

Analyzing Corporate Governance Mechanisms for Sustainability in Firms: From Concepts to Practices

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

Chapters 1 and 5, which were not meant to be published, are solely written by me. Chapters 2, 3, and 4, which have been published, were co-authored with other contributors.

Chapter 2 is published in the *Journal of Management and Sustainability*, on which I was the lead author joined by Michael O. Wood and Horatiu A. Rus. Chapter 3 is published in the *Journal of Management and Sustainability*, on which I was the lead author joined by Michael O. Wood and Horatiu A. Rus. Chapter 4 is published in *Corporate Ownership and Control*, on which I was the lead author joined by Sean Geobey, Olaf Weber and Michael O. Wood.

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Abstract

Corporate sustainability is becoming more prevalent, leading to the intertwining of governance mechanisms at the organizational level, which is ultimately responsible for sustainability and the financial performance of firms. The urgency of corporate governance challenges requires firms to define sustainability measures and strategies. In the current literature, there is a continuous reference to the progression of corporate governance and corporate sustainability. To achieve sustainability targets and ensure higher financial performance, a firm must seek more precision in its governance mechanisms. However, the literature on corporate governance and how it affects firms' sustainability performance is lacking, specifically in exploring how effective corporate governance mechanisms can assist firms in improving their financial performance. The governance-sustainability nexus can be advanced by conducting strategic research that examines a wider range of theories and analytical models. The study is a step toward understanding how effective governance mechanisms can lead to sustainable and financially successful organizations. Furthermore, the study guides firms in their decision-making, resource allocation, and global sustainability efforts.

In this dissertation, the first study systematically documents how different corporate governance mechanisms affect the link between sustainability and the financial performance of firms. The study has used cluster analysis to identify three focus areas: board-level governance, operational-level governance, and assurance-level governance. The findings have policy implications for firms seeking to integrate sustainability into their operations, in addition to consolidating the existing knowledge and frameworks in which governance and sustainability research intersect. The results provide a comprehensive overview of emerging governance strategies related to firm performance. Despite this, more deductive evidence was required in the literature covered in the next two studies.

The second study empirically evaluates the influence of board and operational governance on the relationship between sustainability and the financial performance of firms. The study utilized the structural equation modelling method to examine the sample of 224 large and actively traded Canadian firms listed on the Toronto Stock Exchange. The results revealed partial mediation effects of board governance and operational governance, both singly and jointly, and full mediation in the relationship between sustainability and financial performance of firms. The results were evaluated based on factors affecting firms' sustainability and financial performance, including firm type, age, and other industry-specific characteristics. The study provides valuable insights for firms to link governance structures

with sustainability for better financial performance outcomes and include an integrated sustainability focus in their competitive strategies.

The third study empirically tests the impact of workforce practices on firms' environmental and social performance. The relationship between workforce practices and the sustainability performance of firms is being examined by examining the mediating effect of firms' financial performance. The study examines the moderating effect of firm age on workforce practices and the sustainability performance of firms. A linear regression analysis was employed to analyze the sample of 224 large and actively traded Canadian firms in the study. The findings significantly impact the direct and indirect impacts of workforce practices on firms' environmental and social performance. The findings suggest that firms choose the right mix of practices to tailor workforce management and achieve better sustainability performance in their environmental and social initiatives.

The research presented in this dissertation has contributed to knowledge and scholarly literature about how a firm's sustainability performance is influenced through the adoption of various governance mechanisms. The research provides a basis for adopting a normative and functional approach to tackle contextual challenges while seeking sustainability at a firm level. The study departs from a narrower approach of firms' financial performance when it comes to sustainability initiatives driven through governance mechanisms. The study provides instruments which could help firms to partially integrate sustainability into their business strategies.

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Dedication

I want to dedicate this dissertation to my wife, Sana Hayat, who was my utmost support and had faith in me throughout this journey.

