al., 2016). The introduction of the SDGs represents a watershed moment in CSR reporting (Grainger-Brown and Malekpour, 2019). Companies across various sectors have started to prioritize their sustainability agendas to help achieve the SDGs. Also, CSR standards, such as the Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative, have incorporated the SDGs into their reporting frameworks (ElAlfy and Weber, 2019). Consequently, since 2015, corporations have started to integrate the SDGs into their corporate sustainability strategies as well as into their corporate reporting (United Nations Global Compact and KPMG International, 2015, PWC, 2018, Rosati and Faria, 2019, Scheyvens et al., 2016).

Though recent studies have analyzed how businesses integrate the SDGs into their business strategy, the question remains which external factors and firm characteristics support SDG reporting. Therefore, the objective of this study is to understand the connection between firm characteristics and external impacts on the integration of the SDGs into corporate reporting.

Studies have analyzed the impact of SDG reporting on improving corporate sustainability performance, as well as enhancing organizational legitimacy. Donoher (2017), for instance, found

that multinationals adopt a sustainability agenda if their stakeholder network has a variety of interests and beliefs. In another recent study, Rosati and Faria (2019) highlight the relationship between SDG reporting and internal organizational factors. The authors conclude that SDG reporting correlates positively with higher intangible assets, higher commitment to external sustainability assurance, and the corporation size. Furthermore, Avrampou et al. (2019) found that businesses connect the SDGs with their business strategy. Consequently, the authors highlight the need to assess the patterns of CSR reporting by sector in light of mainstreaming the SDGs framework.

Based on legitimacy theory (Suchman, 1995) we analyze corporate SDG reporting by testing four hypotheses; (1) firms that are larger, (2) firms that have higher sustainability impacts, (3) firms from regions with high environmental and social standards, and (4) firms that have better CSR reporting practices such as adhering to international guidelines and frameworks are more likely to adopt the SDGs in their reporting. To analyze the hypotheses, we used the data about 14,308 reports provided from GRI's data secretariat (Global Reporting Initiative, 2020). We used the data from 2016 to 2017. The data has been analyzed using statistical tests such as Chi^2 tests for categorical data as well as logistic regression for multivariate analyses.

This research contributes to legitimacy theory by validating the fundamentals of the theory on a new phenomenon, namely reporting on the SDGs (Whetten, 2002). We found that bigger companies are more likely to integrate the SDGs into their reporting than smaller companies. Secondly, the results suggest that publicly listed firms are more likely to address the SDGs. Furthermore, we found that industries with higher sustainability impacts are more likely to address the SDGs in their reporting than those with lower influences. Fourthly, our data confirm a regional effect with the highest percentages of SDG reporting in South America and Europe. Also,

organizations that adopt international standards, adopt external assurance services, and use the GRI services such as the SDG Mapping, which help map reporting indicators towards achieving the 17 goals, are more likely to report on the SDGs.

The structure of this paper is as follows: first, we provide a review of the evolution of CSR reporting, reporting frameworks, and the SDGs. Then, we discuss legitimacy theory as the basis of our empirical research. Subsequently, we describe our research methods and our results. We finish the paper with our conclusions and a research outlook.

3.2 Literature Review

Standardized corporate reporting started in the 1920s in forms of conventional financial reports, where organizations report to investors and management on their financial results. Reporting evolved in the 1960s to incorporate a social dimension, which started in France, when organizations began reporting to civil unions on social performance, such as employees' working conditions (Carroll, 1999). Environmental reporting came next in the 1970s, especially after the Brundtland Commission's agenda, which emphasized the importance of sustainable projects that meet the growth requirements of the present generation without compromising the needs of the future generation (Brundtland, 1987). In this era, the term 'sustainable development' has evolved within the reporting discourse. Corporations have been reporting on their environmental performance, such as the use of raw material and natural resources, waste management, and energy efficiency, thus gaining a competitive advantage that results from environmental stewardship (Wang et al., 2016).

Corporate social responsibility reporting took a broader dimension in the 1990s after the introduction of the TBL framework by Elkington (1998). The framework highlights the importance of balancing the economic, environmental, and social performance of businesses instead of

exclusively addressing the financial bottom line (Buallay, 2019) that has been dominating corporate reporting (Turner et al., 2006, Milne and Gray, 2013).

Furthermore, the term sustainability has been integrated into corporate strategy and reporting domain in the form of eco-efficiency promoted by the World Business Council for Sustainable Development (Stigson, 2001). This approach was the first to claim a win-win-situation between corporate sustainability and financial performance (Winn et al., 2012). Consequently, in the new millennium, corporations started using "sustainability reports" as an evolvement of CSR in a way that reflects the connection between sustainable development and business (Adams, 2017).

The current literature on firm characteristics and sustainability reporting found differences in reporting practices between sectors (Kolk, 2004, Kolk, 2008). High impact sectors, such as utilities and oil & gas, conduct more CSR reporting than sectors with lower environmental and societal impact, such as telecommunications. Furthermore, the connection between CSR reporting and Corporate Social Performance (CSP) is discussed controversially (DiMaggio and Powell, 1983, Zhilong et al., 2009, Buallay, 2019). Also, CSR reporting is driven by different external pressures such as regulations (Cheung et al., 2009, Dobers and Halme, 2009, Dutta et al., 2012), and stakeholder pressure (Cho et al., 2017, Dhaliwal et al., 2014). Firms may publish CSR reports to increase their legitimacy by addressing the needs of their shareholders and other stakeholders (Suchman, 1995, Wilmshurst and Frost, 2000). However, there is a gap in the literature about how firm characteristics influence the SDG integration into reporting.

Furthermore, studies show that external influences can impact CSR reporting, such as jurisdictions in which cultural and legal norms expect compliance with more sustainable activities will push companies that operate within those jurisdictions to produce more reports (Dutta et al., 2012). Likewise, organizations operating in industries that are perceived to have more significant

negative impacts on the world should expect to be in a more precarious position in terms of their perceived legitimacy. As a result, these firms expend more resources to prove their legitimacy and accountability via their CSR reports (Post & Preston, 2012). In a recent study by Rosati and Faria (2019), the authors highlight that CSR reporting has a positive correlation by the size of the firms, where large organizations are more likely to report to enhance their accountability and operational legitimacy. Accountability refers to being responsible for diverse stakeholders via sanction and reward power (Beu and Buckley, 2001; Tamvada, 2020). Accountability has been a driver for CSR reporting, where firms communicate on their performance, vis-a-vis the stakeholders via CSR reports. Finally, Hickman (2020) highlights that publicly-traded firms report more on their CSR performance and tend to follow the GRI more frequently as a reporting framework to meet the mandates of dispersed investors.

3.2.1 The Global Reporting Framework (GRI)

Reporting on a firm's sustainability performance to internal and external stakeholders should enhance its reputation and operational legitimacy as well as reduce information asymmetry (Hamrouni et al., 2019). CSR reporting also help external stakeholders and investors understand a firm's vision, mission, and operations in a way that increases the valuation of a firm's goodwill (Brammer et al., 2012). Several institutions have been working on the standardization and harmonization of sustainability reporting. For example, the International Organization for Standardization (ISO) has issues several certifications that measure sustainability performance such as ISO 14001, which provides organizations with better frameworks for environmental management. Other ISO certificates have also focused on environmental management communication such as ISO 14063 as well as the ISO 26000, which focuses on firms' CSR. ISO standards have been widely adopted across various sectors as a response to stakeholders' demands

for eco-efficient strategies (Clapp, 1998).

Another reporting framework is the Integrated IIRC, which is a coalition of NGOs, regulators, and companies that have been working on providing an integrated reporting framework for all parameters of corporate performance (Morros, 2016). Another renowned guideline has been developed by SASB, which focuses on providing a set of material indicators that helps managers disclose useful information for investors as well as other stakeholders (Sustainability Accounting Standards Board (SASB), 2017). Recently a new framework was introduced in 2015 in response to the G20's request to provide material reports on the financial implications of climate change issues, namely the TCFD. This new framework has developed guidelines that can help firms, especially in the financial sector, to manage environmental risks and helps in defining the governance need to manage these risks (Task Force on Climate-related Financial Disclosures, 2017).

Finally, the last and most accepted and adopted reporting guideline has been the GRI, which is an independent international organization that has had extensive efforts since the 1990s to institutionalize sustainability reporting. GRI aims at helping businesses, governments, and institutions understand and communicate their impacts on global sustainability issues (Global Reporting Initiative, 2020). The GRI's original scope was to create an accountability mechanism for corporations to help them engage in environmentally responsible management practices. This initiative was in response to the United Nations Environment Programme (UNEP) in 1997. In 2014, the GRI developed the Global Sustainability Standards Board (GSSB), which has been responsible for the development of the reporting guidelines (Sethi et al., 2017). The GRI has provided four generations of reporting guidelines (G1, G2, G3, and G4) and, finally, the GRI Standards in 2017.

It is worth mentioning that there has been a significant collaboration between the GRI board, SASB, and IIRC after the concerns of multiple corporations about the negative implications of competition between the three entities. SASB and IIRC provide material reporting frameworks yet the GRI initiative has been more successful in transforming niche individual corporate efforts in CSR reporting into a more standardized global trend. In essence, GRI has been adopted by the majority of global market-leading companies for CSR reporting and continuous to be replicated across different sectors (Fifka, 2011). In April 2017, the Ceres Conference was held in San Francisco and included renowned sustainability non-profit organizations. During the meeting, Tim Mohin, Chief Executive of GRI, announced that the new standards define sustainability reporting from a strategic approach that identifies "material aspects and boundaries" and adopts a more robust framework for stakeholder engagement and better governance mechanisms (Mohin and Rogers, 2017). Since the adoption of the SDGs, corporations have collaborated with the GRI to mobilize their business strategies towards the achievement of the goals. Recent industry reports highlight that drafting sustainability agendas through targeting a number of SDGs can improve the quality of their CSR reports (PWC, 2018).

3.2.2 The SDGs

With the advent of the SDGs in 2015, CSR literature started to focus on the role of the private sector in achieving the 17 goals. Bowen et al. (2017) address policy issues related to the implementation of the SDGs. These are cultivating collective action by stakeholder interaction, addressing tradeoffs, and top hold actors accountable. The private sector has a critical role in contributing towards the implementation and financing of the SDGs that require $5 to $7 trillion annually until 2030 to achieve the targeted agenda (Mawdsley, 2018, Weber, 2019). Consequently, some studies developed concepts on how the industry could help to finance the SDGs (Avrampou

et al., 2019, Dahlmann et al., 2019, Etzion et al., 2019, Schramade, 2017).

The main goals of the SDGs are the protection of the Earth's life support system and poverty reduction at the same time (Griggs et al., 2013) though the SDGs are criticized for their economic growth approach that is in contrast to notions of the ecological economy (Hickel, 2019). Consequently, some scholars also doubt whether the SDGs are compatible with current business practices (Spaiser et al., 2017) though the SDGs are endorsed by many businesses (Williams et al., 2019).

Addressing environmental issues in addition to poverty reduction distinguished the SDGs from the MDGs (Sachs, 2012, Halisçelik and Soytas, 2019). Also, unlike the state-centred MDGs, the SDGs represent a cooperative tripartite dialogue between governments, the private sector and the civil society (Rosati and Faria, 2019) including the business sector. There are, however, no tools available to integrate the SDGs into corporate strategies and consequently into reporting (Grainger-Brown and Malekpour, 2019). Consequently, Scott and McGill (2019) found that 72 percent of all companies mentioned the SDGs in their report, but only 14 percent disclosure specific SDG targets, and only 1 percent measure their SDG performance.

Bebbington and Unerman (2018) emphasize that the SDGs play a critical role in the advancement of CSR research academically as well as CSR reporting from an industry perspective. Recent industry reports also suggest that developing CSR agendas towards targeting the 17 goals can help firms advance the quality of their sustainability reports as well as their legitimacy in the countries in which they operate (PWC, 2018). However, the report also identified heterogeneity in SDG reporting between industries and regions. Therefore, our study will use legitimacy theory to analyze differences in SDG reporting between industries, company types, general reporting performance practices, and regions.

3.3 Theory

Firms across various sectors conform to rules in the market to sustain their operational legitimacy and enhance their corporate image. Suchman (1995, p. 574) highlights that "legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". A company's adoption of sustainability reporting is influenced by distinct factors such as compliance with laws and regulations as well as pressures from internal and external stakeholders. Legitimacy theory has a rich academic background rooted in theoretical frameworks of stakeholder theory, institutional theory, and management theory.

Drafting CSR agendas towards meeting a number of SDGs can help solve this legitimacy dilemma since the long-term 2030 agenda can contribute positively towards the economy, society, and the environment (Bebbington and Unerman, 2018). Recent studies have assessed the impact of reporting on SDGs in relation to improving sustainability performance (Morioka et al., 2018) through enhancing corporate legitimacy (Donoher, 2017) as well as supporting the firm to realize a competitive advantage via sustainability stewardship while contributing towards the achievement of the SDGs (Sullivan et al., 2018).

Based on legitimacy theory, companies tend to address topics in their reports that can help to legitimize their role in society and towards stakeholders (Post and Preston, 2012). This strategy is rather reactive to stakeholder expectations than proactive. Also, it reacts to events, such as the adoption of the SDGs by the United Nations, where firms tend to report on positive aspects related to the event (Gómez-Carrasco et al., 2020). Some studies, however, doubt that legitimacy is the major driver for CSR reporting because a high percentage of CSR communication is not related to major sustainability-related events or stakeholder pressure (Post and Preston, 2012). Furthermore,

firms that feel a stronger need to legitimize, such as those in industries with higher societal and environmental impacts, bigger organizations, and firms in regions with higher pressure to disclose environmental and societal issues, are expected to report more about the SDGs.

3.4 Research Questions and Hypotheses

Based on the literature review on legitimacy theory, we first hypothesize that large firms are more likely to report on SDGs than smaller firms. Our rationale is that large organizations, which have 250[1] or more employees, tend to are expected to have implemented more robust reporting practices than smaller ones. Larger firms have more stakeholders' pressure to operate in a socially responsible and sustainable manner (Wickert et al., 2016). Large organizations have more exposure to the public, and their goodwill is more vulnerable to public opinion and social media reactions (Ali et al., 2015). Large firms also have more resources; hence the expectations from diverse stakeholders increase with regards to incorporating the SDGs into their strategies as well as CSR agendas and reports (Munro and Arli, 2019).

Secondly, we hypothesize that publicly listed companies integrate the SDGs more into their reporting than non-listed companies. CSR activities of publicly listed companies are evaluated more critically by their stakeholders (Panwar et al., 2014), have a higher number of stakeholders (Hickman, 2020), but also have more resources for disclosure (Díez-de-Castro et al., 2018). Therefore, they have and can perform better with disclosing their CSR activities. Consequently, publicly listed companies will address topics that are of high value for society, such as the SDGs. Our third hypothesis addresses industries and SDG reporting. We hypothesize that organizations operating in industries with higher expected environmental and social impacts tend to report on

[1] This is based on the GRI data legend: https://www.globalreporting.org/SiteCollectionDocuments/GRI-Data-Legend-Sustainability-Disclosure-Database-Profiling.pdf

the SDGs more frequently than those in less impactful industries. Firms that operate in sectors with high environmental externalities such as manufacturing and energy sectors tend to have more pressures from their stakeholders concerning legitimacy as well as reporting on their sustainability performance in a way that addresses societal needs (Bebbington and Unerman, 2018, Fallan, 2016). Since the SDGs are widespread amongst stakeholders, companies from industries with higher impacts will more frequently integrate the SDGs into their reporting.

Fourthly, we hypothesize that reporting on SDGs will vary geographically. Due to the lack of consistency of CSR reporting frameworks, scholars argue that comparing reports from different countries is a complicated process (Carnevale et al., 2011). Economic, political and social contexts of each country can influence how firms operate, which also applies to their CSR reports. Nevertheless, several studies highlight that CSR reporting can be more advanced in some regions, such as Europe (Weber, 2014). Despite the emergence of global reporting standards, we argue that regional pressures will be a driver for SDG reporting.

3.5 Sample and Methods

For our study, we used the GRI report database between 2016 and 2017. The categories used in the following sections are also defined in this database. Information about the categories is available in the GRI Sustainability Database (Global Reporting Initiative, 2020). Later dates have not been included because they were not yet available at the time of this study. Additionally, although the GRI database does extend back to 2015, this was the year that the SDGs were adopted so they would not be expected to have been integrated into reports from that year. Therefore, we removed all 2015 data. Consequently, our sample is comprised of the 7155 reports published in 2016 and the 7153 published in 2017.

Overall, the sample has 14308 entries by 9397 firms from 39 industries. Large

organizations represent 61 percent of the sample, with 28 percent being multinational, and 11 percent SMEs. The categories, such as large companies, multinationals, SME, etc. , have been taken from GRI's classification (Global Reporting Initiative, 2020).

The regions in which the reporting entity is headquartered, are distributed as presented in Table 3. A reporting entity can be the whole organization, such as a firm, or a subdivision of an organization, such as a plant.

Table 3: Regional distribution per GRI Report

Region	N
Africa	894
Asia	5422
Europe	4506
Latin America & The Caribbean	1783
Northern America	1324
Oceania	379
Total	14308

With regard to the type of GRI report, we identified 1628 reports citing GRI, while 6783 use the G4 standard. Furthermore, 5633 are non-GRI reports. Non-specified GRI standards are used by 563 reports, and one report used the GRI G3 standard. Furthermore, 2323 reports provided assurance.

The use of the Organisation for Economic Co-operation and Development (OECD), the United Nation's Global Compact (UNGC), the Carbon Disclosure Project (CDP), and the International Finance Corporation (IFC) standards is presented in Table 4. Overall, 4843 reporting firms used at least one of the international standards. For further analyses, we coded the use of standards into two categories. Category 1 means that the reporting entity uses at least one of the standards, and Category 2 indicates that none of the standards is used.

Table 4: Standards used in GRI Reports

Standard	N
OECD	553
UNGC	2639
CDP	1464
IFC	187
Total	4843

To analyze the sample with regard to differences in mentioning the SDGs we use Chi^2 tests to analyze the connection between SDGs reporting and other variables. For multivariate analyses, we use logistic regression that is suitable for binary outcomes (Kleinbaum et al., 2002).

3.6 Results

We begin with a descriptive overview of SDG reporting and univariate Chi2 testing. The SDGs have been addressed in 1730 reports. This is a rate of 12 percent. SDG reporting significantly increased from 2016 to 2017 from 545 to 1185 reports ($p < .0001$, $Chi^2 = 269.53$, $N = 14308$). Next, we present the appearance of the SDG in reports related to organizational characteristics, such as size, type of organization, and publicly listed vs. private companies. The results are presented in Table 5.

Table 5: SDG reporting and firm characteristics

Firm characteristics	SDG yes	SDG no
1) Size of organization		
Large	1014	7766
MNE	596	3373
SME	110	1435
2) Type of organization		
Cooperative	25	151
Governmental	0	2
Non-profit	48	326
Partnership	9	61
Private cooperation	1389	9257
Public institutions	33	367
State-owned	113	1554
Subsidiary	112	853
3) Listed vs. non-listed		
Listed	1157	8550
Non listed	560	3944

We found significant differences between reporting entities with different sizes ($p < .0001$, Chi2 = 63.13). Multinationals report significantly more about the SDGs than other large companies, while SMEs report significantly less about the SDGs. Cooperatives and private companies report significantly more frequently about the SDGs, while public institutions and state-owned firms report significantly less about the SDGs ($p < .0001$, $Chi^2 = 60.430$). There is no significant difference between listed and non-listed companies with regard to SDG reporting.

Furthermore, we conducted a logistic regression with the company characteristics and independent variables and SDG reporting as the dependent variable. The year is used as the control variable. The logistic regression is significant ($p < .0001$, $r^2 = .03$). However, the only significant coefficient is for the type of organizations (coeff. = -.126, $p < .0001$) and the year as the control variable.

Next, we analyze the influence of the sector on SDG reporting. To conduct this analysis,

we transferred the GRI activities into GICS sectors (Bhojraj et al., 2003). In addition to the GICS sectors, we used ‘Government / Public Organizations’, ‘NGO / Non-profit’, ‘Equipment’, and ‘Others’. These industries initially appear in the GRI list but are not part of the GICS sectors.

Based on legitimacy theory, our second hypothesis is that sectors that are more exposed to the public report more about the SDGs. The percentage of reports per sector mentioning the SDGs is presented in Table 6. The sectors energy, communication technology, utilities, contribute positively to SDG reporting, while health care, real estate, equipment, and others contribute negatively. Overall, there is a significant difference between the sectors ($Chi^2 = 94.59$, $p < .0001$).

Table 6: SDG reporting by industry

Sector	SDG Reporting
Energy^{++} (N = 882)	14.17%
Materials (N = 1782)	13.15%
Industrials (N = 1710)	12.75%
Consumer discretionary (N = 1631)	11.83%
Consumer Staples (N = 1104)	12.86%
Health care^{-} (N = 618)	9.55%
Financials (N = 2025)	12.63%
Information technology (N = 574)	12.20%
Communication technology^{++} (N = 396)	21.72%
Utilities^{++} (N = 667)	14.54%
Real Estate^{-} (N = 532)	9.59%
Government (N = 166)	8.43%
NGO (N = 390)	13.08%
Equipment^{--}(N = 335)	6.87%
Others^{--}(N = 1488)	7.39%
Total (N = 14308)	12.09%

(++: significant positive contribution to SDGs reporting, --: significantly negative contribution to SDGs reporting)

Next, we analyze differences between regions. We found a significant difference in SDG reporting between regions (Chi2 = 138.46, p < .0001). African reports mention the SDGs in 6.06 percent of their reports, while Asian reports have a rate of 10.81 percent. The highest percentage

has Latin America with 19.24 percent, followed by Europe with 12.94 percent. North America and Oceania have a very similar percentage of 11.63 percent and 11.61 percent. Significant negative contributions come from Africa and Asia, while Europe and Latin America contribute positively to the differences between sectors.

Besides, we analyze the impact of reporting characteristics on SDG reporting. Featured reports talk more frequent about SDGs than non-featured reports ($Chi^2 = 82.68$, $p < .0001$). The same is true for members of the GRI Gold Community (Chi2 = 277.00, $p < .0001$), and reports using stakeholder panels ($Chi^2 = 171.13$, $p < .0001$) report significantly more frequently about the SDGs than their counterparts.

There are also significant differences in SDG reporting with regard to the GRI adherence level. Reports in accordance with GRI address the SDGs significantly more frequently while undeclared reports address them significantly less frequently ($Chi^2 =68.53$, $p < .0001$). Finally, reports with GRI Content Index Service, those with Materiality Disclosures Service and Content Index Service, reports with Materiality Disclosures Service and SDG Mapping Service, and those with SDG Mapping Service report significantly more frequent about the SDGs that others ($Chi^2 =88.76$, $p < .0001$).

Finally, we conducted a multivariate logistic regression analysis with bootstrapping with SDG reporting as the dependent variable and the items mentioned above as the independent variables (see Table 7). We used the year as a control variable. The function is significant ($p < .0001$) with a pseudo $r^2 = .13$. All independent variables but being a featured report (coeff. = .096), have significant coefficients. This is also true for the year with more SDG reporting in 2017. Also, other report quality characteristics, such as being an integrated report and having external assurance has been tested. Integrated reports ($Chi^2 =9.14$, $p = .002$) as well as reports with external assurance ($Chi^2 = 1600$, $p < .0001$) report more frequently about SDGs than their counterparts.

Furthermore, function 5 in table 7 shows the impact of international standards on SDG

integration. Overall, reports following one or more of these standards report significantly more frequent about the SDGs than those that do not follow the standard ($p < .0001$ for all standards, respectively). The function is significant ($p < .0001$) with a pseudo $r^2 = .13$.

With regard to reporting characteristics, all independent variables, but being a featured report (coeff. = .096), have significant coefficients. This is also true for the year with more SDG reporting in 2017. Also, other report quality characteristics, such as being an integrated report and having external assurance, have been tested. Integrated reports ($Chi^2 = 9.14$, $p = .002$) as well as reports with external assurance ($Chi^2 = 1200$, $p < .0001$) report more frequently about SDGs than their counterparts.

Table 7: Logistic regression analysis with SDG reporting as the dependent variable

Independent variable	Function 1	Function 2	Function 3	Function 4	Function 5	Function 6	Function 7
Year	.879***	.903**	.906***	.910***	.971***	1.127***	1.921***
Region		.172**	.168***	.162***	.107***	.144***	-.021
Size			-.084	-.068*	-.038	-.015	-.122
Type			-.116***	-.123***	-.117***	-.081**	-.086
Listed			.007	.029	-.010	.133	-.205
GICS				-.007***	-.005***	-.004**	-.002
Int. Standard					1.401***	.676***	.307*
Integrated						-.156	-.229
Assurance						1.228***	.939***
Featured							-.310
Gold Community							-.727**
Stakeholder Panel							-.359
Adherence							-.198
GRI Service							.185**
Const.	-4.253	-4.827	-4.084	-3.856	-4.237	-4.637	.511
P	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
R^2	.026	.032	.034	.037	.086	.107	.128

The results of the logistic regression suggest that adding regions, the size and type of the

organization, industrial sectors, international standards, and GRI reporting characteristics contribute to predicting the use of the SDGs in reporting. Remarkably, Function 7 in in table 7 shows that being a member of the GRI Gold Community contributes to higher use of SDGs in reporting as well as disclosure based on integrated reporting and being a listed company7. The negative signs are caused because of the coding of the yes / no category. Furthermore, the region has an impact on SDG reporting when used in Function 2 but loses significance if other factors are added.

To summarize, our data confirmed a size effect (Hypothesis 1), a public listing effect (Hypothesis 2), an industry effect (Hypothesis 3), and a regional effect (Hypothesis 4) on the integration of the SDGs into reporting.

3.7 Conclusion, Limitations, and Future Research

Based on legitimacy theory, the study analyzed 14,308 reports with regard to addressing the SDGs. The results suggest the rejection of all four null hypotheses. In detail, we found that bigger companies are more likely to integrate the SDGs into their reporting than smaller companies (Hypothesis 1). Secondly, the results suggest that publicly listed firms are more likely to address the SDGs (Hypothesis 2). Furthermore, confirming legitimacy theory, we found that industries with higher sustainability impacts are more likely to address the SDGs in their reporting than those with lower impacts (Hypothesis 3). Fourthly, our data confirm a regional effect with the highest percentages of SDG reporting in South America and Europe. Also, the reporting quality measured by following international standards, having external assurance, being a member of the GRI Gold Community, and those using GRI services, such as SDG Mapping is correlated with the likelihood to report about the SDGs. Finally, we did not find differences between the types of reporting organizations, for instance, corporations vs. government organizations. We conclude that SDG

reporting can be explained using legitimacy theory as we describe in detail in the following paragraphs.

First, based on legitimacy theory, reporting reacts to events and societal pressure to legitimize their role in front of society and stakeholders (Suchman, 1995, Cho and Patten, 2007). The SDGs are a globally accepted framework. Though it is not particularly addressing the corporate world, stakeholders have adopted the framework. Consequently, firms adopt the framework to maintain their legitimacy. Hence, this study contributes to the research that assesses the legitimacy and effectiveness of global sustainability frameworks (Voegtlin and Pless, 2014). Our study shows that global sustainability frameworks are adopted by organizations because of legitimacy reasons though they do not particularly address corporate issues.

As found in other studies, our results suggest that bigger organizations tend to conduct more sophisticated sustainability disclosure, and consequently are more likely to integrate the SDGs into their reporting because of legitimacy (Wickert et al., 2016). Therefore, research is needed about how to increase the likelihood of addressing the SDGs for smaller reporting entities; or more in general about tools that increase SMEs sustainability reporting (Corazza, 2018). The same is true for reporting entities that are not publicly listed. In-line with other studies (Panwar et al., 2014), we found that the likelihood of SDG reporting is higher for listed companies than for non-listed entities. Therefore, research is needed to increase the engagement of non-listed entities with the SDGs.

These findings also call for answers to the question of whether organizations report about the SDGs because of legitimacy reasons or whether they also address them strategically. Guthrie and Parker (1989) doubt that reporting is mainly motivated by legitimacy. Hence, though all our results suggest legitimacy-motivated reporting, it might be interesting to analyze whether reporting

organizations also embed the SDGs into their strategic decision making. This research, however, has to go beyond the analysis of reporting and should explore managerial decisions.

Some insight about addressing the SDGs because of strategic reasons might come from our result that organizations from industries with higher impacts are more likely to address the SDGs. On the one hand, the effect can be explained based on legitimacy theory. High impact industries feel more stakeholder and institutional pressure than low impact industries (Bebbington and Unerman, 2018). On the other hand, high impact industries might address the SDGs to improve their sustainability performance if it is correlated to their financial performance (Eccles et al., 2012) as highlighted by Mancini and Sala (2018) in their study for the mining industry. Furthermore, research might provide more details to answer the question of whether SDG reporting is rather strategically or legitimacy driven.

In agreement with other studies, for instance, on the UN Global Compact (Janney et al., 2009), we found differences in SDG reporting across regions. In addition to a high adoption rate in Europe, we found the highest rate in South America. Sustainability issues addressed by the SDGs could be relevant for reporting organizations in South America. Nevertheless, if we add firm characteristics and accountability measures, such as external auditing, the regional effect becomes non-significant. Similar to the study on the UN Global Compact (Janney et al., 2009), North-American organizations are less likely to adopt a UN framework such as the SDGs.

Besides, additional measures that contribute to the quality of organizational disclosure affect SDG disclosure. Our results suggest that SDG reporting is in-line with and not in contrast to GRI reporting. To elaborate, GRI featured reports, members of the GRI Gold Community, and reports using stakeholder panels are more likely to report on the SDGs. The result suggests that organizations that follow GRI's guidelines and reporting index tend to integrate the SDGs into

their sustainability reports. (Global Reporting Initiative, 2018). Reporting on the SDGs does not contract existing reporting schemes since there is a strong relationship between the SDGs and other frameworks as highlighted by Szennay et al. (2019). Consequently, the SDGs provide an opportunity to extend current reporting schemes instead of adding yet another guideline. This is also true for other international standards, such as the OECD, CDP, IFC, ISO, and the UN Global Compact standard. SDG reporting is in-line with these standards. Organizations that follow these international standards are more likely to report on the SDGs.

Though the literature is discussing the effects of external assurance on social and environmental reporting controversially (Buallay and Al-Ajmi, 2019, Hickman and Cote, 2019) (Kolk and Perego, 2010, Park and Brorson, 2005, we found that external assurance correlates positively with SDG reporting. Since external assurance increases the credibility and quality of reporting (Simnett et al., 2009, Kılıç et al., 2019), externally verified SDG adoption means that the reporting organizations are serious with addressing the SDGs.

Overall, we contribute to legitimacy theory by suggesting factors that contribute to the legitimacy-based adoption of the SDGs, including organizational size, being publicly listed, being from high impact industries, certain global regions, etc. SDG reporting is a way to increase organizational legitimacy that is used by organizations striving for legitimacy in front of their stakeholders and consequently to reduce risks (Djoutsa Wamba et al., 2018).

Corporations play an essential role in the achievement of the SDGs, which shape the future of the world's sustainable development. Nevertheless, SDGs reporting needs more research to analyze the factors that can influence it. The study contributed to the academic literature on CSR and legitimacy theory by analyzing institutional and regional factors that impact SDGs reporting.

MANUSCRIPT ENDS

Chapter 4

4 SDGs Communication on Social Media

The SDGs represent a unique framework for a sustainable world. Since the UN adopted the 17 goals in 2015, corporations started to use the SDGs as a guideline for corporate sustainability. This chapter provides a critical analysis of the evolvement of the CSR reporting domain namely the changes in reporting practices such as the use of social media as a reporting platform on CSR. Based on corporate sustainability theory and legitimacy theory, this chapter analyzes whether and how firms communicate about the SDGs on social media to increase their legitimacy or because they are linked to the firms' core business.

For this study, we collected the SDG-related tweets from Standard and Poor (S&P) 500 companies. The results show that firms post tweets about the SDGs that are related to their core businesses and impacts. Hence, the SDGs are communicated in a way that addresses strategic corporate sustainability and social responsibility. This chapter has significant contributions to the applications of Machine Learning and Artificial Intelligence (AI) applications in sustainability. The results also contribute to CSR literature by clarifying the role of the SDGs in regard to corporate strategy and legitimacy.

This chapter is adapted from:

ElAlfy, A., Darwish, K. M., & Weber, O. Corporations and sustainable development goals communication on social media: Corporate social responsibility or just another buzzword? *Sustainable Development*.

MANUSCRIPT BEGINS

4.1 Introduction

Since the introduction of the United Nations Sustainable Development Goals (SDGs) in 2015, corporations started adopting the goals as a framework for their corporate sustainability agendas and corporate sustainability reporting (Williams, Whiteman, & Parker, 2019). Many companies prioritize their sustainability activities using a selection of the SDGs. Recent reports suggest that setting sustainability agendas through targeting a selection of SDGs can increase the quality of corporate social reporting (PWC, 2018).

In addition, social media became more important for corporate social responsibility communication. Compared to conventional reporting, social media improves companies' daily communication with stakeholders (Cho, Furey, & Mohr, 2017). It also allows for direct stakeholder responses (Gómez-Carrasco, Guillamón-Saorín, & García Osma, 2020), and increases public awareness (Lee, Oh, & Kim, 2013). Therefore, it is crucial to identify how and why corporations address the SDGs in their corporate social responsibility reporting using social media.

Because of the novelty of the two domains, namely corporate reporting about the SDGs and the use of social media for CSR communication, the knowledge about corporate SDG related social media communication is sparse. Some research that studied firms addressing the SDGs (PWC, 2018; Rosati & Faria, 2019; Scheyvens, Banks, & Hughes, 2016) found different levels in addressing the SDGs. Furthermore, there are studies on the use of social media in corporate social responsibility communication (Cho et al., 2017; Gómez-Carrasco et al., 2020; Lee et al., 2013). This research indicates that social media communication is rather stakeholder-oriented and does not address the core social responsibility issues of firms. In line with Avrampou, Skouloudis, Iliopoulos, and Khan (2019), however, we did not find any research, that addresses corporate SDG use in social media. Consequently, this study addresses the question of whether firms' social media communication addresses those SDGs that are related to their core business or whether firms communicate about SDGs that are emphasized by stakeholders. To address this research question, we use corporate Tweets addressing the SDGs.

Firstly, our research is based on CSR theory (Bansal & Song, 2017; Drucker, 1984) that links CSR with the core business of corporations. Secondly, it is based on legitimacy theory (Post & Preston, 2012) since it will be analyzed whether corporate SDG communication is conducted in

a reactive way that mainly addresses the need of stakeholders to achieve legitimacy. If firms tweet about SDGs that re related to their business, we assume that they do this because of strategic CSR. For example, firms from the energy sector tweeting about SDG 7 ‘Affordable and Clean Energy’. If firms tweet about the SDHs that are most important for citizens (PWC, 2018), such as SDG1 ‘No poverty’, we assume that they do it because of legitimacy reasons.

We use social media analytics as a method to analyze how Standard and Poor S&P 500 corporations communicate about SDGs on Twitter. Tweets are analyzed using multivariate statistical methods, such as multinomial regression analysis that can analyze categorized dependent variables, such as the industry of the firms in the sample.

Our findings show that firms tweet about those SDGs that are connected to their industries. For example, the energy industry posts significantly more often than other industries about SDG 7 ‘Affordable and Clean Energy’. Furthermore, we find that corporations from the energy, materials, and utilities industries have the highest ratio of SDG-related tweets compared to their total tweet volume. In line with other studies (Kolk, Walhain, & van de Wateringen, 2001), our results suggest that industries with the highest environmental and societal impacts also communicate more about how they address these impacts.

The results of this study contribute to strategic corporate social responsibility theory because they demonstrate that SDGs are used to address sustainability issues that are related to the strategic core businesses of corporations. Furthermore, we contribute to legitimacy theory by suggesting that unspecific corporate SDG communication is mainly conducted because of legitimacy reasons, and specific business-related SDG communication is conducted because of strategic corporate social responsibility. Finally, we contribute to the literature on social media use in non-financial reporting. In contrast to some earlier studies (Cho et al., 2017), our results suggest that firms use social media to communicate business-related corporate sustainability topics instead of general topics that are of interests for their stakeholders.

Further research is needed to analyze stakeholder reactions to corporate sustainability communication through social media. Previous research demonstrated that corporate sustainability reporting might increase corporate reputation. However, more research is needed to test this hypothesis in the context of social media communication.

The remainder of the paper is structured as follows: we provide an overview of the current literature on corporate sustainability, the SDGs, and the use of social media for sustainability reporting. Following this overview, we discuss the theories this research is based on. Then, we describe the methods and results of the study. Finally, we present our conclusions.

4.2 Background

Corporations use multiple platforms to communicate their sustainability performance to stakeholders. These platforms include annual sustainability reports, official webpages, and, most recently, social media platforms. In the last decade, firms have started to add social media outlets, such as YouTube, Twitter, and Facebook, as tools to report on their CSR performance. Using social media as a platform for CSR communication and reporting is highly interactive since it enables the audience and the general public to share, validate, and comment on the presented messages. Social media can be defined as "the production, consumption and exchange of information across platforms for social interaction" (Dutot, 2013, p. 55).

Also, social media might result in better interactive dialogues and stakeholder engagement. Kaplan and Haenlein (2010, p. 67) highlight that "social media allow firms to engage in timely and direct end-consumer contact at relatively low cost and higher levels of efficiency than can be achieved with more traditional communication tools." Hence, social media helps to reach a larger community and changes the communication pattern from a one-to-one to a many-to-many message (Capriotti, 2011). Nevertheless, constructing, prioritizing, and publishing specific content becomes a challenge given the diversity of the audience. Prior research has analyzed the role of reporting in sharing the sustainability agendas with a firm's stakeholders. However, studies found a broad variance about what and how issues are reported (Reilly, 2009; Reilly & Weirup, 2012).

With regard to CSR, researchers have used multiple terms to refer to CSR, such as corporate philanthropy, corporate responsibility, and corporate citizenship (McWilliams, Siegel, & Wright, 2006). These terms have been used interchangeably in academic literature and firms' annual reports. Scholars argue that the variations in defining CSR stem from divergent fundamental assumptions from various fields such as management, finance, and organizational theory (Jamali, 2008). To understand the evolvement of CSR reporting and its connection to the SDGs, we provide a brief chronological review of the evolvement of CSR.

CSR has a multifaceted history in academic literature and practice. Originating in the 1950s, CSR was described as the obligations of businessmen to act in a way that is desirable in terms of societal objectives and values (H. R. Bowen, 1953). In the 1960s. it was widely accepted that CSR goes beyond direct economic or technical interest. More long-term financial gains of CSR were expected, based on the principle that companies should consider the consequences of their activities on others (Davis, 1960, 1967). The 1970s experienced more proactive approaches to CSR. In contrast to earlier years, firms balanced multiple interests and did not only focus on their own interest. At the same time, the concept of stakeholders was introduced (Johnson, 1971). In the 1980s, Drucker (1984) stated that CSR and business performance could correlate if CSR was conducted strategically. He claimed that addressing societal problems was a good business case that improved the competitiveness of a firm. Hence, since the 1980s, CSR and financial performance changed from being seen as a trade-off to going hand-in-hand (Ait Sidhoum & Serra, 2018; Camilleri).

Based on Drucker's claim, the concepts of social entrepreneurship (Nicholls, 2009), the shared value approach (Porter & Kramer, 2011), and the idea of business sustainability arose (Bansal & Song, 2017; Dyllick & Muff, 2016). What these concepts have in common is that they address corporate impacts on society and the environment. They change the CSR approach from being a business case to a sustainability case as an attempt to conduct business in a way that creates positive impacts on sustainable development and society (Bode, Rogan, & Singh, 2019; Weber, 2014b). The proactive and strategic type of CSR also addresses the connection between business and the Sustainable Development Goals (SDGs) that are discussed in the following section.

4.2.1 CSR and the SDGs

In September 2015, the United Nations announced the adoption of the 17 SDGs with 169 associated targets (United Nations, 2015) as guiding criteria for human action (Salas-Zapata & Ortiz-Muñoz, 2019). Unlike the development-centred MDGs, the SDGs represent a transformative shift in sustainability governance between states, private sector, and civil society members in a way that explores possible avenues to achieving sustainable development without depleting environmental resources (K. J. Bowen et al., 2017; Halisçelik & Soytas, 2019). The goals range from reducing poverty, achieving responsible consumption and production, to successful

partnerships that can combat climate change challenges by 2030 (Scheyvens et al., 2016). The SDGs interact with each other (Dawes, 2020), and they explicitly involve businesses as contributors to sustainable development (Williams et al., 2019). This makes them compatible with the triple-bottom-line approach of sustainability (Dalampira & Nastis, 2020). The SDGs represent a shared vision for achieving sustainable development, where corporations can define their business case of sustainability to meet the expectations of investors and other stakeholders (Grainger-Brown & Malekpour, 2019). Some of the SDGs and their indicators address CSR explicitly, such as SDG 12, that addresses responsible consumption and production. Some SDG indicators integrate CSR directly. Indicator 12.6. strives to encourage companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle. Indicator 12.6.1 uses the number of companies publishing sustainability reports as a performance measure (United Nations, 2018).

The SDGs can solve the problem of how companies can address sustainable development and bridge the gap that remains through the use of the TBL as the main concept for business sustainability (Elkington, 2018; Hacking & Guthrie, 2008), even though they are sometimes criticized for their approach to economic growth (Hickel, 2019). The application of the TBL often results in trade-offs between the three bottom lines in favour of the financial bottom line (Gibson, 2006). The SDGs provide an acceptable and integrated framework for corporations to scale up their sustainable business performance based on the 169 targets. The targets can act as guidelines for decision-makers to contribute positively towards society and the environment as presented above (Bebbington & Unerman, 2018). The SDGs have shifted CSR from being reactive and company-focused to a framework that can help firms influence sustainable development positively (ElAlfy & Weber, 2019). Consequently, they rather complement reporting guidelines, such as the widely used GRI, instead of being a substitute for them. The GRI even published a guideline about how to integrate the SDGs into their reporting framework (Global Reporting Initiative, 2018). While the GRI is a guideline about how to structure CSR reporting, the SDGs address the content of CSR activities and reporting.

Recent studies have analyzed the literature on the SDGs in relation to improving corporate sustainability performance though SDG related tools (Morioka, Bolis, & Carvalho, 2018), by enhancing corporate legitimacy (Donoher, 2017), and because they support organizations to realize

a competitive advantage while contributing towards the SDGs and sustainable development (Sullivan, Thomas, & Rosano, 2018).

Consequently, SDG based CSR reporting has increased in a very short time. According to a report published by PWC (2018), 62 percent of the firms in their sample mention the SDGs in their report. Furthermore, more than a third of the firms selected priority goals that they addressed in their reporting with SDG 13 “Climate Action” as the most addressed SDG. However, the same report also criticizes that the SDGs are often addressed in an unspecified way that does not connect them to the core business of the firms as demanded by strategic CSR (Orlitzky, Siegel, & Waldman, 2011).

Finally, Rosati and Faria (2019) shed light on the relationship between the adoption of SDGs and internal organizational factors. The authors concluded that reporting on SDGs is positively correlated with larger corporation size, higher intangible assets, and higher commitment to external sustainability assurances.

4.2.2 CSR Reporting

A global study by Kolk (2003) found differences in sustainability reporting between sectors. Sectors with higher impacts on the environment and society, such as utilities and oil & gas, have a higher percentage of sustainability reporting with lower impacts, such as telecommunications. Hence, it seems that different motivations exist to conduct CSR reporting. Furthermore, the connection between CSR reporting and CSP is discussed controversially. Some studies argue that external influences are mainly responsible for CSR reporting. Such influences may include institutional impacts (DiMaggio & Powell, 1983; Zhilong, Hafsi, & Wei, 2009), such as regulations (Cheung, Welford, & Hills, 2009; Dobers & Halme, 2009; Dutta, Lawson, & Marcinko, 2012), and stakeholder pressure. Firms may publish CSR reports to address the needs of their shareholders and other stakeholders, and consequently increase their legitimacy (Suchman, 1995; Wilmshurst & Frost, 2000). This strategy, however, might lead to information that is rather focused on stakeholders’ expectations instead of addressing core business impacts and exposure (Gómez-Carrasco et al., 2020).