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Chapter 1

Introduction

1.1 Overview

The main theme of this thesis is to examine the mediating role of corporate governance mechanisms on the relationship between corporate sustainability performance (CSP) and corporate financial performance (CFP). This dissertation examines the relationship between CSP and CFP from a governance perspective by (1) presenting a unique cluster analysis based on the extant literature to capture the current state of knowledge in this field, (2) identifying and testing governance impacts on sustainability and financial performance of firms, and key gaps within the existing literature, and (3) expanding on existing knowledge of CSP-CFP links through effective governance mechanisms to explore further opportunities in this research field. These efforts aim to provide a comprehensive overview of governance mechanisms among firms, and the extent to which sustainability is integrated into their business activities, to provide insights into governance mechanisms (such as board-level interventions) that aim to improve the sustainability behavior of firms.

This chapter provides an overview of the research in this doctoral dissertation and how it is related to sustainability management. In the final section of this chapter, an outline of the structure of this dissertation (Chapters 2 to 5) is presented.

1.2 Introduction

Sustainability management has become more important in business practices over the past few decades, not only from an idealistic perspective but also from a financial perspective, competitive positioning, and the overall long-term future of corporate firms (Schaltegger & Wagner, 2017). Firms are being urged to act more sustainably due to factors like climate change and increased public interest in sustainability (Porter & Kramer, 2011). Firms are now exploring ways to generate sustainable long-term results in the sustainability management field, while satisfying diverse stakeholders and working towards the greater good for their business, the environment, and the community (Bansal & Song, 2017). As a result, firms aim to incorporate sustainability into their business strategy while also creating opportunities for innovation and value creation in corporate design processes (McDonough & Braungart, 2002).

This dissertation examines sustainability management from the perspective of corporate sustainability. The concept of corporate social responsibility (CSR) influenced the evolution of corporate sustainability and the relationship between firms' sustainability and financial performance has been a matter of contention for many years. Corporate sustainability places more emphasis on a firm's long-term financial performance than many previous studies on CSR's short-term impact. The importance of corporate sustainability has increased due to the control mechanisms that safeguard the interests of shareholders and other stakeholders (Daily et al., 2003). Thus, corporate sustainability has become a significant aspect in the sustainability management field as firms commit to measuring and reporting their sustainability performance, comprehending interconnectedness (i.e., economy, society, and environment) and equitably allocating resources (Hawken, 1994). However, it is difficult to test the continuing impact of sustainability performance on a firm's financial performance due to the difficulty in finding an appropriate measure of CSP (Gond et al., 2016).

Firms are under increasing pressure from governments and stakeholders to act on sustainability issues. Firms may face a loss of business, legitimacy, and profit if they don't respond proactively in the area of sustainability (Bansal & DesJardine, 2014). This raises questions about the role of corporate governance and its potential impact on sustainability and financial performance of firms. Corporate governance is defined as the system of rules, practices, and processes that are responsible for governing and controlling a firm (Daily et al., 2003). The definition of corporate governance could be based on two perspectives. The traditional perspective of explaining corporate governance involves focusing on formal institutional arrangements or structures (Safferstone, 2000). These institutional arrangements or structures follow a system of rules, roles, and responsibilities within the overall decision-making process of the firm. Alternatively, there is a dynamic perspective of corporate governance which focuses more on process and outcome (Charan, 2005). Despite their differences, these two perspectives could be seen as influenced by institutional theory (Meyer & Rowan, 1977). The aim of institutional theory is to identify institutions and institutional pressures, as well as their impacts on organizational structures, processes, and practices (Krenn, 2016).

The firm's strategic alignment towards corporate sustainability is dependent on both perspectives of corporate governance. The traditional approach, which emphasizes institutional arrangements, is crucial in determining the role of firms, managers, and shareholders in attaining better sustainability performance and the rights and responsibilities of different stakeholders. From a dynamic standpoint, when it comes to corporate governance, a process-driven approach is significantly more important

because governance is not necessarily about structures, but rather about the interactions between them. If this dynamic nature of corporate governance about processes is understood, it makes more sense how various governance mechanisms can mediate sustainability and financial performance of firms. This dissertation postulates that the traditional view of governance focuses more on the moderating role of governance. For instance, how formal institutional arrangements or governance structures (rules, roles, and responsibilities) can affect the strength and direction of relationships between sustainability and financial performance (e.g., Pasko et al., 2022; Waheed et al., 2021; Zhu et al., 2022). While the dynamic perspective on governance focuses on how governance mediates sustainability and financial performance for firms. For instance, this perspective explains the process through which sustainability and financial performance of firms are related. The connection between high sustainability performance and high financial performance could be explained by the fact that such firms may have better governance mechanisms, leading to better financial performance. The focus of past studies has been on the moderators, meaning what alleviates or reinforces the sustainability-financial performance relationship (Alipour et al., 2019; Kim, 2021; Kouaib et al., 2022). As a result, previous studies have emphasized governance moderators more than mediators, which has limited the depth of causal explanations available in the literature. This dissertation focuses on governance as a mediator, specifically how sustainability performance and financial performance are related, and the causal explanations for their relationship.