Clients are a special group of stakeholders driving CSR reporting. Corporate clients, for instance, might ask their suppliers to report about their corporate social performance (Christmann & Taylor, 2001; Guoyou, Saixing, Chiming, Haitao, & Hailiang, 2011; Yu, Welford, & Hills,

2006) because of regulations in their home country or because of demands from environmental and social management systems (Christmann & Taylor, 2001; Guoyou et al., 2011).

In addition to institutional and stakeholder pressure and legitimacy, accountability is a driver for corporate sustainability reporting (Schwartz & Carroll, 2008). Accountability means being responsible to stakeholders with reward or sanction power (Beu & Buckley, 2001). Consequently, to create transparency, firms express their responsibility vis-a-vis the stakeholders through reporting and other means of communication, such as social media. However, the question about the connection between CSR reporting and CSP remains unanswered.

Though some studies found a positive correlation between both (Busch & Hoffmann, 2011; Margolis & Walsh, 2001; Weber, Koellner, Habegger, Steffensen, & Ohnemus, 2008), other studies could not establish this connection (Patten, 2002). In contrast to the assumptions based on legitimacy theory, strategic corporate social responsibility is less motivated by stakeholders than by firms' exposure to and impacts on sustainability risks and opportunities (Guthrie & Parker, 1989; Sprengel & Busch, 2011). However, corporate sustainability performance might have positive impacts on both, corporate strategies and stakeholder satisfaction (Orlitzky & Swanson, 2008) because of the ability to reduce environmental and social costs (Delmas & Blass, 2010; Hart & Ahuja, 1996; King, 2007), or because it attracts clients (Matute-Vallejo, Bravo, & Pina, 2011).

To summarize, CSR reporting is an important tool to improve corporate sustainability performance (Sumiani, Haslinda, & Lehman, 2007). However, both stakeholder management and strategic CSR require significant financial resources (Orlitzky et al., 2011). Therefore, firms communicate about sustainability issues, such as the SDGs, because of two reasons. First, they might expect benefits by addressing external stakeholders and institutions. Second, CSR rep[orting might have a positive influence on internal factors, such as lower environmental and societal costs and higher returns (Clarkson, Li, Richardson, & Vasvari, 2008).

4.2.3 Conventional and Social Media Reporting

With the rapid growth of social media users, many corporations started to communicate their CSR activities and outcomes through social media (Alexander & Gentry, 2014; Manetti & Bellucci, 2016). Using social media for CSR communication is more than just selecting a "target audience" since these channels enrich the communication as stakeholders have a voice in the dialogue as well. Go and Bortree (2017) emphasized the role of social media in enhancing the

public opinion about the CSR performance of a corporation that communicates sustainability issues relevant to its activities.

In line with other similar studies (Gómez-Carrasco et al., 2020; Lee et al., 2013), we only analyzed one type of social media to assess a specific type of communication. In our case, we utilized high-frequency daily communication with stakeholders via Twitter. Other types of social media, such as Facebook, are used for different kinds of communication. Mixing both would blur the results of the study.

4.3 Theoretical Framework and Research Questions

Theoretically, Drucker's (1984) notion of strategic CSR changed the view of how firms manage their environmental and societal impacts. Before this, CSR had been regarded as an add-on to the core business of a firm. The connection between CSP and financial performance was often perceived as a trade-off. Drucker, however, stated that strategic CSR could enhance the competitiveness of firms by addressing societal issues. Consequently, firms that follow a strategic CSR approach address topics in their reporting that are connected with their core business (Weber, 2014a).

Corporate sustainability, as described by Bansal and Song (2017), is a further development of strategic CSR. The concept connects business strategy with business sustainability using a systems theory approach that includes business and society. The starting point of the concept is a societal need; in our case, sustainable development, that is represented by the SDGs. In contrast to CSR, which mainly tries to fix the negative impacts of businesses, the sustainable business approach addresses negative impacts on sustainability caused by businesses and tries to address business and sustainability through a systems lens. Subsequently, it looks at the connection between business activities and their impacts.

Hence, corporate sustainability theory argues that companies address the SDGs because they affect their core business. Consequently, firms communicate more about SDGs that are related to their core business. Energy companies, for instance, should use social media to communicate about SDG 7 'Affordable and Clean Energy' rather than SDG 1 'No Poverty'. However, concerning the communication of corporate sustainability, the question remains: how do

companies communicate about their corporate sustainability performance and what are the drivers for communication?

Legitimacy theory claims that companies communicate to legitimize their role in society and towards stakeholders (Post & Preston, 2012). Legitimacy oriented communication is rather reactive to societal and stakeholder expectations as well as events by reporting mainly about positive aspects of corporate sustainability (Gómez-Carrasco et al., 2020), which may not be at the core of the reporting companies' businesses. Some studies, however, doubt that legitimacy is the major driver for CSR reporting because a high percentage of CSR communication is not related to major sustainability-related events or stakeholder pressure (Post & Preston, 2012). Hence, based on legitimacy theory, it can be argued that those SDGs are mentioned in social media communication that are major societal concerns, such as SDG1 'No Poverty'.

Based on the two theories, we analyze the research question, whether firms report on SDGs that are related to their core business (corporate sustainability theory) or whether they report on SDGs that are emphasized by stakeholders, such as SDG 1 and SDG 2 (legitimacy theory).

4.4 Methods and Sample

This section describes the methods we used to collect and analyze the data. Using social media analytics, we investigated how corporations used Twitter to communicate their sustainability agendas addressing the SDGs. To analyze the content of the tweets as social phenomena, we applied content analysis (Krippendorff, 2018). This method does not treat data as physical events but as communication that is created and distributed by a sender to be seen by a receiver (Krippendorff, 2018). In our study, the senders are the companies that tweet information to be seen by their stakeholders. The text that is analyzed is Twitter communication (tweets) about the SDGs. Hence, our type of content analysis is computer-aided text analysis that does not interpret the meaning of the text in terms of positive or negative sentiment, but rather the content, such as keywords related to the SDGs.

Social media analytics is a new method of content analysis that analyzes the content of high-frequency social media contributions. It consists of two steps. In the first step, the researchers collect and classify tweets based on relevance. In the second step, the content of the tweets is analyzed. Given the ability of AI-based classification to classify large amounts of content (for

instance, tens of thousands of tweets in this work) automatically, such approaches increase the reliability, validity, and stability of the analysis that is often a problem in manual content analyses (Harwood & Garry, 2003; Krippendorff, 1980, 2004). We used this approach since SDG related keywords are relatively easy to identify because the field that each SDG addresses is relatively narrow.

4.4.1 Data Collection and Processing

The main goal of this study is to ascertain which SDG-related efforts companies publicize or discuss on social media. Specifically, we examined tweets of Standard and Poor's 500 companies (S&P500) by conducting analyses by company and sector. In this study, we collected two datasets from Twitter, the S&P500 timeline dataset (S&P500), and General SDG-related tweets (GenSDG).

We collected Twitter timeline tweets of 433 companies of the S&P500 that have a presence on Twitter. We gathered the tweets on July 9, 2019, using the twarc[2] Python library, which is a wrapper for the Twitter public APIs. Due to Twitter restrictions, we could only scrape the newest 3,200 tweets for each company. Thus, the time covered by the collected tweets for each company depends on the volume of their Twitter activity. Overall, we collected 1,171,074 tweets (2,568 tweets per company on average) that were sent between August 21, 2008, and July 9, 2019.

We collected general SDG-related tweets, GenSDG, between September 7 and September 18, 2018, using the aforementioned twarc library (702,475 tweets) to train the text classifier that automatically detects SDG-related tweets.

To identify SDG-related tweets in the S&P500 timeline dataset, we used two different labeling methods, namely a hashtag-based labeling and automatic text classification. For the hashtag-based method, we extracted all the hashtags that appeared in the S&P500 dataset, and we manually labelled hashtags that appeared more than three times, as related to one or more SDGs or none of the SDGs. Though the hashtag labelling was done outside the context of individual tweets, we looked at sample tweets containing hashtags, and we labelled hashtags as pertaining to an SDG if it was sufficiently specific to that SDG. For example, the hashtag #climateAction is specific to SDG13, while hashtag #planet is too general. Thus, we use 17 SDG-specific labels

[2] https://github.com/DocNow/twarc

(SDG1-17), and we also use a “general” label for hashtags such as #17goals and #sdgs. Overall, we labeled 1,341 hashtags (see Table 8).

Table 8: Twitter hashtags

Twitter Hashtags
#SustainableDevelopmemt, #GlobalGoals, #GlobalCitizen, #SustainableDevelopmentGoals, #AllAboardForGlobalGoals, #renewables4development, #2030Now, #Agenda2030, #CSR, #SDGs, #SDG1, #SDG2, #SDG3, #SDG4, #SDG5, #SDG6, #SDG7, #SDG8, #SDG9, #SDG10, #SDG11, #SDG12, #SDG13,#SDG14, #SDG15’, #SDG16, #SDG17, #SDG18, #SDGForum2018, #SDGs-ForCanada, #foodsecurity, #sustainablefinance, #AllAboardForGlobalGoals, #re-newables4development, #TeachSDGs, #Sustainability, #philanthropy, #SocialGood, #ZeroHunger, #Development, #TransformingCommerce, #socialimpact, #repla-ceplastic, #GoodGovernance, #ProcurementWithPurpose, #procurement, #socialimpact, #strategy, #ReturnonAssets, #OilandGas, #operatingmargin, #price-Fixing, #returnOnInvestment, #returnOnCapital, #returnOnEquity, #Corporate-Performance, #DigitalTransformation, #DataManagement, #Cybersecurity, #Lead-ership, #RiskManagement, #PerformanceImprovement, #SupplyChains, #FinancialIndustry, #FinancialServices, #activistinvestors, #privateequity, #ActivistIn-vesting, #ShareholderActivism, #FinancialServices, #CorporateTransformation,#corporatewellness, #Progress, #digitaltransformation, #tradingstrategy, #trend-following, #roe, #stockpicking, #stockselection, #stocks

Next, we automatically labelled tweets containing such hashtags with the labels of the hashtags. Using this method, we labelled 2.0 percent of the tweets in the timelines of the companies between August 8, 2016, and July 9, 2019. The number of SDG related tweets during this period is presented in Figure 4.

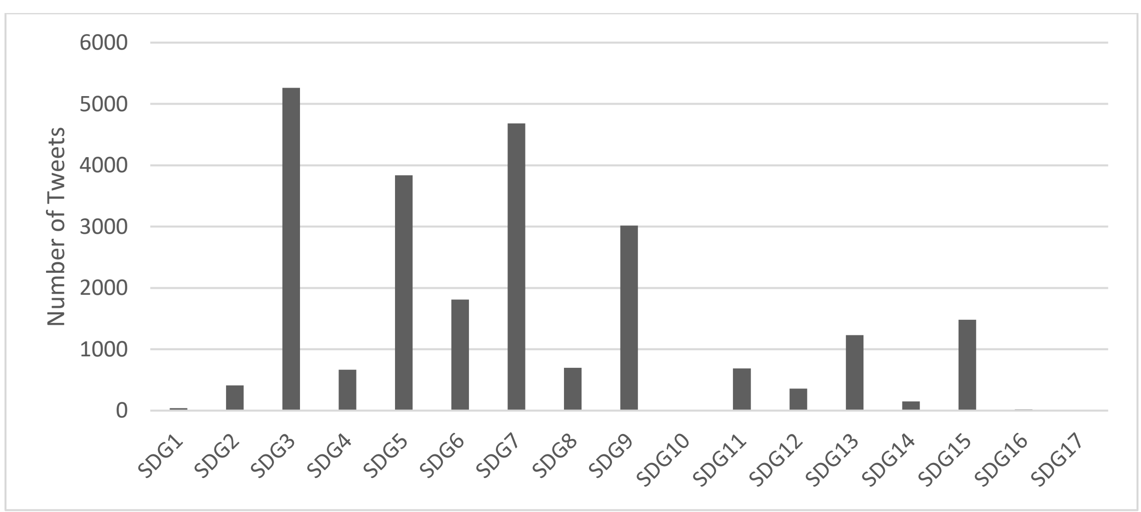

Figure 4: Frequency of tweets by SDG

Table 9 shows sample tweets that were tagged using this method. Tagging is a process to determine if tweets are related to SDGs, and if so to which one(s). We reckoned that other tweets that did not contain our labeled hashtags might also be SDG-related. Therefore, we used supervised text classification to label tweets as related to specific SDGs (SDG1-17) or SDGs in general (general) automatically. To train a classifier, we needed positive example tweets for all labels and negative examples for non-SDG-related tweets. For positive examples of SDG-related tweets, we used the tweets we automatically obtained using the hashtag-based method (23,937 tweets). To increase the number of training examples, which would typically improve subsequent classification, we also tagged the GenSDG tweet set automatically by matching the tweets that contained the aforementioned 1,341 SDG related hashtags. This method led to additional 96,593 tweets. As for negative tweets, we used the remaining S&P500 tweets that did not contain hashtags that matched our list of 1,341 labeled hashtags or any hashtag that appeared in the genSDG tweet set. In doing so, we obtained tweets that were most likely unrelated to SDGs. The resulting number of negative tweets was 157,388 tweets. Given our automatically tagged positive and negative tweets, we trained a text classifier using fastText[3] (Joulin, Grave, Bojanowski, & Mikolov, 2016), which is a deep neural network classifier, using default learning rate and epochs. Prior to training, we tokenized the text using the NLTK toolkit[4] and performed case-folding. We used the resultant model to classify all remaining tweets. We accepted the classification only if the classifier was more than 70% confident. In doing so, we were able to label 10,845 additional tweets with corresponding SDGs. Overall, we used 24,803 SDG related tweets from 433 S&P 500 firms for our analysis.

Table 9: Sample tweets

SDG	Company	Sample Tweet
SDG 5	3M	Thank you Emma for letting us share your story! Go #WomenInStem!
SDG 6	American Water	Running the water while brushing your teeth wastes up to 4gallons a minute. We all have a role in #waterconservation.
SDG 15	Altria	Our companies look 4 ways to respect the environment. Heres how our e-vapor company Nu Mark recycles: bit.ly/1EsFVtg #EarthDay

[3] https://fasttext.cc
[4] https://www.nltk.org/

4.4.2 Sample and Statistical Methods

To analyze which industries tweet about which SDGs, we used a multinomial regression analysis that has been used in many other studies in finance to explore the CSR communication of different sectors and in different countries (Champagne & Kryzanowski, 2008; Gaganis, Pasiouras, Doumpos, & Zopounidis, 2010; Sievänen, Rita, & Scholtens, 2012). This type of regression can be used if the dependent variable is categorized into more than two categories. It predicts the probability of category membership, in our case, the industry classification, based on multiple independent variables, the SDGs. The method does not make assumptions about the sample size and does not assume normality, linearity, or homoscedasticity of the data (Hosmer Jr, Lemeshow, & Sturdivant, 2013; Starkweather & Moske, 2011). As the dependent variable, we used the industry classification. The industry classification is presented in Table 3. As independent variables, we used the frequency of tweets of the 17 SDGs (see Figure 4).

Table 10: Industries and number of members per industry

Industry	N
Consumer Discretionary	69
Consumer Staples	62
Energy	72
Financials	256
Health Care	285
Industrials	336
Information Technology	455
Materials	144
Real Estate	180
Telecommunications	30
Utilities	286
Total	2175

Multinomial regression analysis (Osborne, 2015) was used to calculate the relative risk, also known as Risk Ratio (RR). The RR, which is the relative ratio of two probabilities, can be used to compare the average number of tweets about the SDGs between different industries. In our case, RR compares the frequency of tweets in the base group with the frequency of tweets in other industry groups. We used RR instead of the Odds Ratio (OR) because OR represents the number of events divided by the number of non-events. However, in our case, we calculate frequencies and not events. RR informs about both the direction and the effect size in multinomial regressions (Kleinbaum, Dietz, Gail, Klein, & Klein, 2002). RR above 1 suggests that the probability of

tweeting an SDG is larger compared to the base reference. Risk ratios smaller than 1 indicate that the frequency is lower than the base rate. The lowest value is 0, while there is no limit to the value in the positive direction. The significance of RR must be carefully analyzed, particularly in cases of low tweet frequencies. A low number of tweets could create high RR if other industries do not tweet about the same SDG at all. Then, the high RR, however, is not significant because the sample is too small.

4.5 Results

We analyzed the ratio for Tweets about the SDGs versus all tweets per industry. Figure 5 shows that Energy, Materials, and Utilities have the highest ratios. The lowest ratios are for Telecommunications and Real Estate, where the ratio is below 1 percent.

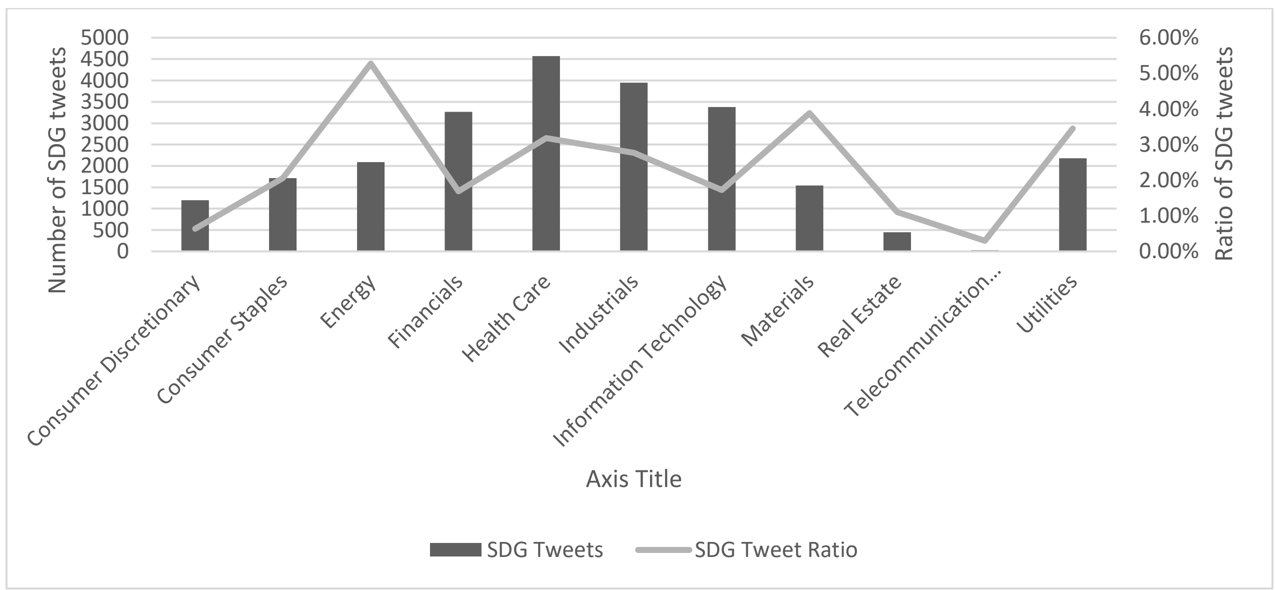

Figure 5: SDG tweets and SDG tweets ratio per industry

Table 11 shows that some sectors tweet more about particular SDGs than others. SDG 2 is tweeted more frequently by representatives of Consumer Staples and Materials. For SDG 3, Health Care has a higher frequency than other sectors. Representatives from Energy, Information Technology, and Materials have a higher probability to tweet about SDG 4. Financials, Health Care and Information Technology tweet more frequently about SDG 5 than other sectors do. SDG 6 is often tweeted by Consumer Staples, Industrials, Materials, and Utilities. High-frequency tweeters for SDG 7 are Energy, Industrials, and Utilities. Financials tweet more frequently about

SDG 8 than other sectors, while Materials, as well as Information Technologies tweet more frequently about SDG 9. The frequency of tweets about SDG 10 is generally low, while SDG11 is more frequently tweeted by Consumer Staples and Materials. SDG 12 is more frequently addressed by Materials and Consumer Staples, while the Energy sector addresses SDG 13 more frequently than others. SDG 15 is mostly addressed by Materials and Utilities. Finally, the frequency of tweets about SDG14, SDG 16, and SDG 17 is relatively low.

Table 11: Average SDG-related tweets per industry

Sector	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Tele-communication	Utilities
SDG1	0.06	0.48	0.00	0.14	0.07	0.00	0.08	0.11	0.00	0.00	0.00
SDG2	1.17	6.13	0.42	0.53	0.32	0.13	0.25	2.89	0.05	0.00	0.15
SDG3	0.86	8.16	1.17	10.25	53.42	4.91	10.60	4.22	8.00	1.33	0.65
SDG4	0.70	0.90	3.63	1.42	0.89	0.93	3.46	3.06	0.25	0.33	0.92
SDG5	3.83	8.45	5.58	16.14	10.53	7.86	12.49	4.83	2.60	5.67	5.19
SDG6	1.20	6.06	1.79	0.48	1.14	13.98	0.60	19.50	0.15	0.00	8.73
SDG7	1.13	1.90	53.54	3.38	0.39	20.32	5.26	3.44	4.30	0.00	53.58
SDG8	0.13	0.23	0.88	5.28	0.11	3.00	1.42	0.83	1.80	0.33	0.27
SDG9	2.77	6.32	6.67	4.64	9.86	6.64	11.89	19.61	1.15	0.67	3.38
SDG10	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SDG11	1.28	5.19	2.29	1.20	0.65	1.96	0.72	4.11	0.50	0.00	1.15
SDG12	0.72	3.00	0.04	0.05	0.09	0.98	0.00	8.33	0.00	0.00	0.04
SDG13	0.52	3.52	9.17	4.94	0.49	5.00	1.02	4.61	0.55	0.00	3.23
SDG14	0.35	0.32	0.08	0.44	0.05	0.64	0.34	0.94	0.00	0.00	0.27
SDG15	2.45	4.52	1.83	2.11	2.11	4.16	3.77	9.28	3.05	1.33	6.23
SDG16	0.16	0.03	0.00	0.02	0.02	0.02	0.05	0.00	0.00	0.00	0.00
SDG17	0.00	0.03	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00

The correlation between the SDGs is presented in Table 12. In general, the correlation between the SDGs is low. The highest correlation is r = .38. Furthermore, most of the correlations are not significant. Therefore, there is a low risk of autocorrelation for the multinomial regression.