Corporate governance is crucial in ensuring the success of a firm's performance. Corporate governance and sustainability research is often handled separately with little attention given to the interaction between the two areas. This dissertation expands on previous research by examining corporate governance and sustainability together. The research primarily considers the mediating role of governance mechanisms on the CSP-CFP relationship. The mixed findings in previous literature suggest that firms may respond to governance mechanisms distinctively, as different governance mechanisms have different concerns (Wu & Zhou, 2022).

The transformation of governance processes has extended beyond product redesign to the reimagining of business processes for holistic change (Raworth, 2017). The evolution of corporate governance has resulted in mechanisms for monitoring business actions and creating business strategies that take sustainability into account (Werbach, 2009). Firms that want to incorporate sustainability into their corporate activities must participate in strategic decision-making at the organizational level (Bonn

& Fisher, 2011) and adopt innovative strategies to transform their relationships with the environment and society (Domingues et al., 2017).

As research in governance mechanisms matures, academics must move beyond simply identifying these mechanisms. They need to better understand how these governance mechanisms affect various aspects of business performance, such as the financial, environmental, or social aspects. Thus, this dissertation also focuses on understanding different workforce practices and examines how firms can enhance workforce practices to maximize their sustainability value. The optimization of workforce practices to achieve higher sustainability performance may require different approaches for different firms. For instance, would it be appropriate for a commodity-based manufacturer to employ the same workforce practices as a high-tech manufacturer? Thus, this dissertation also explores how firms differ in their workforce practices and their impact on sustainability performance.

The research examines the different governance mechanisms of over 200 of the largest Canadian firms listed on the Toronto Stock Exchange (TSX). This research raises the following three research questions:

1. What is the role that governance mechanisms play in the relationship between a firm's sustainability and financial performance?
2. Which governance mechanisms mediate the relationship between sustainability and the financial performance of firms and to what extent do these governance mechanisms affect sustainability and the financial performance of firms?
3. How do firms' governance utilize various contextual workforce practices to improve sustainability performance?

The interconnectedness between corporate governance and sustainability has become a topic of great interest to academics, researchers, consultants, and regulators. This dissertation examines various aspects of sustainability performance from the Refinitiv database. In the study sample, the Refinitiv database ranks more than 200 TSX firms for governance and sustainability performance scores. The study of this sample and its governance mechanisms is a significant topic from a sustainability perspective and could have an impact on firms' financial performance (given the contribution of sustainability initiatives to the financial performance in general). Governance mechanisms at the board and operational level of firms are the focus of many interventions aimed at improving sustainability

behavior of firms (e.g., Cadbury, 1993; Duppati et al., 2019; Hormati et al., 2022; Pasko et al., 2022). Governance at the board and operational levels is a unique and important way to implement and test various interventions. The current study's results provide valuable insight into how to approach firms in terms of various governance mechanisms and implementation.

Studies on topics such as workforce practices, which require a holistic approach to organizational thinking, may require a multifaceted approach. In the literature about governance and its influence on firms' sustainability and financial performance, a variety of tools, approaches, and concepts have been utilized (e.g., Garcia-Sanchez et al., 2019; Tian & Tian, 2021). The interrogation of governance mechanisms is a common theme among these approaches, which involves a holistic and systematic lens. Using governance mechanisms as an approach, firms can examine their corporate sustainability challenges, including environmental and social initiatives. Corporate sustainability is a relatively new field in academia that focuses on environmental, social, and economic challenges through an interdisciplinary approach. Corporate sustainability recognizes that sustainability topics and concerns are interconnected and interdependent.