Table 12: Correlation coefficients for the SDGs

	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16
SDG2	0.06															
SDG3	-0.01	-0.04														
SDG4	0.10*	0.02	0.15**													
SDG5	0.12*	0.02	0.28**	0.38**												
SDG6	0.05	0.01	-0.01	0.02	0.01											
SDG7	-0.02	-0.01	-0.02	0.24**	0.04	0.01										
SDG8	0.03	-0.03	0.13	0.23	0.20	0.01	0.10									
SDG9	0.03	-0.02	0.19**	0.26**	0.27**	0.07	0.138*	0.11*								
SDG10	-0.01	-0.01	-0.02	-0.02	0.14*	0.01	-0.01	0.00	0.03							
SDG11	0.14	0.02	-0.03	0.11*	0.01	-0.01	0.06	0.07	0.07	0.01						
SDG12	0.01	0.16**	-0.03	0.00	0.01	0.02	0.02	-0.02	0.09	-0.01	0.04					
SDG13	-0.01	0.11*	0.11*	0.09	0.20***	0.28***	0.30***	0.24**	0.24**	0.03	-0.01	0.13**				
SDG14	0.03	0.02	-0.01	0.05	0.05	0.08	0.08	-0.01	0.01	-0.01	0.03	0.01	0.00			
SDG15	0.05	0.10*	-0.01	0.17**	0.18**	0.17**	0.13**	-0.01	0.28**	0.01	0.05	0.17**	0.13**	0.06		
SDG16	0.06	0.06	0.03	0.23***	0.09	0.155*	-0.03	0.00	0.15	-0.01	0.01	0.01	0.05	-0.01	0.11*	
SDG17	-0.01	-0.01	0.01	-0.02	0.11*	0.01	-0.02	0.01	0.03	-0.01	-0.02	0.13**	0.00	-0.02	0.01	-0.01

(: <.05, **: <.01, ***: <.0001)*

To analyze the sector that is most suitable as the base outcome for the multinomial regression analysis, we calculated the difference between the average number of tweets per sector and the total average. The smallest difference between a sector average number and the total average (x = 3.29) is .04 for Consumer Staples. Therefore, we select Consumer Staples as the base of the multinomial logistic regression. This makes the interpretation of the results more intuitive because RR values below 1 can be interpreted as smaller than the average, and values higher than 1 can be interpreted as higher than the average. The result of the multinomial regression, however, is independent of the base or reference category. The risk ratios of the multinomial regression are presented in

Table 13. The regression is significant ($p < .00001$) with an r^2 of .344.

Table 13: Risk ratios per industry and SDG

SDG	Consumer discretionary	Energy	Financials	Health-care	Indus-trials	Information technology	Materials	Real estate	Telecom	Utilities
SDG1	0.929	0.000	1.123	0.731	0.000	0.768	1.128	0.000	0.288	0.000
SDG2	0.935*	0.782	0.980	0.863	0.580	0.899	0.943	0.370	0.000	0.529
SDG3	0.736**	0.823	0.978	1.020	0.973	0.977	0.849*	0.995	0.949	0.395*
SDG4	1.117	1.034	0.884	1.024	0.841	1.145	1.187	0.750	1.643	0.623
SDG5	0.998	1.042	1.094*	1.059	1.055	1.053	0.853*	0.938	1.116	1.030
SDG6	0.914	1.016	0.512*	1.011	1.005	0.656**	1.029	0.441	0.000	1.040
SDG7	1.025	1.224*	1.034	0.738	1.167	1.137	0.994	1.158	0.000	1.249*
SDG8	0.789	1.492	1.978	0.481	1.849	1.597	1.235	1.939	2.007	1.076
SDG9	0.963	0.805*	0.953	1.048	0.997	1.053	1.069*	0.893	0.754	0.894
SDG10	0.000	0.000	0.589	0.000	0.000	0.000	0.000	0.000	1.477	0.000
SDG11	0.961	1.002	0.887	0.931	0.962	0.771*	0.982	0.848	0.000	0.966
SDG12	1.015	0.119*	0.400	0.712	1.021	0.000	1.021	0.000	0.204	0.079*
SDG13	1.037	1.106	1.198*	0.983	1.030	1.019	1.049	1.141	0.000	1.063
SDG14	1.494	0.489	1.384	0.511	1.015	1.083	1.996	0.000	0.000	0.803
SDG15	0.940	0.768	0.850	0.856	0.907	1.052	1.034	1.112	0.915	1.137
SDG16	15.830**	0.000	0.441	1.126	0.018	2.020	0.000	0.000	0.000	0.000
SDG17	0.000	0.000	33.627	83.461	0.000	0.000	0.000	0.000	>100	0.000

* indicates $p < .05$, ** indicates $p < .001$

The probability that members of the consumer discretionary sector tweet about SDG 2 and SDG 3 is smaller than in the reference sector, but there is a larger probability for representatives of Consumer Discretionary to tweet about SDG 16. The energy sector tweets significantly more about SDG 7, and significantly less about SDG 9, and SDG 12 than other sectors, while the financial sector addresses SDG 5 and SDG 13 more frequently than other sectors. However, financial sector members tweet significantly less about SDG 6. Another sector that shows significant differences from the base is Information Technology. Firms in these sectors tweet significantly less about SDG 6 and SDG11. The Materials sector tweets significantly more frequently about SDG 9, but significantly less about SDG 5. Finally, the Utilities sector tweets significantly less frequently than the base about SDG 3 and SDG 12, but significantly more frequently about SDG 7.

4.6 Conclusion

This study analyzed two recent phenomena in corporate sustainability. The first is the use of social media to communicate CSR-related messages to stakeholders. The second phenomenon is the integration of the SDGs into CSR. Hence, the objective of this study was to analyze the connection between SDG-related tweets and the core business of the tweeting firm. We hypothesized that companies follow a strategic corporate sustainability approach and therefore tweet about SDGs related to their core business. Theoretically, the study is based on strategic corporate sustainability (Bansal & Song, 2017) and legitimacy theory (Suchman, 1995).

Using the twarc Phyton library, we obtained and subsequently analyzed tweets of S&P 500 companies that address SDGs. The search resulted in 24,803 SDG-related tweets that have been analyzed using multinomial regression analysis.

SDG 3 ‘Good Health and Wellbeing’, SDG 5 “Gender Equality”, SDG7 ‘Affordable and Clean Energy’, and SDG 9 ‘Industry, Innovation and Infrastructure’ have been tweeted the most. This contradicts another study that found most firms addressing SDG 13 ‘Climate Action’ in their reporting. SDG 13, however, has an above-average frequency in all industries, but Telecom and Healthcare.

We found that Energy, Materials, and Utilities have the highest SDG ratios. The lowest ratios are for Telecommunications and Real Estate. This result is in line with (Kolk, 2003), who found that Telecommunications and Real Estate – that has been subsumed in Other Services – are below average with regard to CSR reporting. They also found that Energy, Materials, and Utilities were above average. Hence, our results suggest that sustainability communication through social media is not different from conventional sustainability reporting regarding the amount of reporting compared to the sustainability impact of the sector.

The multinomial regression analysis resulted in a significant regression function that suggests differences between industries with regard to addressing the SDGs. The results demonstrate that enterprises communicate SDGs that are connected to their core business. For example, SDG 7 ‘Affordable and Clean Energy’ is more often tweeted by Energy, Materials, and Utilities. The materials sector tweets more about SDG 9 ‘Industry, innovation and infrastructure’ than other sectors. These results are consistent with strategic CSR (Drucker, 1984) and corporate sustainability (Bansal & Song, 2017) and are in contrast to findings by PWC (2018) that support legitimacy theory.

Hence, our results suggest that the firms in our study follow a strategic approach to corporate sustainability. By communicating SDGs relevant to their business, they address issues that might increase their competitive advantage (Ait Sidhoum & Serra, 2018; Wichaisri &

Sopadang, 2018). In contrast, addressing SDGs that are not relevant to core business but to stakeholders because of legitimacy might create a trade-off, because addressing and communicating SDGs that are not relevant for the business is expensive and does not create direct financial returns. However, the results of this study suggest that the SDGs are used strategically.

Also, with regard to addressing corporate sustainability as defined by Bansal and Song (2017), the results show that firms' SDG communication is in line with corporate sustainability. The tweets address a societal need in the form of an SDG that a firm can influence. Thus, they follow a systemic view instead of just addressing all, or some SDGs, at the same time without focusing on company relevant SDGs. The energy sector, for instance, belongs to industries with high environmental and social impacts (Talbot & Boiral, 2013), and consequently tweets more frequently about the SDGs than other sectors with lower impacts. Consumer staples are mainly oriented to retail clients and have a high environmental and societal impact as well. Besides, some of the multinational Consumer Staples companies, such as Unilever, have a strong commitment to sustainability and the SDGs. Hence, in our study, they are also among the leaders with regard to SDG communication. These results are consistent with Scheyvens et al. (2016), who suggest that reporting should address the sustainability impacts of corporations.

Furthermore, our results contribute to legitimacy theory. According to this theory, firms communicate about topics that are popular with their stakeholders (Preston & Post, 1975). This behaviour has also been found for CSR communication on social media (Gómez-Carrasco et al., 2020). Our results, however, add to legitimacy theory and are in agreement with Guthrie and Parker (1989), who found that firms do not exclusively communicate about CSR driven by achieving legitimacy. If tweets about the SDG were exclusively driven by legitimacy motivations, firms would tweet about the most popular SDGs. These are, SDG 1 'Eradicate Hunger', SDG 2

‘Eradicate Poverty’, and SDG 3 ‘Good Health and Well-Being’ (PWC, 2018). Hence, we suggest that corporate communication about the SDGs is driven by both, striving for legitimacy and strategic CSR. In our case legitimacy theory explains that companies communicate about SDGs in general, but strategic CSR explains which SDGs companies communicate.

The difference between sectors in the ratio of SDG tweets compared to all tweets is interesting because the SDGs should be relevant to all industries. As examples, SDG 9 and SDG 11 relate directly to the real estate industry, and SDG 9 relates to the telecommunications industry. These sectors, however, have a low ratio of SDG tweets. Hence, some sectors seem to be further advanced in integrating the SDGs into their target-setting, corporate governance, business models (Dahlmann, Stubbs, Griggs, & Morrell, 2019), and finally, communications.

Communicating the SDGs because of strategic CSR has some practical implications. Connecting the SDG with the core business of companies indicates that businesses take sustainable development seriously and that the SDGs are a useful framework for the corporate world. Even if we assume that reporting about the SDGs does not automatically translate into actions, it increases the transparency about corporate activities related to sustainable development. If firms address and communicate the SDGs, because they are linked to their core business and not just to achieve legitimacy, SDG tweets can be used to analyze the sustainability performance of firms, for instance, by sustainability rating agencies.

Because the SDGs have been introduced only recently, more research is needed to explore the long-term use of the SDGs in corporate sustainability. Furthermore, research should be conducted to assess stakeholder responses related to SDG communication. In addition, it is interesting to understand why there are differences between industries in the frequency of SDG-

related tweets. Finally, other types of social media might be analyzed to understand differences in sustainability communication between different types of social media.

MANUSCRIPT ENDS

Chapter 5

5 Corporate Sustainability Reporting: The Case of the Banking Industry

CSR reporting is a common task for many corporations. CSR can allow firms to shape environmental stewardship hence can reap a competitive advantage. Research shows a positive relationship between positioning this competitive advantage within stakeholders and corporate legitimacy. However, because of the lack of harmonization in voluntarily reporting practices, CSR reports are hard to compare and often it is not possible to evaluate corporate social performance based on voluntary reporting.

This lack of comparability is also true for the financial industry with its complex and often indirect interactions with the environment and society. Therefore, initiatives such as the TCFD and SASB have developed recommendations to standardize CSR reporting and to make it mandatory. In this chapter, we propose to follow these approaches and to standardize CSR reporting in the financial industry by addressing the UN's SDGs. This chapter sheds light on the current challenges in CSR and sustainability reporting such as the lack of a clear definition of 'materiality', which negatively impacts the quality as well as the comparability of reports within sectors. We also highlight the issues of the confusion of reporting cycles, which stems from the voluntary nature of CSR when compared to systematic financial reports. Finally, we emphasize the challenges of stakeholder engagement given the existence of multiple reporting frameworks and target audience.

Since the global economic crisis in 2008, financial institutions have been adopting principles and CSR guidelines to ensure that their core business operations not only target economic goals but also address their social and environmental impacts. Finally, we provide a set

of policy recommendations that can help improve CSR reporting in the financial sector and other sectors as well. We emphasize that CSR reporting should not only consider sustainability risks for the financial industry, but also positive and negative impacts of its core operations on sustainable development. We highlight the importance of the standardization of reporting frameworks and recommend using the SDGs as a framework to achieve strategic CSR across within organizations. As a result, investors and other stakeholders can use CSR reports to evaluate sustainability risks and opportunities of the core business operations of their firms.

This chapter is adapted from:

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MANUSCRIPT BEGINS

5.1 Introduction

The relationship between corporations and their stakeholders is not new and theorizing about this relationship has a long history in the academic literature as well as in practice. The debate on what we now refer to as *CSR* has existed in the academic literature for more than seventy years, without a global consensus on its definition (Carroll, 1999). Organizations, both public and private, have realized their role in serving diversified stakeholders, who have concerns over the societal and environmental implications of businesses. As a result, organizations have been reporting not only on their financial performance and enterprise risk management but also on their social and environmental performance. In most cases CSR reporting also referred to as sustainability reporting, is a voluntary tool that organizations use to report qualitative as well as quantitative information that communicates the organization's abilities to address stakeholders' concerns. Sustainability reporting, however, is not only a tool to communicate to stakeholders but also to achieve the ultimate goal, namely corporate sustainability (CS).

In this chapter, we define CS in a broad sense as the ability of a firm to manage sustainability impacts that are material for a firm, such as environmental or societal risks and opportunities, and to manage impacts of the firm on sustainable development, such as positive and negative impacts on the environment and society. This definition is in-line with Porter and Kramer (2006) who found that CSR has an inside-out dimension focusing on the impacts of a firm on the environment and society and an outside-in dimension addressing the impact on a firm.

These two dimensions are also current drivers for CS reporting in the financial industry. Following the warnings of Mark Carney, the Governor of the Bank of England, that climate-related risk might influence the stability of the financial industry (Carney, 2015), the Financial Stability Board (FSB) of the G20 founded the Task Force on Climate-related disclosure (Task Force on

Climate-related Financial Disclosures, 2017) that has been developing reporting guidelines that should enable the financial industry to manage these risks.

Also, the GRI, the most widespread reporting standard, has addressed the financial industry. They developed a financial services supplement (The Global Reporting Initiative, 2011) that includes specific sustainability indicators for the financial industry.

The management expression, "only what can be measured, can be managed", has remained a challenge for sustainability reporting in general and in the financial industry. Organizations have been implementing sustainability management and measurement systems that capture the impact of their operations on sustainable development and vice versa. Meanwhile, diverse stakeholders have been advocating for periodical sustainability disclosures, and there has been an increase in national policies that address sustainability reporting in different countries such as France, Sweden, and Germany. Despite the increasing number of corporations and financial institutions that report on their sustainability performance, investors and other stakeholders have constantly criticized current reporting mechanisms for failing to provide material information that can guide decision-making.

The financial industry, for instance, is often criticized for not disclosing the impacts of their financial products and services, such as loans and investments, on the environment. Instead, they mainly focused on reporting the direct impacts of their activities, such as the energy use of their buildings or the use of materials (Weber & Feltmate, 2016). Though, we are far from saying that banks are responsible for negative environmental and societal impacts of their clients, failing to disclose these indirect impacts means not to disclosed major material risks.

To contribute to the discussion about CS reporting in the financial industry, we will, firstly, provide a critical review of the evolvement of the CSR literature and the evolution of sustainability

reporting. The second section will cover the leading reporting frameworks in order to understand the diverse stakeholder's needs for sustainability and climate-related disclosures. The third section will shed light on the financial sector CSR and sustainability practice with a focus on climate-related reporting. We will analyze the challenges of sustainability reporting namely: 1) limited understanding of the scope of corporate responsibility, 2) the existence of multiple reporting frameworks, 3) and the confusion of reporting cycles. Finally, the paper will provide recommendations that should enhance the quality of sustainability reporting and address climate change-related risks and opportunities in the financial sector.

5.2 Corporate Social Responsibility – Conceptual Foundation

The starting point for our analysis of corporate sustainability reporting stems from the overarching concepts of CSR and sustainability. Reporting on sustainability/CSR performance has been recognized as a driver for corporate reputation as well as the financial performance of organizations that report on their economic, social, and environmental performance. In order to understand the shifts in the focus and development of sustainability reporting, this section will provide a brief review of the evolvement of "corporate responsibility".

The origins of corporate responsibility have a rich and multi-faceted history in academic literature. Donham (1927, 1929), who is one of the earliest pioneers of CSR, emphasizes the responsibilities of businesses towards the communities in which they operate in what he referred to as "the art of living together" (Donham, 1929, p. 385). Later scholars such as Barnard (1938) and Kreps (1940) also highlight the obligations of businesses towards society. Bowen (1953) has been a touchstone in defining corporate responsibilities, which he defines as "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action, which are desirable in terms of the objectives and values of our society" (Bowen, 1953, p. 6).

It is worth mentioning that the first debate about the scope of corporate responsibility started with Levitt's *Havard Business Review* article 'The Dangers of Social Responsibility', in which he emphasizes that "(a) government's job is not business, and business's job is not government" (Levitt, 1958, p. 47). Levitt's economic viewpoint, which is centered around the profit maximization of firms was also adopted by Milton Friedman who argued that the main role of businesses is to generate profits for stockholders (Friedman, 1970).

Additionally, the 1960s and 1970s witnessed counter debates between scholars on the scope and scale of corporate responsibilities. Friedman's neoclassical viewpoint has been refuted by socio-economists, who adopted Archie Carrol's CSR pyramid as a starting point to define the economic, legal, social, and discretionary responsibilities of businesses. The literature in the 1980s centered around the power dynamics between diverse stakeholders of the organizations. The 1990s took a broader dimension after the Brundtland Commission's definition of sustainability, where corporations attempted to achieve a competitive advantage via environmental stewardship. The literature on balancing the economic, environmental, and social aspects of corporate responsibility also appeared in the 1990s (Elkington, 1998).

In the 21st century, corporate agendas were profoundly influenced by sustainable development. This was evident when the WBCSD emphasized: "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large" (WBCSD, 2017). Since 2015, organizations have drafted their sustainability agendas around achieving the SDGs, which are seventeen goals that shape the United Nation's view of sustainability until 2030.

In the financial industry, early CSR approaches mainly addressed internal environmental

and social issues, such as energy use, philanthropic donations, and employee satisfaction (Bouma, Jeucken, & Klinkers, 1999). The main motivations have been to avoid costs, to attract talent, to be a role model for clients, and to increase reputation. Later, the industry has been criticized for not reporting on their financed impacts, such as financed emissions (Collins, 2012) and for not disclosing the exposure of their financial portfolios to social and environmental risks. As stated above, recent approaches try to close this gap and propose the disclosure of climate-related risks on the financial stability of the industry (Task Force on Climate-related Financial Disclosures, 2018). The Chinese banking regulator made green finance reporting even mandatory, because of the introduction of the green credit policy that should increase the amount of green finance and decrease financing industries with high negative environmental impact (Cui, Geobey, Weber, & Lin, 2018).

5.3 Corporate Responsibility and Sustainability Reporting

Sustainability accounting and reporting have a long history as an approach to help managers improve corporate sustainability and responsibility. In the 1920s financial, cost, and managerial accounting domains were dominating the business discourse. Subsequently, environmental accounting emerged in this milieu consequent to the Brundtland Commission's agenda, which proposed "long-term environmental strategies that can achieve effective 'sustainable development' to the year 2000 and beyond" (Brundtland, 1987). As a result, accountants started reporting to management and external stakeholders on firms' environmental performance and impacts (Schaltegger & Burritt, 2000; KPMG, 2011).

However, environmental scholars have been cynical about the foundations of environmental accounting since the primary focus is profit generation rather than addressing ecological and social challenges (Gray & Bebbington, 2000). There are technical issues within

corporate environmental accounting, which result from the complexity of our socio-ecological systems, which cannot be commodified in monetary terms using the existing conventional financial accounting tools. These limitations are evident in cases where ecological damage cannot be reversed (Milne, 1996) or when natural resources have a sacred value to local communities (MacDonald, 2010). Furthermore, the impacts on the environment or society might be indirect. This is the case in the financial sector that does not have high direct environmental impacts but channels funds into industries that might have negative impacts (Weber, 2014). These indirect effects, however, are not easy to disclose.

As a response to the limitations of environmental accounting, the TBL accounting was introduced in 1994 by the British scholar John Elkington. The TBL shifted corporate reporting, which was dominated by the financial 'bottom line,' to encompass social and environmental performance evaluation (Elkington, 1998, 1999). However, the TBL framework remains a voluntary and non-mandatory practice for corporates that usually suffer from an unbalanced proration between the three domains (Schaltegger & Burritt, 2000). Gray and Milne (2002) argue that TBL is an ineffective reporting framework that has been dominated by economic measures where environmental and social sections were only considered as add-ons to economic reporting. Also, TBL has been rather developed as a concept and not as an accounting tool though is has been used this way very frequently.

Additionally, Hockerts (1999) sheds light on the limitations of the triple bottom line accounting and introduces the six principles of corporate sustainability, which managers should satisfy, namely: sufficiency, ecological equity, eco-efficiency, eco-effectiveness, socio-sufficiency, and socio-effectiveness. The six criteria were further developed by Schaltegger, Bennet, and Burritt (2006) into the Sustainability Triangle (see Figure 1). The authors emphasize

the importance of accounting for ecosystems and societies where decision-makers should balance and manage efficiency and effectiveness. Gray (2001, 2006) highlights that sustainability reporting has been treating the three pillars (economic, social, and environmental) in isolation whereas integration is needed to provide relevant and reliable information regarding corporate sustainability.

Figure 6: Sustainability Triangle (Schaltegger, Bennet, and Burritt, 2006, p. 305)

The interrelation between the three domains as interacting systems should provide reliable and material information regarding sustainability performance as well as the risk associated with corporate activities. Owen and O'Dwyer (2008) are sceptical about contemporary sustainability reporting frameworks, which lack a robust integration and financial materiality, which is core to setting corporate strategies.

Further, annual sustainability reporting represents a tool to communicate an institution's

performance to its stakeholders (Ziek, 2009). Burritt and Schaltegger (2010, p. 833) argue that the systemization of reporting frameworks is “the first step in a methodological development process towards sustainability accounting providing useful and high-quality information.” There are several reasons, internally and externally, that could motivate decision-makers to adopt sustainability reporting. Managers use the reports to leverage financial and non-financial performance. In essence, reporting should enhance the decision-making processes through benchmarking corporate performance on other organizations and sectors (Rikhardsson et al., 2005). Self-regulated reporting should help a company achieve sustainability stewardship, which can save firms time and cost in case mandatory government regulations are put in place (Gunningham et al., 1998). Sustainability reporting should also help a company achieve operational efficiency through cost reduction or increased sales that result from enhanced corporate reputation (Schaltegger and Wagner, 2006). Finally, effective reporting should help external stakeholders and investors understand a firm’s vision, mission, and performance levels which should enhance a firm’s goodwill (Global Reporting Initiative, 2017).

All these criteria also apply to the financial industry. The problem, however, is that most of the environmental and social risk do not have a direct effect on the industry. Instead, they influence the industry through their clients. One example is the insurance industry that might be affected by extremer weather events caused by climate change having an impact on the properties of insured homes (Thistlethwaite & Wood, 2018). Another example is investment portfolios that might be affected by stranded assets (Hunt & Weber, 2018).

5.4 An Overview of Reporting Frameworks

Analyzing the historical review of corporate sustainability reporting triggers one question:

why have various sustainability conceptualizations failed to enhance the relationship between corporations and societies? Answering this question requires a lucid evaluation of the existing reporting frameworks in order to highlight the existing reporting gaps and explore a set of conditions that should help organizations and financial institutions to act in a socially responsible corporate behaviour.

After the scandals of the 1990s, for example, Enron Corporation, several institutions have been utilizing their annual reports to gain their corporate legitimacy and stakeholders' trust. Corporations have had several attempts to offer tools, which should assist organisations to develop their sustainability policies and reporting frameworks. Some frameworks have an integrated sustainability scope for all economic, social, and environmental performance. Others have a particular focus on certain sectors or specific sustainability challenges such as climate change, greenhouse gas emissions, or water management issues. These tools and frameworks have evolved into internationally-accepted sustainability reporting frameworks, many of which have harmonisations and synergies. However, CSR reporting often does not reflect all environmental and social issues connected with businesses. Volkswagen has been rated as a sustainable business leader and at the same time has caused the diesel emissions scandal. Just recently, Deutsche Bank has been accused of money laundering yet the bank often shows up as a sustainability leader in the financial industry. The list of these controversial activities of seemingly sustainability leaders is long (Weber & Feltmate, 2016). Therefore, we will provide a brief review of key sustainability reporting frameworks that have been used by corporations and financial institutions in the last decade.

International Organization for Standardization (ISO)

The quality standard certification is issued by the (ISO), namely the ISO 9000, to measures

corporate quality performance. Other ISO certifications have been focusing more on environmental issues such as ISO 14001, which measures firms' interaction with ecological resources, ISO 14063 for Environmental Communications, and ISO 26000, which guides firms' social responsibility. ISO 26000 can be implemented by all types of firms and institutions regardless of their size or activity. ISO 26000 focuses on seven-course core areas, where institutions report on their sustainability performance to concerned stakeholders: 1) corporate governance, 2) human rights, 3) labour issues, 4) environmental performance, 5) operational practices, 6) consumer issues, 7) community development and stakeholder engagement. The ISO standards have been widely adopted by corporations in different sectors as a positive response to internal and external stakeholders, who advocate for eco-efficient operational strategies (Clapp, 1998). Some banks, such as Credit Suisse have also adopted ISO 14000 because they have been classified as suppliers for some firms that use their financial services. In general, however, IS 14000 and ISO 26000 is not very widespread in the financial industry (Weber & Feltmate, 2016).

AccountAbility 1000 (AA1000)

The AccountAbility Principles for Sustainable Development were published in 1999 (http://www.accountability.org). They are renowned guidelines for enhancing corporate sustainability performance and stakeholder engagement in corporate governance. The AccountAbility Principles are renowned guidelines for enhancing corporate sustainability performance and stakeholder engagement in corporate governance that aim to ensure the inclusivity, materiality, and responsiveness of reports (AccountAbility, 2011). In the banking sector. UBS, HSBC, and RBS use the standard.

Sustainability Performance and the Sustainable Development Goals (SDGs)

The WBCSD made several attempts to create reporting platforms that scale up business performance towards achieving the United Nation's SDGs (WBCSD, 2017). Shaping corporate performance and reporting around the 17 goals can help provide robust guidelines for decision-makers to contribute positively towards society and the environment. Unlike MDGs, which were mainly state-centred, the 2015 SDGs shape a transformative shift in government and private sector cooperation. Warhurst (2001) argues that CSR agendas should be governed through "tri-sector partnerships" between governments, private sectors, and civil society, where sustainability indicators should incorporate the UN development goals as an effective way to engage stakeholder. Nonetheless, the integration of the three pillars has remained a challenge, despite the WBCSD introduced free "SDGcompass" for businesses. The compass is a guideline available free on WBCSD's website to help companies to understand the SDGs, align the firm's goals and operations with the 17 goals, and assure the integration of corporate sustainability into corporate governance (SDG Compass, 2017). According to (United Nations Global Compact & KPMG International, 2015) banks should report about financial inclusion, financing renewable energy and sustainable infrastructure, including sustainability risk analyses into financial decision making, and influencing corporate clients to address environmental, social and governance criteria in their businesses to demonstrate how they address the SDGs.

Carbon Disclosure Project (CDP)

CDP represents a global disclosure system, which enables organizations, corporations, and cities to measure and manage their environmental performance, opportunities, strategies, and risks. CDP reporting framework focuses on three main aspects namely, greenhouse gas emissions,

forests and climate change risks, and water strategies. With over 6000 organizations and over 100 states and 550 cities use the CDP platform to report their impacts on the environment and natural resources. This growth in sustainability reporting reflects the interest of investors as well as other stakeholders to assess and measure their organizations' sustainability performance in order to deploy programs that respond to contemporary environmental risks and opportunities. With 24 percent of all CDP reporters, the financial industry is rather strong. However, a CDP report found that the financial industry performs mediocre with regard to climate disclosure and even low with regard to corporate climate governance. Finally, only 6 percent of the reporting financial institutions disclose emissions caused through investments (PwC and Carbon Disclosure Project, 2013).

Sustainable Stock Exchanges Initiative (SSE)

The SSE initiative is a collaborative peer to peer platform, which explores how exchanges can enhance corporate transparency. The SSE initiative provides investors, regulators, and corporations a peer to peer platform that allows them to share best ESG practices thus enhancing corporate transparency and performance. The first meeting of the SSE was conducted in New York City in 2009 and was opened by the United Nations Secretary-General Ban Ki-Moon. The SSE is organized and supervised by the UN Global Compact, the UN Conference on Trade and Development (UNCTAD), Principles for Responsible Investment (PRI), and The SSE is organized by the UN Environment Programme Finance Initiative (UNEP FI). The first five SSE partner exchanges namely Johannesburg Stock Exchange, Nasdaq, Borsa Istanbul, the Egyptian Exchange, and Brasil (BM&FBOVESPA)s, are providing listed corporations, in developed and developing countries, with guidance on sustainability reporting. Since September 2015, all SSE partners have been requesting all listed companies to disclose not only their financial reports but

also material ESG reports.

The Greenhouse Gas Protocol (GHG Protocol)

With a special focus on greenhouse gas emissions, GHG Protocol has been the most widely accepted framework for governments and business to understand, measure, and report their GHG emissions. The GHG Protocol was a result of a partnership between the WBCSD and the World Resources Institute (WRI), which all aim at building effective programs to address climate change. It provides an accounting platform for GHG inventories for governments, businesses, and environmental groups thus helping decision-makers in such institutions to address climate change issues. In response to global marketplace demands for sustainable products, many developing countries are utilizing the GHG protocol as an internationally accepted tool to measure and disclose information regarding their climate change issues and strategies.

Principles for Responsible Investment (PRI)

The PRI is an international network of responsible investors, who work together to put the United Nations-supported six Principles for Responsible Investment into practice. The Principles are listed on their website as follows:

- “Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.
- Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices.
- Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.

- Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.
- Principle 5: We will work together to enhance our effectiveness in implementing the Principles.
- Principle 6: We will each report on our activities and progress towards implementing the Principles."

The PRI reflect an increase in the awareness of responsible investors, who understand that incorporating ESG principles into their investment activities is aligning with their fiduciary responsibilities. In essence, the PRI should help them meet economic targets while achieving broader interests of environmental and social stakeholders. Finally, they lower barriers for the financial industry to engage in sustainable finance by offering guidelines including reporting guidelines (Gond & Piani, 2013).

International Integrated Reporting Council (IIRC)

IIRC is a coalition of NGOs, regulators, and companies that aim at establishing integrating reporting framework across the global business. In 2014, the IIRC started the international Integrated Reporting Framework, which aims at providing material information for long-term investors. IIRC represent a shift from a TBL approach toward more integrated sustainability reporting. TBL shifted corporate reporting, which was dominant by the financial 'bottom line,' to encompass social and environmental performance evaluation (Elkington, 1998, 1999). However, the TBL framework remains a voluntary and non-mandatory practice for corporates that usually suffer from an unbalanced proration between the three domains (Schaltegger & Burritt, 2000). The TBL is highly associated with conventional accounting, and the economic tools are ineffective in commodifying environmental and social fields.

The Sustainability Accounting Standards Board (SASB)

SASB is a US-based institution incorporated in July 2011 that aims at establishing industry-based sustainability standards, which helps corporations and organizations traded on the U.S. exchanges to measure and disclose their environmental, social, and governance impacts. SASB represents a shift in reporting towards integrated material information, which is needed by multiple stakeholders especially regulators and investors, who face pressures to address ESG issues. Recently, stakeholders have been acknowledging that ESG factors influence an organization's performance in the long term as a result of its ability to manage risks and opportunities. As such, investors and management use ESG report to have a robust overview of organization performance and accordingly evaluate its long-term value. SASB provides a transformational tool, where investors and managers can enhance disclosing effectiveness by participating in the development of reporting standards and expecting organizations to disclose material information on ESG factors. For the financial sector, SASB proposes several indicators for being disclosed, such as the integrations of ESG criteria in financial decision making and financial inclusion (Sustainability Accounting Standards Board, 2014).

The Global Reporting Initiative (GRI)

The GRI is an independent international organization that has had extensive efforts since 1997 to institutionalize sustainability reporting. GRI aims at helping businesses, governments, and institutions understand and communicate their impacts on global sustainability issues (Global Reporting Initiative, 2017). Although SASB and IIRC provide better integrated and material reporting frameworks, the GRI initiative has been more successful in transforming niche individual corporate efforts in CSR reporting into a more standardized global trend. In essence, GRI has been

adopted by the majority of global market-leading companies for CSR reporting and continuous to be replicated across different sectors (Fifka, 2012). The GRI has been the most accepted and adopted reporting guidelines by global corporations in the last ten years. In 2011, KPMG surveyed the world's largest 250 corporations. The survey's result shows that 95 percent of participating companies provide annual reports on their sustainability performance, of which 80 percent of them follow the GRI guidelines (KPMG, 2011).

Judge and Douglas (1998) show that the GRI guidelines provide a useful tool to report and analyze financial and non-financial measures for corporate performance. Also, Weber et al. (2008) highlight some benefits of using the GRI as a reporting framework since it provides quantifiable indicators that are usable by decision-makers. GRI guidelines have evolved towards a more standardized format, which aims at integrating the four pillars of reporting, namely: economic, social, environmental and governance (Kolk, 2004, 2008). However, some scholars have argued that GRI standards lack the needed integration between sustainability pillars as well as materiality. These limitations stem from existing deficiencies in sustainability accounting, particularly forward-looking techniques that could help monetarize risks and socio-ecological variables. (Gray, 2001, 2006). Also, the early versions of GRI guidelines lacked a standardized format, where corporations manipulate the selection of indicators to serve their greenwashing tactics (Adams & Evans, 2004; MacLean & Rebernak, 2007).

In addition to general reporting guidelines, GRI publishes sector guidelines. The Sustainability Reporting Guidelines & Financial Services Sector Supplement (The Global Reporting Initiative, 2011) contains indicators that are tailor-made for the financial industry, such as financial products and services that include sustainability aspects, and interaction with clients with respect to environmental and social risks and opportunities.

Task Force on Climate-related Financial Disclosures (TCFD)

Established in 2015 in response to G20's request to provide better reporting on the financial implications of climate change. The Financial Stability Board, the international body that monitors the global financial system, selected TCFD members from various organizations including large banks, large non-financial companies, credit rating agencies, and consulting firms. The Task Force acknowledges the reporting problem and the need for standardized reporting in all industries to enable the financial industry to assess climate change-related risks. TCFD sheds light on how existing reporting standards focus on climate-related information such as GHG emissions. However, current disclosures lack information on the financial implications of those climate-related aspects. Consequently, TCFD recommends that climate-related disclosure should (1) represent relevant information, (2) be specific and complete; (3) clear, balanced, and understandable; (4) be consistent over time; (5) be comparable among companies within a sector, industry, or portfolio; (6) be reliable, verifiable, and objective; and (7) be provided on a timely basis.

As a result of deploying the TCFD, financial executives should recognize improvement on disclosure quality, especially disclosures covering the financial impact of climate-related risks on an organization (TCFD, 2017). This will be useful for the financial sector to evaluate existing and potential risks posed by climate change as well as channels for hedging the risk. Similar to SASB, but focusing on climate-related issues, the TCFD published a list with industry-specific key performance indicators that help the financial industry to identify climate-related risks for their lending and investment portfolio. Furthermore, TCFD recommends the development of climate-related scenarios to enable the financial industry to manage climate-related risks that might influence the industry's stability (Task Force on Climate-related Financial Disclosures, 2017b).

Finally, TCFD has developed implementation guidelines to implement the proposed indicators (Task Force on Climate-related Financial Disclosures, 2017a).

5.5 The Financial Sector and Sustainability

Building on the TCFD, it is worth mentioning that financial institutions play an important role in leading sustainable development. Weber (2014) analyzes this relationship in four aspects. First, the financial sector has control over access to funds, which have a direct impact through investment in certain sectors or an indirect one through their lending activities. Second, stakeholders of financial institutions can influence, through their pressures, the reputational risks of financial institutions. Third, with the advent of global warming risks, for example, floods and hurricanes in many areas in North America, financial institutions started to respond to sustainability risks by incorporating shadow prices. Fourth, the financial sector has a real challenge in technically testing the relationship between finance and the impact on the economy, society, and the environment. However, while banks have annual reports on their non-core business activities such as programs that enhance employee welfare and philanthropic activities, there has been minimal reporting on the short and short-term sustainability impact of their finances (Weber & Feltmate, 2016). Banks and financial institutions should report on the allocation of their portfolios. Such reports not only will enable investors and depositors to allocate their funds towards sustainability but also proactively develop systems for future transparency regulations.

Further, sustainable development requires substantial investments in the fields of renewable energy, environmentally friendly infrastructure, and green technologies. While Governments and public-sector institutions can provide financing for green investments, financial institutions could remove any bureaucratic obstacles to accessing required investment funds. Therefore, financial institutions should be more proactive in responding to green investment

opportunities that could drive economic growth. Such Green investments require close collaboration between financial intuitions' managers and policymakers to ensure the effective development of sustainability policies as well as the optimization of available funds allocation. Sustainability scholars and practitioners argue that financial institutions are the most powerful stakeholder in driving environmental change. However, this influential role has been criticized or ignored by other stakeholders such as regulators, financial managers, and policymakers.

Financial institutions could see green investments as an opportunity to improve the quality of their operations. For example, improving risk management techniques by including environmental risks in the decision-making process. In essence, risks are incorporated into loans assessments as an environmental liability. Such techniques also should improve the quality of investment advice offered to their clients. Banks have been involved in environmentally responsible investments since the United Nations Environment Programme (UNEP) statement on Banks and Sustainable Development, which recognizes the role of the financial institutions in "making our economy and lifestyles sustainable" (UN Environment, 2017). Since then, many banks have developed their environmentally responsible investment portfolios such as green stocks, green bonds, and green money market accounts. These portfolios finance projects aim at the conservation of natural resources and the implementation of environmentally responsible business practices. Such investments, however, have remained minor when compared to other conventional banking portfolios.

One of the challenges that face sustainable banking is that customers do not perceive significant differences among financial institutions and the available banking services (Piñeiro et al., 2009). Such perception about financial institutions has increased by after the dramatic financial scandals of the late 1990s as well as the 2008 financial crisis, which led to a decline in clients'

confidence in the financial system and banking institutions. Many regulators and policymakers were concerned about restoring confidence in the financial system. As a result, there has been an increase in the awareness and social conscience of shareholders, regulators and other stakeholders, who advocate for sustainable business operations. Internal and external stakeholders have been asking for mandatory reporting on the economic, social, and environmental impacts of their institutions' operations, which has been provided and covered through annual CSR reports.

5.5.1 Sustainability Reporting in the Financial Sector

Since the economic crisis in 2008, the banking industry has been adopting principles in order to ensure that banks' business operations not only respond to economic goals but also address other environmental and social issues. One of the conventional roles of financial institutions is to serve as an intermediary that channels savings into investments. Such role incorporates the efficient allocation of resources through managing risks in a responsible manner that protect the legitimate interests of investors and other stakeholders. Responsible financial institutions should acknowledge not only the direct environmental impacts of their operations but also the indirect impacts, which result from their lending activities.

Figure 7 shows the main areas area of CSR in the banking sector, which can vary from strategic core banking activities to peripheral philanthropic activities:

CSR Activity

Core business Activities	• Responsible financial investment • Effective Risk Management techniques • Transparency in business operations and financial services	• Providing financial support to needed green investments • Developing monitoring techniques that help transparent reporting to concerned stakeholders • Engaging stakeholders in the decision-making process of CSR agendas.
Non-business Activities	• Volunteer activities to improve the environment • Developing and supporting local communities • Supporting opportunities	• Creating job opportunities with decent working conditions • Selecting good environmental practices when it comes to waste management and office layout

Banking Activity

Figure 7: CSR in the banking sector

Source: adapted from Lenter, Szegedi, & Tibor (2015).

Financial institutions need to explore ways to shift to core sustainability-related domains that not just incorporate ethical banking systems and traditional philanthropic activities. In essence, banks need to communicate the responsibility to all stakeholders, who should share the costs and risks of engaging in green investments. Conventional banking can transform into more ethical banking approaches when transforming their funds towards green investments. As a result, having robust reporting frameworks is essential for effective communication of ESG performance to diverse stakeholders as well as disclosing material climate-related financial disclosures.

5.5.2 Sustainability Reporting Challenges in the Banking Industry

Over the past decade, sustainability reporting has witnessed huge leaps in general and in the financial industry. On the one hand, there has been an increase in transparency, improvements within standards and reporting frameworks, and better engagement for stakeholders within the decision-making process. On the other hand, sustainability scholars have been cynical about the validity, reliability, and materiality of sustainability reporting frameworks (see Kolk, 2004). The dynamic changes in our complex socio-economic systems mandate continuous development of reporting standards. As a result, close collaboration between sustainability stakeholders is needed in order to identify new risks and opportunities and set the required amendments in reporting standards annually. In the last decade, sustainability reporting has faced three main challenges namely: 1) limited understanding of the scope of corporate responsibility, 2) the existence of multiple reporting frameworks and target audience, and 3) the confusion of reporting cycles given the lack of mandatory reporting. These limitations are also valid for financial industry sustainability reporting.

1) Limited understanding of the scope of responsibility

Decision-makers and corporate stakeholders should not treat sustainability reports as a tool for extracting short-term values but as a strategic process that defines the future of the ecosystems in which they exist. Corporations develop their reports from an “outside-in” approach to communicating the corporate efforts to solve social issues. Corporations prioritize their agendas and activities based on the ranking schemes of sustainability institutions, for example, the Dow Jones Sustainability Index and the European Sustainability Reporting Awards scheme to green market their activities (Daub & Karlsson, 2006). Managers should develop their sustainability

agendas from as “inside-out” approach, where firms define their sustainability weaknesses and develop a strategy to reduce their operational externalities and enhance their socio-ecological impacts. Therefore, corporations are required to design “internal information and reporting systems” that measure and report “Key Performance Indicators” that are cascaded from a corporate strategy across each function (Schaltegger & Burritt 2000).

Three main variables distinguish Strategic CSR from other literature in the field, namely the scope of operations, time-span, and stakeholders’ scale. Managers should develop and implement their sustainability agendas. Agendas via a strategic planning process that cascades corporate-level to functional and operational-level strategies. Accordingly, responsibility becomes ‘core’ across all of a firm’s operations and not merely a ‘function,’ such as marketing or public relations (Hawkins, 2006). For example, in a production firm, strategic CSR starts with choosing responsible suppliers, who can procure eco-friendly raw materials to assure an eco-efficient production process. Also, engaging customers as strategic stakeholders who are impacted by the environmental footprint resulting from production and consumption. The final and most significant variable of strategic CSR is the transition from a short-term to a long-term temporal outlook, which is the core of Brundtland’s definition of sustainability (Gibson, 2006).