Therefore, when examining a multifaceted subject such as sustainability, corporate governance offers an inclusive viewpoint that can include diverse influences and interdependencies and provides understanding on how firms can manage to integrate sustainability into their corporate activities. Corporate governance also provides insight how firms can engage in strategic decision-making at the organizational level (Bonn & Fisher, 2011) and adopt better workforce practices to transform their relationships with the environment and society (Domingues et al., 2017).

1.3 Research Gap

A growing body of literature has been produced to illustrate the link between sustainability and financial performance of firms (e.g., Ameer & Othman, 2012; Jan et al., 2019; Siew et al., 2013). The literature review indicates that although these studies have examined the link between firms' sustainability and financial performance, most of the research in this field focuses mostly on wide range of sustainability initiatives, with very limited studies focusing on governance mechanisms in mediating such a relationship. This is among the main gaps that have been identified in literature.

Considering a governance approach when addressing challenges related to corporate sustainability, especially when focusing on firms' financial performance, is a viable option. Despite the abundance of research on firms' sustainability and financial performance (e.g., Ameer & Othman, 2012; Grewatsch

& Kleindienst, 2017; Uyar et al., 2021), there is no consensus about the nature of the connection between these elements or how they manifest in various governance contexts (e.g., Dutta, 2020; Jung et al., 2018). The literature on corporate sustainability has traditionally focused on the impact of social and environmental factors on performance, but governance has been left out of the equation (e.g., Alsayegh et al., 2020; Sancha et al., 2022). As a result, there is a lack of research on governance mechanisms and how they impact the sustainability and financial performance of firms, as a result. On the one hand, governance mechanisms have the potential to bridge the gap between firms' sustainability and financial performance. On the other hand, the governance of firms can also lead to improved business practices, which could have an impact on their sustainability performance. Therefore, sustainability policies and practices within organizations can be shaped by implementing governance mechanisms, which then leads to higher financial performance. In the literature, there is an opportunity to explore how various governance mechanisms relate to the equation of sustainability and financial performance of firms. There are a few questions that arise from this. Does the governance structure of firms that adopt sustainability differ from that of other firms? If yes, in what ways are their performance measurement and reporting systems different? In what ways can incorporating sustainability into a firm's operations improve its performance?

To this end, this dissertation conducts three studies to examine governance as a factor in the sustainability and financial performance of firms. The first study conducts qualitative research to document the impact of various governance mechanisms on the sustainability and financial performance of firms in a systematic manner. The second study conducts a quantitative investigation to examine the mediating effects of board governance and operational governance on the sustainability and financial performance of firms in Canada. Finally, the third study conducts a quantitative analysis to determine the effect of workforce practices on the sustainability performance of firms in Canada. The first two studies examine whether better sustainability performance is related to better financial performance by employing different governance mechanisms, thereby reducing the sustainability consensus gap. The third study builds on the growing consensus on sustainability-financial performance relations and examines how different workforce practices can contribute to higher sustainability performance. Together these papers provide evidence that the firms' governance capacity to incorporate sustainability practices results in improved financial performance.

Given the absence of comprehensive studies examining governance mechanisms, and the importance of comprehending the link between firms' sustainability and financial performance, the purpose of this

dissertation is to conduct an inclusive examination of the governance mechanisms employed by large firms in Canada, using both quantitative and qualitative research methodologies. Moreover, the results of this study will be utilized to design and implement governance mechanisms that aim to enhance the sustainability and financial performance of firms.

1.4 The Integrated Theoretical Framework

This dissertation seeks to provide a theoretical justification for governance practices that affect firm sustainability and financial performance in an integrative manner as represented in Figure 1.1. There are two main purposes of using an integrative theoretical framework. The first goal is to synthesize and integrate the extant literature and provide a theoretical foundation for governance practices that affect sustainability and financial performance of firms. The second goal is to theoretically examine firms' adoption of governance practices that enhance connections between sustainability and financial performance, based on the various reasons why governance practices should be implemented.