Chief Executive Officers’ focus should shift from quarterly economic performance to long-term investments with an outlook that exceeds three years. The longer the time, the less the trade-off between financial gains and corporate sustainability, which is an investment that realizes its rewards over the long haul. Essentially, responsibilities, costs, and risks should be shared and communicated via effective dialogues among all stakeholders. Therefore, strategic CSR provides a better framework for a firm to retain its societal legitimacy and corporate sustainability through a process that maximizes a firm’s growth, adapts to market dynamics, and considers a broader

array of strategic stakeholders (Searcy, 2009).

In the financial industry, the scope of responsibility is harder to define than in other industries. A good example of this is the direct and indirect effects of the financial industry on climate change. As mentioned above, previous approaches to financial industry reporting focused on the direct impacts of using energy, materials, water, and other environmental resources and on the direct impacts on job satisfaction of industry employees (Jeucken, 2001). Later, some non-governmental organizations (NGOs) criticized banks for not addressing the impact of their products on services on GHG emissions. They claimed that banks ignore their financed emissions, i.e. GHG emissions of commercial borrowers (Collins, 2012). Though banks neglected their responsibility for their clients' impacts, they started to disclose environmental and social impacts of their products and services (Weber & Feltmate, 2016). Most of the reporting, however, addresses positive impacts green and social finance products and services while negative impacts, for instance through fossil fuel financing are not disclosed. This missing piece in reporting is one of the reasons that banks have problems assessing climate-related risks for their portfolios that are mainly caused by their clients. Because the banks neglected to take responsibility for their clients' emissions, they were not able to assess the climate risk exposure of their portfolios.

Another reason for this lack of disclosure is the allocation of responsibility. The question remains, whether a financier is responsible for impacts of their finance. Furthermore, if a limited responsibility is accepted, it is hard to allocate the responsibility to different parties involved to avoid double counting. To allocate the responsibility for the GHG emissions for a fossil fuel operation, for instance, all stakeholders have to be considered. A bank might provide the fossil fuel company with finance. This company operates, for instance, an oil sand mine and emits GHG. A refinery refines the bitumen and emits. Finally, clients purchase the end-product and emit GHG.

Hence, to allocate all the responsibility to one of the parties would not be suitable.

2) Multiple Reporting Frameworks and Target Audience

The standardization of reporting frameworks plays an essential role in increasing the quality of decision making for managers, investors, and other stakeholders. However, unlike financial reports, where investors are the sole audience, sustainability reporting has multiple audience and stakeholders, each of which has various expectations of what the company should report. In essence, each group has its definition of the "right" disclosure in order to take the "right" decisions. Take for example the term "materiality", which according to the U.S Supreme Court is defined as "a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available." However, beyond investors, the term "materiality" has been incorrectly used by other sustainability stakeholders, where they used it to refer to prioritization or relevance of sustainability issues (SASB, 2017).

Christian Herzig and Stefan Schaltegger (2006, p. 309) define a guideline as "a non-binding guidance document based on practical experiences." On the other hand, regulations are usually enforced by governing institutions to ensure the systemization of reporting. Moving from voluntary guidelines to standardized frameworks is the first step towards quality and meaningful reports. However, each of the current reporting frameworks has its own rationale and audience, which makes it confusing and sometimes conflicting for reporters to choose from the different reporting frameworks. Some scholars argue that having multiple reporting frameworks can be considered a "race to the top" in terms of reporting standards (Green, 2013). This was evident in the collaboration between the GRI and CDP after the Paris agreement in 2015. The GRI in 2017

used the CDP's questionnaire to enhance their reporting on climate, water, and forests (GRI & CDP, 2017). However, this proliferation complicates the sustainability reporting practices given the varying definitions, priorities, and indicators.

Significant collaboration between the GRI board and SASB, after the concerns of multiple corporations about the negative implications of competition between the two entities. In April 2017, the Ceres Conference was held in San Francisco and included renowned sustainability non-profit organizations. During the meeting, Tim Mohin, Chief Executive of GRI, and Jean Rogers, Chief Executive Officer of SASB refuted the rivalry between GRI and SASB (Mohin & Rogers, 2017). There has been an extensive collaboration between the two reporting entities on enhancing the quality of integrated reporting (Sustainability Accounting Standards Board, 2017). Nonetheless, judging the materiality of environmental impacts has remained a controversial area of dispute, which can lead to reporting frustration to organizations, who struggle to satisfy the demands of their stakeholders (Christianto, 2018).

The confusion about different reporting framework has also been one of the reasons that TCFD proposed standardized climate-related indicators to disclose risks and opportunities. The problem, however, is that there will be one more standard that will be used. Given that GRI and CDP already provide climate-related indicators, the question remains whether an additional standard will be helpful. The problem might rather be that the banking industry lacks a consistent strategy to address climate-related financial risks. Even if all clients report their climate-related risks in a transparent and standardized way, the banking industry has to develop strategies, tactics, and operations to manage these risks. Disclosure is just the first step to fulfil this task.

3) The confusion of reporting cycles

The multitude of stakeholders' demand on sustainability reports, especially with increased expectations on the significance, credibility, and materiality of disclosed data, can negatively impact the quality of reports. To elaborate, reporting teams within institutions, due to time and data limitations, could disclose information based on a tactical and reactive approach rather than a strategic one that aims at tackling real sustainability issues. The time spent responding to different stakeholders sometimes limits the reporter's capacity to deploy strategies that could enhance corporate sustainability. Sustainability reports are larger in scope than financial reports since they incorporate not only the economic results of an organization but also environmental, social, and governance issues of institutions (Gray, 2006).

Unlike mandatory financial reporting, which has fixed reporting cycles, voluntarily sustainability reporting has remained subjective to the reporter's motivation in deciding the timing to disclose ESG information. Setting standardized reporting cycles should increase the quality of reports by setting benchmarks for performance measurement and development. The standardization of reporting would help achieve better transparency and accountability. Achieving more robust and reliable strategic reporting frameworks requires continuous collaboration among states, private sectors, and local community members. Scholars argue that managing sustainability agendas should incorporate a tripartite of government, private sector, and civil society. This tripartite is essential for balancing the power among stakeholders and for ensuring a democratic implementation of pre-agreed upon agendas in order to avoid any potential trade-offs (Mintzberg, 2013). The three entities should work for real change that works for enhancing the resilience of the decision-making process, modularity in the targeted outcomes, and more flexibility to meet market dynamics (Waddock & Bodwell, 2007).

Though voluntary sustainability reporting has had a tumultuous legacy, it is being featured more prominently with integrated reporting standards and governmental regulations being adopted in South Africa, replicated in France, and currently being negotiated in other countries. Before discussing the recommendations for enhancing the future of sustainability reporting, one should highlight the progress that has happened in corporate sustainability discourse and practices since the introduction of the SDGs.

Hence, also banks started to connect sustainability risks and financial risks in their reporting, yet transparent and standardized reporting is still rare. Even banks that follow a guideline, such as the Equator Principles reporting guideline do often not report the information necessary to evaluate environmentally and socially induced financial risks (Weber, 2016). Also, banks that report about the negative impacts of their financing are still exceptional cases. The Chinese Industrial Bank is one of these exceptions because the bank even reports about financing industries that are controversial with regard to their environment and data about meeting and missing the goals of transitioning to green finance in different sectors (China Industrial Bank, 2018).

5.6 Policy Recommendations

Based on the analyses above, we propose the following policies to improve sustainability reporting in the banking industry.

1. **Standardization of reporting frameworks**

The standardization and institutionalization of reporting require close collaboration between intergovernmental departments. Standardized reporting should focus on key performance indicators that allow stakeholders to analyze risks and opportunities arising from the sustainability performance of a financial sector institution.

We recommend acknowledging the direct and indirect impacts of the financial sector and

to develop standard indicators for both impacts. Having a sustainability agenda that is negotiated and implemented from an effective stakeholder approach is the first step to reduce future trade-offs. Standardized indicators also help stakeholder to plan strategically for future changes given the dynamic markets and risks. We also suggest that the financial sector can lead the standardization of reporting since banks have a high level of transparency given their nature of operations, where they can start recognizing their "green clients" in a way that works for changing environmental and social behaviour and performance across multiple sectors. However, though TCFD strives for standardized reporting there is the risk of creating another standard in addition to all those that already exist. Also, GRI, CDP, and SASB provide standardized indicators the banking industry can use. In addition, the Equator Principles, PRI, and UNEPFI provide reporting guidelines. Therefore, TCFD should develop concepts that enable banks to use the already existing standards to assess financial risks induced by environmental and societal risks.

2. **Continue using the SDGs as a framework to implement and report on strategic CSR.**

Corporations are facing pressure from responsible stakeholders to move towards green investments that have higher risk yet the balance between achieving economic gains and creating positive social and environmental returns (Weber & Feltmate, 2016). Governing Sustainability agendas is a key competitive advantage for corporations as well as financial institutions. Financial institutions should have better results that stem from enhanced risk management techniques (Weber, 2014). Additionally, shaping CSR agendas to meeting the SDGs should serve as a transformational tool towards sustainable economies for corporations in different sectors as well as the financial sector. Because of the need for finance to achieve the SDGs (Weber, 2018), the banking industry might play a major role in SDG related reporting.

3. **Developing annual impact reports that show the negative and positive repercussions of investment portfolios**

Banks and other financial institutions have started to implement sustainable operations internally that varies from energy conservation practices in branches and offices as well as recycling programs to reduce their operational footprints. The financial sector can lead the investment in low carbon portfolios and green energy, which is evident in cases where banks offer mutual funds that invest in "green" companies. Also, several financial institutions have adopted the Equator Principles, which are a set of internationally accepted guidelines to manage environmental and social risks in project financing. Within the sustainable lending operations domain, banks have been working collaboratively with clients to minimize their environmental footprints. The financial sector is a key enabler in the field of sustainability because it serves several industries and sectors such as insurance, asset management, and retail. Each of these sectors and its subsectors plays an important role in shaping the global economy. Having annual impact reports will set benchmarks, which should improve the performance of financial institutions and guide investors on the ecological footprint of their investments.

4. **Defining materiality of sustainability risks and opportunities in the banking industry**

Currently, materiality is often defined as direct, mostly negative impacts of sustainability, environmental, social, and climate-related risks. This is a rather narrow definition that has some risks particularly for the financial industry with its mainly indirect connections to the environment, society, and sustainable development. Based on Carney (2015) who mentioned transition risks as a major risk for the financial industry, TCFD also addressed indirect risks, such as reputation risks, litigation risks, and transition risks for the financial industry. This addresses a topic that has been

neglected by the industry for a long time. Though it is obvious that most financial risks and opportunities in the banking industry come from their clients, the sustainability performance of borrowers and investees and the impact on investment and lending portfolios have not been reported. Therefore, we recommend a standard to report about environmental, social, and climate-related risks and opportunities that bank portfolios are exposed to. Therefore, a standard to report about environmental, social, and climate-related risks and opportunities that bank portfolios are exposed to is recommended.

MANUSCRIPT ENDS

Chapter 6

6 The Development of Green Finance by Sector: Specific needs and characteristics.

This chapter presents a description of green finance evolvement in three fields, international financial institutions and organizations, industrial companies, and the financial industries. We shed light on the role of financial institutions on global sustainability, which results from their direct economic impacts and higher indirect social and environmental consequences on their diverse stakeholders. We accentuate that green finance has become more popular across all sectors. We start the manuscript by providing a brief history of the evolvement and motivations behind green finance to highlight strengths, weaknesses, and gaps in the field. We emphasize that financial materiality has been the main driven for green finance, where social and environmental parameters have remained as add-ons to investment portfolios that lack the connection to the core business of most banks and industrial companies.

Further, we argue that reporting has served as a tool to paint positive corporate images to shareholders and other stakeholders. Current CSR reporting frameworks lack a strategic lens that can serve as a management tool, which can help decision-makers and sustainability leaders within organizations to understand the core business operations and competencies of their business so they can address their sustainability agendas from an 'inside-out' approach (see Porter and Kramer, 2011). Many of the current reporting frameworks still lack an integrated approach that not only focuses on a firm's financial materiality but also social and environmental implications of its core operations hence the three parameters of corporate sustainability are fully addressed.

Finally, we highlight the changes in CSR reporting landscape, where part of firms' responsibility is to report not only on the positive aspects of performance but also the negatively performing indicators in a way that can enhance a firm's transparency, accountability, and as a result corporate legitimacy.

This chapter is adapted from:

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MANUSCRIPT BEGINS

6.1 International financial institutions and organisations

This section will discuss multilateral development banks (MDB) as major international financial institutions and organisations, such as the World Bank or the Asian Development Bank. They have an important but also ambivalent role in green financing. On the one hand, they finance activities that have detrimental effects on the environment, such as coal power plants. On the other hand, they provide guidelines for green financing, and finance green projects and contribute to addressing climate change through green bonds and other green financial investments. Financing both, fossil fuel and green projects, however, might be inefficient. MDBs may finance projects that are harmful to the climate and then finance projects that help to mitigate these negative impacts. This is an inefficient use of financial capital with adverse effects on climate change and economic development.

As an example, the World Bank is a major financier of fossil fuel projects. In 2010, the World Bank invested US$ 4.4 billion of development assistance in fossil fuel projects in the developing world. But other MDPs such as EBRD and Asian Development Bank invest billions in fossil fuel projects, such as coal power plants, though some of them announced to stop financing coal (Kynge & Hook, 2018). However, between 2006 and 2011, the EBRD increased annual coal finance from $82 million to $359 million. Another example is financing the 4,000-megawatt Tata Mundra coal-fired power station in Gujarat, India, which received $450 million in financing from both the World Bank Group's International Finance Corporation (IFC) and the Asian Development Bank (ADB) (Ghio, 2015). Also, the Asian Development Bank has been a major funder of coal-fired power plants globally. Between 1994 and 2012, the institution was the third-largest public international financier of coal-fired power plants, investing $3.9 billion in 21 projects (Yang & Cui, 2012).

In addition, Yuan and Gallagher (2015) state that a third of all development bank finance in Latin America and the Caribbean is not green. This significant amount of finance flows into extractive industries, the generation of fossil fuels, and conventional infrastructure projects that can increase global climate change, cause local environmental problems, and adversely impact local communities and stakeholders. A part of these investment comes from Inter-American Development Bank that, on the other side, develops guidelines for managing environmental and social risks (Nolet, Vosmer, de Bruijn, & Braly-Cartillier, 2014) and is one of the leaders in green finance in the Americas.

Furthermore, MDBs are involved in project finance as members of project finance consortiums. Though, for instance, the IFC Performance Standards on Environment and Sustainability (International Finance Corporation, 2012a) are the basis for the Equator Principles for project finance, many projects are criticized for harmful effects on the local environment and climate change.

MDBs also play a major role in green finance. According to World Bank, climate financing by the world's six largest MDBs increased to $35.2 billion in 2017, up 28 per cent on the previous year (African Development Bank et al., 2018). The Asian Development Bank, for instance, analyses fossil fuel subsidies in Asian countries, such as Indonesia and Thailand, with regard to possible their adverse effects. Furthermore, the social and environmental assessment guidelines of World Bank and IFC set global environmental and social standards (International Finance Corporation, 2012b) and are also the basis for industry voluntary codes of conduct such as the Equator Principles for project finance.

Overall MDBs climate finance is a significant source of climate finance planned and needed in the future (Westphal, Canfin, Ballesteros, & Morgan, 2015). In 2015, after China

pledged to infuse $3.2 billion into a developing country fund for climate change, the Asian Development Bank, the World Bank and others began pledging major increases in climate finance as well. The World Bank pledged to increase climate finance to $29 billion (an increase by one third) by 2025 and the Inter-American Development Bank pledged to make climate finance 25-30 percent of total lending by that time (Yuan & Gallagher, 2015).

Among all financial institutions, the World Bank, which is the leading source of international development funding (Rosen, 2000), is best positioned to impose environmental and social responsibility on multilateral development banks and other international financial institutions and to provide environmental and social guidelines for all projects and other investments. This is also true for IFC that developed the IFC standards for environmental and social sustainability (International Finance Corporation, 2012a) as well as approaches for GHG accounting and assessment (Performance Standard 3). Furthermore, IFC developed the Cleaner Production Program for assessing opportunities to implement energy efficiency processes and to reduce GHG emissions in IFC's portfolio. Finally, a significant share of Green Bonds and Climate Bonds are issued by MDBs and they were among the first issuing green bonds and climate bonds at all. Hence, about 25 percent of green and climate bonds are issued by MDBs (Climate Bonds Initiative, 2018).

Given the significant market failures involved in shifting investment into sustainable infrastructure in the Caribbean and Latin America, and the fact that the region is in the midst of an economic downturn, development banks are essential to fill a $260 billion annual infrastructure gap and a $110 billion annual gap in financing for climate change (Yuan & Gallagher, 2015). MDB may play a significant role to achieve the Sustainable Development Goal 7 on infrastructure and SDG 9 on energy by investments into sustainable infrastructure and renewable energy. Also,

Bhattacharya, Oppenheim, and Stern (2015) argue that development banks can play an essential role help move nations and regions from ‘business as usual outcomes’, to ‘sustainable infrastructure outcomes.’

Finally, MDBs can help domestic financial institutions to integrate sustainability into their business by making financing dependent on the implementation of social and environmental sustainability guidelines for banks. IFC is already coordinating the development of financial sector sustainability regulations in some emerging countries and should continue to do so to support the sustainability case for the financial sector (Oyegunle & Weber, 2015).

6.1.1 Future steps for greening the MDBs

MDBs already play a significant role in climate and renewable energy finance that will probably increase in the future because of stronger demand for climate finance. MDB should take climate change issues and the green economy into consideration in all their financing decisions. They should avoid financing projects that are harmful to the climate on the one hand and invest in climate change mitigation and adaptation on the other hand. Instead, all project assessments should include environmental and social criteria. Financing cannot take place in silos anymore but has to integrate all economic, environmental, and social aspects into finance decisions.

In addition to influencing financial regulators, MDBs should continue to influence financial sector voluntary codes of conducts to enable them to have a stronger impact on the environmental and social performance of financed projects or other investments (Weber & Oni, 2015). The IFC Performance Standards on Environmental and Social Sustainability (International Finance Corporation, 2012b), for instance, are an example of how an MDB can influence the financial industry through standards and guidelines. However, there should be less focus on ‘doing no harm’ to ‘do good’. Most of the MDB guidelines so far focus on reducing negative social and

environmental impacts. More emphasis might be placed on financing activities with positive impacts on the environment, such as green technologies or green infrastructure. Sustainable finance means to take economic, social and environmental issues equally into account and to avoid trade-offs.

6.2 Industrial Companies

Since the economic crisis of 2008, an increasing number of companies and industrial institutions have been disclosing annual reports that describe their activities in addressing environmental issues. If one is to analyze the origins of the term “company”, one should refer to the Latin phrase “com panis”, which means “the sharing of bread” (Khodorkovsky, 2008), which reflects that corporations’ responsibility towards their stakeholders is not a new trend or concept in the business discourse. However, the definition and measurement criteria for this social and environmental responsibility continues to be a subject of debate among academic, businesses, and civil actors. This debate stems from the nature of these reports, which address diverse stakeholders and accordingly vary in the structure, information provided, and quality.

Corporations have realized that reporting on environmental and social issues can help achieve long-term profitability by developing a positive corporate image, which should satisfy stockholders interests. Voluntarily reporting can help organizations mitigate future risks and implement systems that proactively prepare for mandatory government regulations, which can be costly to businesses. As a result, firms can sustain the flexibility of decision making at their ends. In essence, self-regulated reporting should help a company achieve sustainability stewardship, which can save firms time and cost in case mandatory government regulations are put in place (Gunningham et al., 1998). Decision-makers use the reports to leverage financial and non-financial performance. Reporting should also enhance the decision-making processes through

benchmarking corporate performance on other organizations and sectors (Rikhardsson et al., 2005). Sustainability reporting should help a company achieve operational efficiency through cost reduction or increased sales that result from enhanced corporate reputation (Schaltegger and Wagner, 2006). Finally, effective reporting should help external stakeholders and investors understand a firm's vision, mission, and performance levels which should enhance a firm's goodwill (Global Reporting Initiative, 2017).

Reporting on environmental and social performance is a key component of CSR reporting, which is currently mandated by organizations' diverse stakeholders. Wood (1991) emphasizes the positive correlation between CSR reporting and corporate legitimacy (Melnyk et al., 2003) and reduces risks and costs (Weber et al., 2008). Kurucz et al. (2008) analyze social and environmental as a "business case," where CSR is an investment that should result in positive economic and social returns. However, the relationship between corporate social and environmental performance and corporate financial performance has been controversial given the inconsistent and variant relationship between the two variables (Orlitzky, 2008).

6.2.1 Evolvement of Environmental Reporting in Industrial Organizations

Environmental reporting has a long history as an approach to help managers enhance their corporate image and achieve corporate sustainability. Corporate reporting started in the 19th century in the form of conventional financial reporting, where institutions disclose their financial performance data to internal and external stakeholders in the form of annual financial statements. Although accounting methods quantify natural and human resources as cost elements within a firm's production system, insufficient attention has been paid to environmental and social issues (Houldin, 2001). Reporting evolved to include a social dimension, which started in the late 1960s, where corporations reported to labour unions on their social performance (e.g. working conditions

and compensations). Social reporting, unlike conventional reporting, focuses on qualitative and non-financial terms (Gray, 2002).

Further, environmental reporting started in the 1970s, where it was highly influenced by the Brundtland Commission's agenda, which proposed "long-term environmental strategies that can achieve effective 'sustainable development' to the year 2000 and beyond" (Brundtland, 1987). Environmental accounting emerged in this milieu, where accountants started reporting to management and external stakeholders on firms' environmental performance and impacts (Schaltegger & Burritt, 2000; KPMG, 2003). However, environmental scholars have been cynical about the foundations of environmental accounting since the primary focus is profit generation rather than addressing ecological and social challenges (Gray & Bebbington, 2000). There are technical issues in environmental accounting that can be attributed to the complexity of our systems that cannot be monetized using the existing conventional financial accounting tools. These cases are evident when natural resources have a scared social value to local communities or when environmental damage cannot be reversed (MacDonald, 2010).

In the late 1980s, firms in Europe and the United States of America started to disclose information on their emissions after the implementation of the Toxic Release Inventory (TRI) program. The program allowed several firms to map their environmental management programs and disclose robust information to their management and external stakeholders on their environmental performance. Another impetus for environmental reporting was led by the US Securities and Exchange Commission (SEC) when it required public firms to incorporate and disclose "environmental exposures" exceeding $100,000 in their yearly reports. The SEC initiative paved the road for many reporting initiatives afterward since organizations have recognized the importance of environmental reporting (Davis-Walling & Batterman, 1997).

Furthermore, the 1990s took a broader dimension after the Brundtland Commission's definition of sustainability, where corporations attempted to achieve a competitive advantage via environmental stewardship. The literature on balancing the economic, environmental, and social aspects of corporate responsibility also appeared in the 1990s with the introduction of TBL accounting (Elkington, 1998). Environmental reports changed from a narrative format to supplement financial information that is core to firms' financial performance. The reports also included regulatory and management information that address shareholders, community members, management, and others.

Gray (2002, 2006) highlights that sustainability reporting has been treating the three pillars (economic, social, and environmental) in isolation whereas integration is needed to provide relevant and reliable information regarding corporate sustainability. The interrelation between the three domains as interacting systems should provide reliable and material information regarding sustainability performance as well as the risk associated with corporate activities. In fact, sustainability accounting has ongoing challenges to consider and quantify non-financial data and incorporate forward-looking information (ICAEW, 2003). Owen and O'Dwyer (2008) are skeptical about contemporary sustainability accounting frameworks, which lack a robust integration and financial materiality, which is core to setting corporate strategies.

It is worth mentioning that the 21st century was highly influenced by sustainable development. This was evident in the World Business Council for Sustainable Development's definition of CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large" (World Business Council for Sustainable Development, 2008). With the introduction of the SDGs, which are seventeen goals that shape the

United Nation's view of sustainability until 2030, organizations have drafted their environmental reports to disclose information regarding their firms' roles in achieving the SDGs (Kaya, 2016). In essence, organizations have been addressing environmental and CSR reporting from a socio-economic lens that balances between corporate profits, environmental concerns, and societal needs.

WBCSD has made several attempts to create reporting platforms that scale up business performance towards achieving the United Nation's SDGs (WBCSD, 2017). Shaping corporate performance and reporting around the 17 goals can help provide robust guidelines for decision-makers to contribute positively towards society and the environment. Unlike the MDGs, which were mainly state-centered, the 2015 SDGs shape a transformative shift in government and private sector cooperation. In this regard, The WBCSD introduced free "SDGcompass" for businesses. The compass is a guideline available free on WBCSD's website to help companies to understand the SDGs, align the firm's goals and operations with the 17 goals, and assure the integration of environmental reporting and corporate sustainability into corporate governance (SDG Compass, 2017).

Figure 8 summarizes the chronological development of industrial sustainability progress, where Nattrass and Altomare (1999) show how the organizations in the 1970s responded in a reactive approach to newly implemented environmental regulations and standards. In the 1980s, organizations optimized the use of their resources in a way that optimizes cost efficiency. Organizations proactively incorporated environmental management systems in the 1990s to become more eco-efficient and achieve corporate legitimacy. Starting the 2000s corporations started implementing integrated social and environmental reporting that aims at enhancing corporate accountability and sustainability.

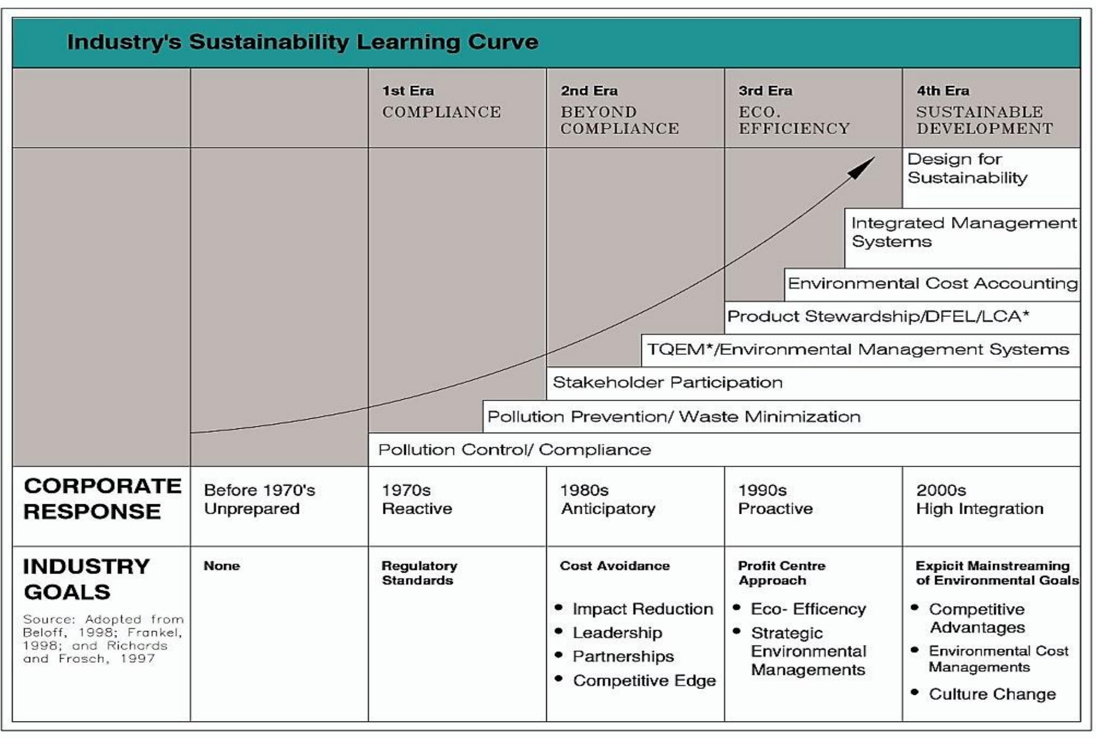

Figure 8: Greening the industry over time.

Source: adapted from Nattrass and Altomare (1999, p. 16).

6.2.2 Environmental Reporting Initiatives and Guidelines

Herzig and Schaltegger (2006, p. 309) define a guideline as “a non-binding guidance document based on practical experiences.” On the other hand, regulations are usually enforced by governing institutions to ensure the systemization of reporting. Three entities have promoted the integration and standardization of reporting as the pinnacle of reporting. The first is the IIRC, which is a coalition of NGOs, regulators, and companies that aim at establishing integrating reporting framework across the global business. The second is SASB, which focuses on the materiality of sustainability accounting in a way that helps managers disclose useful information for investors as well as other stakeholders. The last is the GRI, which has been the most accepted and adopted reporting guidelines by global corporations in the last ten years. In 2011, KPMG

surveyed the world's largest 250 corporations. The survey's result shows that 95 percent of participating companies provide annual reports on their sustainability performance, of which 80 percent of them follow the GRI guidelines (KPMG, 2011).

The GRI is an independent international organization that has had extensive efforts since 1997 to institutionalize sustainability reporting. GRI aims at helping businesses, governments, and institutions understand and communicate their impacts on global sustainability issues (Global Reporting Initiative, 2017). Although SASB and IIRC provide better integrated and material reporting frameworks, the GRI initiative has been more successful in transforming niche individual corporate efforts in CSR reporting into a more standardized global trend. In essence, GRI has been adopted by the majority of global market-leading companies for CSR reporting and continuous to be replicated across different sectors (Fifka, 2012)

Additionally, there has been a significant collaboration between the GRI board, SASB, and the CDP, which represents a global disclosure system that allows organizations to measure, manage, and report on their environmental performance. Since 2017, GRI and CDP have been collectively working on enhancing the quality of environmental reporting, when the two non-profit organizations signed a Memorandum of Understanding (MOU) that aims at the systemization of companies' reporting on climate change and water data. Both organizations reach 6000 organizations that follow their guidelines to report on environmental performance (Global Reporting Initiative, 2018). Table 13 provides a summary of the predominant reporting frameworks that are currently used by industrial organizations.

Table 14: Reporting frameworks

STANDARD	FOCUS	WHY REPORT	SCORING	WHO REPORTS	REPORTING PERIOD
CDP DRIVING SUSTAINABLE ECONOMIES	Primarily GHG emissions but has grown to address water and forestry issues as well.	CDP holds the largest repository of corporate GHG emissions and energy use data in the world and is backed by nearly 800 institutional investors representing more than $90 trillion in assets. Its transparent scoring methodology helps respondents understand the steps expected of them.	Companies receive two separate scores for Disclosure and Performance using a 100-point scale. CDP recognizes top-scoring companies in the Carbon Disclosure Leadership Index (CDLI)	Public and private companies, cities, government agencies, NGOs, supply chains.	Climate Change program: Feb 1- May 29 Supply Chain Program: April 1st – July 3rd Cities program: Jan 1st to March 31st Water and Forestry programs: Feb 1 to June 30
SUSTAINABILITY ACCOUNTING STANDARDS BOARD SASB	Public companies Only. Industry-specific issues deemed material to investors.	SASB standards enable comparison of peer performance and benchmarking within an industry.	No Scoring system. Instead, SASB is a standardized methodology for reporting sustainability performance through the Form 10- K	corporations and companies	Integrated into quarterly 10-K filings

International Organization for Standardization ISO 14001:2015	Systemization and improvement of institutions' environmental management practices.	Quality assurance purposes.	No Scoring system.	Public and private companies, and NGOs	A certification, not annual reporting.
INTEGRATED REPORTING <IR>	The IR Framework provides Guiding Principles and Content Elements to assist companies (and other organizations) in the preparation and presentation of integrated reports	Unlike the TBL, integrating reporting focuses on the interaction between the economic, social, and environmental pillars.	No Scoring system.	Public and private institutions.	Typically integrated into a company's traditional annual report.
Global Reporting Initiative™	Corporate Social Responsibility (CSR) with equal weight on environmental. Social and governance factors. Heavy on stakeholder engagement to determine materiality.	GRI is the most renowned reporting platform. With the launch of the standards in 2018, GRI continues to be the oldest and widely respected reporting methodology globally.	Focus on economic, environmental , social, governance aspects of corporate performance.	Public and private companies, cities, government agencies and NGOs.	Typically integrated into a company's traditional annual report.

6.2.3 Institutional Pressures and Environmental Reporting

Moreover, cooperative dialogues and industry pressures can help develop reporting

standards (Herzig & Schaltegger, 2006). Organizations conform to rules in the market to sustain their operational legitimacy and enhance their image, which is the core of the institutional theory. The conceptual foundations of institutionalism aim at explaining the institutional order in a way that describes how and why institutions behave similarly across different organizations. Fernando and Lawrence (2014) emphasize the impact of institutional theory on developing resilient social structures. Institutional theory links organizational practices, which include environmental reporting, to values and norms of a society in which an organization operates where isomorphic changes can result from coercive, mimetic and normative pressures (Powell & DiMaggio, 1991). Briefly, coercive isomorphic change is mandated by supranational institutions and governments, as evident in the case of South Africa, where sustainability reporting is currently mandatory. In other words, all publicly traded companies on the Johannesburg Stock Exchange must integrate sustainability reporting with financial reporting (Dupont-Enzer, 2014). Mimetic isomorphism occurs when corporations imitate one another to meet societal pressures and enhance their image. Imitation can also stem from an instrumental approach, as CSR reporting has been viewed as a tool that helps corporations achieve efficient and effective results on economic and socio-ecological levels (Porter & Kramer, 2011). Finally, institutional change can be justified from a normative approach where inter-organizational professionals and networks bring change (Fifka, 2012).

6.2.4 Environmental Reporting and Organizational Success

Several organizations have been successful in achieving environmental stewardship while sustaining positive financial growth. Through strategic CSR, corporations formulate and articulate their values to ensure that they meet the expectations of their stakeholder. A good example of a company that has strategically invested in its corporate sustainability and environmental and social

responsibility is the 3M Company, which is an American multinational conglomerate based in Maplewood, Minnesota. 3M has global sales of USD 30.2 billion annually and employs 89,446 people worldwide and produces more than 55,000 products that are sold in about 200 countries (3M, 2017). 3M has been a pioneer in acknowledging global challenges such as scarcity of natural resources, GHG, and climate change. Therefore, 3M management implemented the Pollution Prevention Pays (3P) strategy, which aims at lowering the consumption of water, energy, and material in the production process. The company communicated to its shareholders that the profitability will be impacted in the short term due to the initial investment costs; however, the company will harvest the economic, social, and environmental returns strategically in collaboration with all stakeholders.

3M invested in selecting responsible suppliers, who can comply with providing environmentally friendly materials. The company also invested in a closed-loop fund that helps other organizations with their recycling initiatives. As a result of this comprehensive sustainability strategy that effectively engaged suppliers, employees, stockholders, customers, and local communities, 3M was able to reduce the aggregate production costs and witnessed an increase in the corporation's goodwill as a result of the company's good environmental reputation (Weber, 2014). The company was also able to prevent 2.1 million tons of pollutants and save 2.1 billion (USD) since the launch of the 3P strategy (3M, 2017). Consumer retention rate has increased as a result of their satisfaction from high-quality and eco-friendly products that have lower prices, which stem from the reduction in raw material cost (3M, 2014). Unfortunately, this sustainability success story is not a common case in several sectors yet the efforts of reporting have been featured more prominently with integrated reporting standards and governmental regulations being negotiated in other countries such as Germany, Sweden, France, South Africa, and others.

6.3 Banks

The greening of banks and other financial intermediaries began in the 1980s. It was mainly driven by increasing energy prices and by the introduction of environmental laws and regulations. Consequently, the financial industry started with the greening of their operations to save costs for energy, waste, and material inputs, such as paper.

Another motivation to go green was to be a role model for clients. If banks could demonstrate that greening their business helps them to save costs, their borrowers or investees might follow their example and also save money by addressing environmental costs. This increases their financial liquidity and consequently, reduces risks for banks. Furthermore, it decreases the likelihood of environmental fines and reputational issues that also decreases risks for lenders and investors.

At about the same time, environmental regulations based on the ‘polluter pays principle’ created the responsibility for environmental impacts for all businesses. This created also risks for the financial sector as lenders and investors. Environmental costs for greening business and production processes, as well as fines for environmental impacts, created financial risks for businesses that also created risks for their lenders and investors. As a consequence, banks started to manage the risks mainly in commercial credit risk management (Weber, Fenchel, & Scholz, 2008). They introduced criteria to assess the environmental and sustainability risks of their borrowers to avoid losses caused by environmental risks. As research has demonstrated, this approach can help to decrease credit risks (Weber, Hoque, & Islam, 2015; Weber, Scholz, & Michalik, 2010).

After having established processes and tools to manage financial risks related to environmental issues, the financial industry focused on green investment opportunities. Mutual

funds, indices, and other green investment vehicles have been issued. The first of these products address investment in green technologies. Later, responsible investment (RI), used environmental social and governance criteria to analyse potential investments. Instead of only investing in green technologies or services, SRI invested in environmental leaders, excluded environmental laggards, or engaged with investees to push them into a more environmentally friendly direction. The best known-products and services that have been instigated during this area are the Dow Jones Sustainability Index, sustainability rating agencies, such as Sustainalytics, and investment funds such as the Ariel Fund.

Also, in the 1990s climate finance came up supported by the Kyoto Protocol (Labatt & White, 2007). Another event that influenced the financial sector was the launch of the Kyoto Protocol on climate change mitigation. The financial sector engaged in financial products and services for carbon reduction, carbon offsets, and financed projects under the Kyoto Protocol mechanism.

Climate finance resurrected with COP 21 in Paris in 2015. Since the global community achieved an agreement with regard to climate mitigation and adaptation, it became obvious that finance is needed to be able to achieve climate goals. Climate bonds and green bonds become increasingly popular during this time. These bonds are issued by private or public issuers to finance activities that address climate change or other environmental impacts, such as air and water pollution (Reichelt, 2010; Weber & Saravade, 2019).

Climate change does not only offer financing opportunities for the financial industry but also bears risks. The Governor of the Bank of England, Mark Carney, was one of the first financial sector representatives who warned that the financial industry stability might be affected by climate change (Carney, 2015). Direct physical risks caused by extreme weather events might impact

financial sectors operations, for instance, through the flooding of branches and IT facilities. These direct risks might also affect borrowers and investees and consequently expose the financial industry to risks. Furthermore, reputation risks might occur if banks finance clients that significantly contribute to climate change, such as coal power plants. Another type of risk is transition risk, which occurs because of the transition to a low-carbon economy. Such a change in the structure of the economy, however, means that the financial industry has to adapt to these new structures, new types of businesses, and new types of risks.

Connected with transition risks is the risk of stranded assets. They appear because of the unexpected devaluations of assets because of the low-carbon technology diffusion as well as energy efficiency and climate policy measures (Mercure et al., 2018). Consequently, the value of assets of firms in the fossil fuel industry might decline and expose lenders, investees, and shareholde3rs to financial risks. Recently, risk-adjusted returns of fossil fuel shares already underperformed those of other industries (Henriques & Sadorsky, 2017; Hunt & Weber, 2019), and financial industry portfolios exposed fossil fuels might be at risk.

One of the most recent developments in green finance in the financial sector is addressing the SDGs, published in 2015 (United Nations, 2015). The SDGs found entrance into green finance reporting and green finance strategies in the financial industry. A recent report by PWC (PWC, 2018) suggests that the financial industry mainly addresses SDG 13 Climate Action, SDG 8 Decent Work and Economic Growth, and SDG 4 Quality Education. Again, climate change is a major issue for the financial industry providing both, risks and opportunities.

6.4 Voluntary codes of conducts in the financial industry

The financial industry addresses green finance through several voluntary codes of conducts. One of the first is the UNEP FI - founded in 1992 - that originally tried to integrate

environmental aspects into credit risk management and operations. Ten years later, the GRI's Financial Services Sector Supplement was created as the first effort to standardize environmental and sustainability reporting in the financial sector. Many institutions involved in the GRI Financial Sector Supplement have been also involved in UNEP FI. The EP and the PRI codes of conducts for sub-groups of financial products and services, project finance and institutional investment. The EPs have been launched by 10 project financing institutions in 2003 based on IFC's performance standards of environmental and social sustainability (International Finance Corporation, 2011, 2012b). One of the reasons for the launch has been NGO pressure on project financiers to consider environmental and social aspects in their financing decisions (Weber & Acheta, 2014). Currently, the EPs have 94 members. Their goal is to determine, assess, and to manage environmental and social risk in projects to guarantee a minimum standard for due diligence and monitoring to support responsible risk decision-making (The Equator Principles, 2013). Hence, they are not focusing on green finance but rather on the avoidance of environmental risks, a focus they have been often criticized for (Lawrence & Thomas, 2004; Wright & Rwabizambuga, 2006). Another critique of the EP is that they do not address climate change appropriately and still allow project finance for coal and coal power plants (Weber, 2016a). Therefore, the question remains, whether the EP will help to increase the ratio of green finance in project finance.

A second major initiative for greening the financial industry are the Principles for Responsible Investing (PRI). PRI has more than 2200 members. The initiative addresses six main principles, such as (1) incorporating ESG issues into investment analysis and decision making; (2) to be active owners that incorporate ESG into their ownership policies and practices; (3) seeking appropriate disclosure on ESG issues by their investees; (4) to promote acceptance and implementation of the Principles within the investment industry; (5) to work together to enhance

the effectiveness in implementing the Principles; and (6) to report on activities and progress toward implementing the Principles.

PRI helps its members integrate sustainability into their financial decision making for investments and ownership practices. Recently, UNPRI introduced reporting and assessment standards (Weber, 2018) to ensure that members follow the principles and to avoid freeriding (Richardson & Cragg, 2010). Again, the principles rather address the integration of ESG in investment decisions, but it does not address increasing the ratio of green investments.

Two other initiatives, The Global Impact Investing Network (GIIN) and the Global Alliance for Banking on Values (GABV), pursue a different approach to green and sustainable banking. They mainly focus on increasing the positive social and environmental impact of the financial industry.

The GABV, founded in 2009, consists of 55 banks, microfinance institutions, and credit unions globally (http://www.gabv.org/the-community/members/banks). According to GABV, these members advance positive change in the banking sector to make it more transparent, and to support economic, social and environmental sustainability, as well as the real economy. Hence, GABV is less focused on mitigating financial risks caused by environmental issues but tries to use finance to deliver sustainable economic, social, and environmental development (www.gabv.org/about-us).

Though the banks in the network are very successful financially, most of the banks are relatively small and the total assets under management are just over $160 billion. To become a member of the association, financial institutions must fulfill certain criteria related to value-based banking. They have to use the triple-bottom-line approach at the core of their business model and should be grounded in communities, serve the real economy and enable new business models to

meet the needs of communities and the real economy. Furthermore, they should strive for long-term relationships with the client to be able to understand their need and risks. Also, they should be self-sustaining and resilient to outside disruptions, such as financial crises. Finally, members should have a transparent and inclusive governance model (Weber, 2018). With regard to green finance, embers of the association finance projects and enterprises active in projects, such as clean energy, organic agriculture, and food production, and zero waste projects.

The GIIN is an association addressing impact investing. Impact investing intentionally invests to generate positive environmental and social impacts (Weber, 2016b). Conventional financial institutions conduct it as part of their business, by philanthropists, and by specialized impact investors. The GIIN has developed the IRIS standards (www.thegiin.org/iris) for impact investment reporting. In contrast to UNEP FI and PRI, these standards measure the impact of the investment on the environment and society. The indicators can be selected based on the intended impact and address the categories presented in Table 15.

Table 15: Impact investing categories and indicators

Category	Indicators
Financial performance	Standard financial reporting metrics such as current assets and financial liabilities
Operational performance	Governance policies, employment practices, and social and environmental impact of day-to-day business activities
Product performance	Social and environmental benefits of the products, services, and unique processes offered by investees

Sector performance	Impact in particular social and environmental sectors, including agriculture, financial services, and healthcare
Social and environmental objective performance	Progress toward specific impact objectives

The indicators are used by impact investors to assess the impact of their investments and to compare them with other investment or other investors. Furthermore, they can be used by stakeholders to evaluate investors.

A similar direction with regard to impact takes the Principles for Responsible Banking. They are a part of UNEP FI and focus on addressing climate change and on creating a positive impact (https://www.unepfi.org/banking/bankingprinciples/). Forty-nine banks and a number of stakeholders have endorsed them as of March 2019. The principles state that banks align with the SDGs and the Paris Climate Goals. Furthermore, banks strive to work on achieving positive impacts through their business, and they work with their clients to encourage sustainable business practices. Fourthly, signatories proactively consult and engage stakeholders. Firth, they will establish governance practices to achieve the targets, and finally, they are transparent and accountable for the positive and negative impacts of their business (UNEP Finance Initiative, 2018).

With these principles, UNEP FI is the first 'conventional' financial industry code of conduct that explicitly addresses the impact of banks on sustainable development and climate change. Hence, it uses a similar approach to GABV and GIIN. Before, most voluntary codes of conduct rather addressed environmental risks for the financial industry. Furthermore, the principles strive to be transparent about both, positive and negative impact. So far, sustainability reporting

rather focused on positive impacts without being transparent about negative impacts (Weber, 2016a).

6.5 Regulative approaches

In addition to voluntary codes of conduct, some national and international regulative approaches exist. Internationally, the TCFD, instigated by the Financial Stability Board, has been developing standardized indicators to assess climate-related risks and opportunities (Task Force on Climate-related Financial Disclosures, 2017). Also, the European Union published the report 'Financing a sustainable European economy' that strives to develop a roadmap for sustainable finance in Europe (EU High Level Expert Group in Sustainable Finance, 2018). Finally, we will discuss to major national policies to green the financial industry, the Chinese Green Credit Policy (China Banking Regulatory Commission, 2012) and the Bangladeshi Environmental Risk Management Guidelines (ERM) and Green Banking Guidelines (Bangladesh Bank, 2011).

The TCFD was established in 2015 to address the reporting problem on climate-related risks and opportunities, and the need for standardized reporting ensure that the financial industry can evaluate and manage climate change-related risks (TCFD, 2017 a). Because current disclosures lack information on the financial implications of climate-related aspects, the TCFD recommends that climate-related disclosure represents relevant information; is specific and complete; is clear, balanced and understandable; is consistent over time; is comparable among companies within a sector, industry or portfolio; is reliable, verifiable and objective; and is provided on a timely basis (TCFD, 2017a).

As a result of the provision of the above-mentioned information, the financial industry should be enabled to manage climate-related risks that might affect their lending and investment

portfolios (TCFD, 2017a). Consequently, the TCFD published industry-specific key performance indicators that can be integrated into lending and investment decisions.

Furthermore, to enable the financial industry to address climate-related risks accordingly, the TCFD recommends the development and the use of climate-related scenarios (TCFD 2017c) and has developed implementation guidelines to implement effective climate risk management practices (TCFD 2017b). These indicators and guidelines might be a first step into the standardization of climate-related risks assessment in the financial industry. However, to green the industry, strategies should integrate the indicators into financial decision-making.

The EU High-Level Expert Group in Sustainable Finance published their report end of 2018 (EU High-Level Expert Group in Sustainable Finance, 2018). Priorities related to green financing identified by the expert group are to identify priority areas for climate finance. Furthermore, the report addresses the short-termism of the financial industry that has already been addressed by Mark Carney, Governor of The Bank of England who called it the tragedy of the horizon (Carney, 2015). Another important recommendation of the report is to develop standards for green financial products and services, such as green bonds, to increase the transparency in the field. Also, the report recommends integrating sustainability in both, the governance of financial institutions and in financial supervision.

The Chinese Green Credit Policy requires lenders to allocate investment toward green industries, to constrain investments in polluting industries, and to withdraw financing from industries targeted for their negative environmental impact (Weber, 2017). State Environmental Protection Administration (SEPA), the People's Bank of China (PBOC), and the China Banking Regulatory Commission (CBRC) have published this policy. Banks have to deliver key

performance indicators to the financial regulator who will use them for their risk assessment. Consequently, this is the first policy that implements financial sector sustainability regulations overseen by the financial regulators. Though implementation issues with regard to the policy are discussed controversially (Zhang, Yang, & Bi, 2011), studies suggest a positive impact on both, the increase of green lending and the decrease of financial risks (Cui, Geobey, Weber, & Lin, 2018). A longer-term evaluation will show whether the policy achieved its intended goal.

Another country that implemented green finance regulations through is central banking authority is Bangladesh. In 2011, they introduced the Environment Risk Management Guidelines (ERM) and Green Banking Guidelines in 2011 (Bangladesh Bank, 2011). Since then, the policies have been upgraded by integrating environment and social risk into the Credit Risk Management (CRM) guidelines (Weber et al., 2015). Furthermore, Bangladesh Bank introduced Environmental and Social Risk Management (ESRM) guidelines including an environmental risk analysis model (Chowdhury, 2018). Studies suggest that the introduction of environmental issues into credit risk analysis increases the quality of the risk rating process because adding environmental and social aspects into the analyses increases the risk rating ability (Weber et al., 2015). However, other studies demonstrate that Bangladeshi banks adopt the policy because it is mandatory and consequently increase their financial performance. On the other side, however, they do not adopt sustainability practices on a voluntary basis because they want to benefit from this win-win-situation (Chowdhury, 2018). Hence, it is important not only to introduce regulations and guidelines but also to educate the financial industry about the benefits of adopting a green finance strategy.

In general, green and sustainability guidelines and regulations overseen by financial regulators are in their infancy. First results seem to be positive with regard to decreasing financial

risks and increasing green finance. However, more research is needed to explore longer-term effects and the effectiveness of different regulations in different countries and regions.

6.6 Conclusion

This chapter reported approaches in green finance by multilateral financial institutions, industrial companies, and banks. In all three sectors green finance is on the rise, be it to reduce costs by reducing the use of energy and other resources as well as mitigating risks, or be it to increase revenues by offering green finance and green finance products and services. Hence, financial materiality seems to be the main driver for green finance so far.

Though we see an increase in green finance, we also have to conclude that green finance is far from being in the core of the business for most MDBs, industrial companies, and banks. For most of green finance is a niche product and service compared to their conventional business. MDBs financing green energy and coal at the same time, fossil fuel companies that also invest in renewable energy, and banks that lend to the oils sands and green tech at the same time are the rule and not the exception.

This might make sense form a portfolio diversification perspective. However, it does not make sense form a longer-term impact perspective because the negative impacts of conventional finance might become material for financial institutions and companies in the future. For instance, increased extreme weather events, caused by emissions, and financed emissions will harm the economy and its players.

If we have a look at reporting, one might get the impressions that green finance plays a major role in MDBs, companies, and banks. This, however, is less a matter of the ratio of green finance compared to other businesses, but it is because of the way of reporting. Most of the

reporting is still to paint a positive picture to stakeholders and shareholders. It is less used as a strategic management tool, but as a tool to increase the reputation of firms.

Furthermore, many of the reporting standards focus on what is material for the company and not for the environment. Consequently, performance is reported from an investor's perspective. It is less about the impact of green finance on the environment, but rather about the impact of green finance on the company itself. This supports green finance only as far as it has a direct positive impact on the business or as long as it has a positive impact on reputation. Environmental reporting and accounting, however, should also account for the positive and negative impacts of green and conventional finance for the environment. Therefore, to create a transparent picture of green finance, both green and brown finance has to be reported.

Hence, to finalize this section, we state that green finance is on the rise. However, it is still reactive instead of being a strategic core business and a holistic approach that weighs green finance against brown finance is still missing.

MANUSCRIPT ENDS

Chapter 7

7 Conclusions

This dissertation explores the evolution of strategic CSR in the SDGs era. While scholars and CSR practitioners have been criticizing the nebulousness of the domain (Jamali & Karam, 2016), we emphasize that the SDGs can provide a robust framework for CSR given their objective 17 goals, 169 targets, and 232 unique indicators. Analyzing CSR critiques triggers one question: why have various CSR conceptualizations failed to enhance the relationship between corporations and societies? Answering this question requires a lucid explanation of the three terms that compose CSR, namely: corporate, social, and responsibility. Corporations, whether small, medium, or large, are society centered. In essence, products and services are produced by some people to satisfy the needs of others in society. The term social indicates that the accountability and legitimacy of institutions stem from society. CSR has become a mandate for a firm's license to operate, maintaining competitive positioning, and avoiding reputational risks (Rupley, Brown, & Marshall, 2017).

This dissertation aims to redefine CSR in the SDGs era by adopting a strategic lens that was first highlighted by Drucker (1984), who referred to the concept of strategic CSR, which helps to enhance the competitive advantage of firms. Capitalizing on the work Werther and Chandler (2010), the manuscripts of this dissertation focus on how the SDGs can serve as a framework to achieve strategic CSR given the ambitious 15-year agenda of the 17 goals, which requires a tripartite governance model between governments, the private sector, and civil society members (Biermann, Kanie, & Kim, 2017).

Further, based on CSR theory (Bansal & Song, 2017; Drucker, 1984), legitimacy theory (Post & Preston, 2012), and corporate sustainability theory (Gómez-Carrasco et al., 2020), we argue that SDGs as a novel framework connect business strategy, cascaded across all functions and core operations given their objective 17 goals, 169 targets, and 232 unique indicators. This thesis addresses several empirical and theoretical research questions that define the changes in the CSR domain post the adoption of the UN SDGs in 2015. First, with the intent to deepen the understanding of strategic CSR, this dissertation provided a novel scoping review that explored the changes in the academic literature on strategic CSR, focusing on articles retrieved from 2015 to 2019. This chapter, namely chapter two of this dissertation, identifies how the SDGs influenced the literature on strategic CSR and shed light on the new elements that define CSR reporting in the SDGs era.

Second, this research has explored the changes in the practical reporting standards, where we analyzed 14, 308 GRI reports to understand how and why organizations adopt SDGs reporting (chapter 3). Research findings show that larger firms are more likely to integrate the SDGs into their CSR reports that smaller companies. Likewise, publicly listed firms are more likely to report on the SDGs since they are more vulnerable to public opinion and stakeholder pressures (Ali et al., 2015). In alignment with research on legitimacy theory, our results show that industries with higher sustainability impacts tend to report more on the SDGs (United Nations Global Compact and KPMG International, 2015, PWC, 2018, Rosati and Faria, 2019, Scheyvens et al., 2016).

Third, the dissertation explored the applications of AI and machine learning in sustainability through data retrieval, cleansing, and analytics of SDGs related data, namely the tweets on SDGs by corporations. Our findings show that corporations have started using social media as a platform for CSR reporting including reporting on SDGs (Cho et al., 2017). In chapter 3, we analyzed

24,000 SDGs related tweets from S&P 500 companies. Our findings contribute to CSR literature by highlighting the role of SDG reporting in relation to corporate strategy and legitimacy. Drafting CSR agendas towards meeting a number of SDGs can help organizations gain legitimacy and contribute positively to the economy and society (Bebbington and Unerman, 2018). Strategic CSR can help organizations focus on their core business impacts hence gain legitimacy while reaping sustainability stewardship.

Further, while our findings in chapter 3 show a high correlation between adopting CSR standards and reporting on the SDGs, we highlight current challenges for CSR practitioners such as the existing of multiple reporting frameworks and target audience, the lack of a clear consensus of the definition of materiality, and the confusion of reporting cycles (ElAlfy and Weber, 2019). In chapter 5, we propose a set of policy recommendations that can help improve sustainability reporting across sectors. We argue that firms should continue to use the SDGs as a framework to plan, implement, and report on their strategic CSR. Finally, in chapter 6, we contribute to the literature on CSR and SDGs reporting by reflecting on the reporting practices in the industrial companies and financial institutions. We identify current gaps in existing reporting frameworks, which lack an integrated approach that not only focuses on financial materiality but also incorporates social and environmental implications of a firm's core operations. Therefore, this dissertation highlighted core gaps in the CSR literature by repositioning strategic CSR as a framework for corporate sustainability, which should continue to contribute towards a set of goals hence achieving the targeted corporate sustainability.

7.1 Contribution to Knowledge

Four novel contributions have been identified throughout the published manuscripts of this dissertation. First to the literature on CSR, corporate sustainability, and SDGs. This dissertation serves as a starting point for positioning strategic CSR, which shapes the development and implementation of CSR agendas in the real business world. The research shows why the SDGs fit the definition of strategic CSR given their long-term outlook, inclusion of strategic stakeholders, and assurance that sustainability is cascaded from the firm-level strategy to operational-level ones. The results of the scoping review also define theoretical perspectives on how the SDGs can serve as a framework to enhance sustainable business models, which engage its stakeholders in promoting corporate sustainability.

Second, our findings also provide a novel contribution to the literature on legitimacy theory by validating the fundamentals of the theory on a new phenomenon, namely reporting on the SDGs by highlighting the main factors that influence a firm's reporting on the SDGs. Confirming with the literature on legitimacy theory, we found that large corporations, as well as those operating in higher sustainability impacts, are more likely to report on their sustainability performance. Our results also show a regional influence, which stems from the existence of sustainability regulations in specific regions and countries. Chapter 3 provides an empirical study that analyzes the integration of the SDGs into GRI based reports. The GRI is the most popular reporting framework hence this study can entice sustainability decision-makers to integrate the SDGs into their agendas and start mapping their performance indicators towards the SDGs. We also highlighted existing reporting support tools for organizations such as the SDG Compass, which was introduced by the WBCSD. The compass can help firms understand the goals and their linked indicators, where they align their operational and sustainability indicators towards achieving the SDGs (SDG Compass,

2017).

Third, this dissertation provides a novel contribution to CSR research methodologies through applying social media analytics to analyze how corporations use social media platforms to communicate on their CSR agendas and contribution to the SDGs. The study conducted in chapter four contributes to strategic CSR theory, where our results demonstrate that firms report on the SDGs and sustainability issues that are core to their impacts and business operations. This contribution also opens the door to test AI applications in sustainability through data retrieval and analytics for larger datasets that are available on the web. These methods also can assess the positive or negative sentiments towards a specific topic related to corporate sustainability or an operational sector.

Fourth, the research highlights contemporary industry applications in sustainability reporting mainly the use of social media as a platform for firms to report on their CSR agendas. Our findings contribute to the literature on CSR by highlighting new methods that can enhance stakeholder engagement since social media foster interactive dialogues between a diverse network of stakeholders in an efficient and timely manner (Capriotti, 2011). Our study also contributes to the literature on CSR reporting by highlighting the current challenges in the domain and recommending a set of recommendations that can promote the harmonization and systemization of reporting practices as highlighted in chapters 5 and 6.

7.2 Contribution to Academic Theories

Further to the discussion on contribution to knowledge, this dissertation provides a unique contribution to strategic CSR theory by highlighting the new elements that define CSR practices in the SDGs Era. Our analyses draw on strategic CSR literature to provide a holistic perspective on 'how' and 'why' firms are integrating CSR into core planning, processes, and structures

intending to create both social value and corporate value (Chandler & Werther, 2010). Our results also call for answers to the questions of whether organizations report about the SDGs because of legitimacy reasons or whether they also address them strategically. These results also contribute to management theories by highlighting institutional factors that influence the incorporation of SDGs into strategic decision making.

The findings presented in this dissertation contribute to legitimacy theory. In chapter 3, we contribute to legitimacy theory in suggesting factors that contribute to the legitimacy-based adoption of the SDGs, including organizational size, being publicly listed, being from high impact industries, certain global regions, etc. SDG reporting is a way to increase organizational legitimacy that is used by organizations striving for legitimacy in front of their stakeholders and consequently to reduce risks (Djoutsa Wamba et al., 2018).

According to this theory, firms communicate about topics that are popular with their stakeholders (Preston & Post, 1975). This behaviour has also been found for CSR communication on social media (Gómez-Carrasco et al., 2020). In chapter 5, our findings add to legitimacy theory and are in agreement with Guthrie and Parker (1989), who found that firms do not exclusively communicate about CSR driven by achieving legitimacy. If tweets about the SDG were exclusively driven by legitimacy motivations, firms would tweet about the most popular SDGs. Hence, we suggest that corporate communication about the SDGs is driven by both, striving for legitimacy and strategic CSR. In our case legitimacy theory explains that companies communicate about SDGs in general, but strategic CSR explains which SDGs companies communicate.

7.3 Discussion, Practical Implications, and Limitations

This dissertation highlights several implications that can bridge the gap between academia and industry in the CSR domain. We shed light on the challenges of the CSR domain given the

complexity of our socio-ecological systems when compared to the other financial parameters of decision making. Second, throughout the manuscripts, we highlighted how the standardization of reporting frameworks can enhance the quality of CSR reports as well as their comparability, which should increase the quality of decision-making for managers, investors, and other stakeholders. Though CSR has had a tumultuous legacy, it is being featured more prominently since the introduction of the SDGs, which can optimize the harmonization and standardization across all existing frameworks such as CDP, GRI, SASB and TCFD. In essence, each of these mentioned frameworks has different expectations of what a firm should report on and different definitions of the materiality of indicators that should be disclosed to make the "right" decisions.

Reflecting on the current pandemic situation after COVID-19, there is an urgent need to identify the ESG indicators are material to evaluate business risk and sustainability. As highlighted in chapter 2, strategic CSR provides a better framework for firms to gain its societal legitimacy through a systematic process that cascades the strategy across all core functions to maximize a firm's growth and its market-adaptation dynamics while considering a broader array of stakeholders. The SDGs provide a strategic framework that can help firms navigate this turbulent economic period while contributing to agenda 2030 of sustainable development.

Another practical implication is the use of social media for CSR reporting. Despite the numerous researches on CSR communication and stakeholder engagement, there is a critical gap in identifying stakeholders' perceptions of CSR communication, which requires conducting sentiment analyses of online reporting of corporations' websites and social media, which is novel to CSR analysis.

It is important to emphasize some of the limitations of this dissertation, which will be highlighted per manuscripts to set the case for future research needed in the CSR and corporate

sustainability domain. In chapter 2, a core limitation was the novelty of the SDGs domain where the findings were derived from academic literature that still a triangulation with industry sources to reveal an objective status quo of strategic CSR in the SDGs era.

For chapter 3, our results provide a novel contribution to the literature on SDGs reporting and analyzing 14000 reports from the GRI database. Nevertheless, the study only used GRI as a sustainability reporting framework and only covered the years 2016 and 2017. Future studies might repeat the analyses using a larger dataset that covers 2016 to date data. Also, the results should be triangulated with other reporting frameworks, where we recommend the analyzing recent TCFG reports ana analyze how its governance and scenario sections can influence agenda 2030.

In chapter 4, we analyzed 24,803 SDG-related tweets yet one of the limitations faced was the data extraction resulting from Twitter restrictions, where we could only extract the newest 3200 tweets for each company. Larger datasets can help enhance accuracy hence assuring the validity and reliability of the data. Also, the study only covered Twitter, which is one of social media platforms, where the results also needed to be triangulated with other platforms, for example, the companies' official Facebook pages, yet data retrieval restrictions will also apply.

From a holistic viewpoint, a core limitation to this dissertation, which applies to the whole CSR domain, is the lack of definition of the scope and scale of corporate responsibility. The debate on what constitutes a "material" report is debatable among corporate sustainability experts, which is negatively impacting practitioners in the field, who are struggling to select the "right" disclosure to enhance their decision-making process, mitigate risks, and gain societal legitimacy. Another limitation is the lack of comparability of the results given the lack of harmonization and standardization of sustainability reporting. In essence, it is difficult to assess the quality of reporting on the SDGs as highlighted by the PWC reports (PWC 2017, 2018). Finally, the

dissertation focused on CSR reporting and not the sustainability performance of corporations.

7.4 Future Research Direction

This dissertation provides several contributions to CSR literature and practice yet further research on the CSR-SDG nexus is critical to help achieve the goals hence contributing to global sustainable development. Across the manuscripts, we highlighted future research avenues within the CSR and corporate sustainability domain.

First, we highlight the subject of sustainability and SDGs reporting has focused on large and multinational firms with minimal research on SMEs. Future research agendas should focus on the role of SMEs in contributing towards the SDGs. In the same realm, we need future research is needed to investigate actual corporate contribution to sustainable development and the SDGs. This point is a critical gap and requires grounded empirical research and evidence-based management systems that can help optimize existing reporting methods and frameworks and scale up corporate sustainability. The same applies to non-publicly listed companies, where research shows that publicly listed companies are more likely to report on the SDGs. Therefore, future research should consider analyzing the factors that can increase the engagement of non-listed firms with SDGs reporting.

Second, due to the higher impacts of financial institutions as discussed in chapters 5 and 6, further research is needed to measure their direct and indirect impacts and the degree of influence the financial sector has on SDGs progress. Third, while social media analytics can help understand trends in CSR reporting, further research is needed to assess stakeholder responses via sentiment analyses related to SDGs communication. Also, future researchers on social media analytics can consider analyzing the influence of the SDGs discourse on corporate sustainability both quantitively and qualitatively. This point will also incorporate a sentiment analysis to analyze the

stakeholders' engagement and the power dynamics of CSR strategies.

Fourth, researchers on corporate legitimacy can help answer the question of whether reporting on SDGs stems is legitimacy-driven or follows a strategic CSR approach that cascades sustainability strategies across all functions and sets clear Key performance indicators to measure progress. This points a lingering need to shift the research from the goals and target levels towards the indicator-level.

Fifth, my future research agenda can also cover measuring the sustainability performance of corporations and not only reporting practices. This will also open the door to assessing the correlation between "quality SDGs reporting", which results from adopting a robust ESG framework and financial performance. This research on corporate sustainability can help identify the core indicators that are material to evaluate business risk and sustainability. Finally, future research is needed to assess the parameters of business resilience and strategic CSR in the COVID-19 pandemic. In essence, identifying the indicators that can help develop resilient business models in the post-pandemic realm

These avenues of research including the dissertation presented here can inform policymakers on the government level and decision-makers on the corporate level on the financial and financial gains from strategic CSR. The results are also useful for investors as well as other stakeholders when evaluating the sustainability performance of a firm, which can help develop instruments that support strategic CSR planning, implementation, and reporting.

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