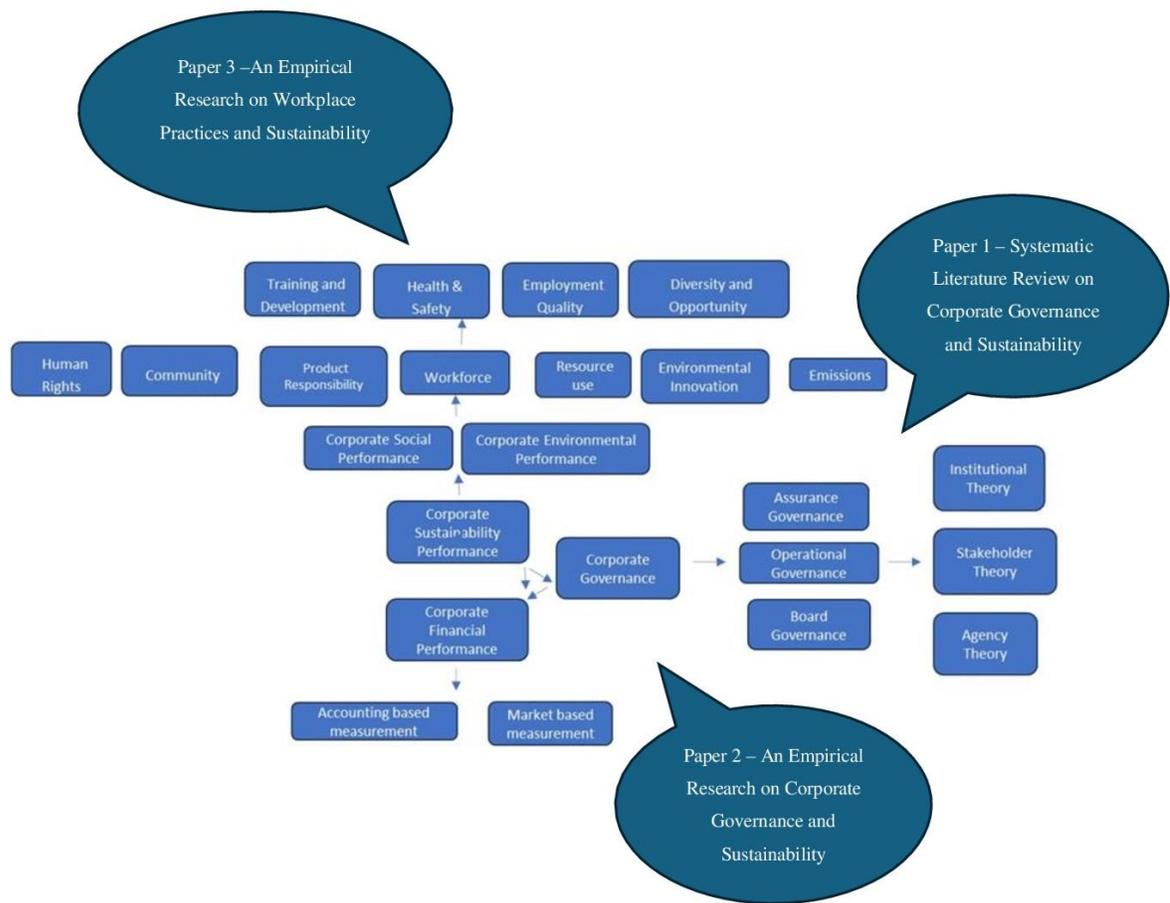


Figure 1.1: The Integrated Theoretical Model

The corporate governance literature has used different theories to leverage governance mechanisms to explain observed phenomena in the firm's decision-making process (Sun et al., 2022). By invoking multiple theoretical perspectives, it is postulated that deeper insights into governance mechanisms can be gained and understanding about how they affect sustainability and financial performance of firms realized. With so many options, it is important to select which theories to focus on. The first consideration is that these theories must be able to adapt to the governance practices that impact sustainability and financial performance of firms. The selection of a theory for the research is based on the governance mechanism being examined and the stakeholders being taken into consideration.

The second point to consider is to ensure that the theories adopted are not competing but rather complementing each other. To put it simply, the process of examining different theories could sometimes lead to a mutually agreed-upon interpretation of governance practices that affect firms' sustainability and financial performance. The corporate governance literature draws heavily on agency theory, stakeholder theory, institutional theory, and signaling theory as they are deemed to be consistent with governance practices influencing sustainability and financial performance of firms. These theories are also interconnected internally. For instance, the concept of 'managerial opportunism' originated from agency theory and has been borrowed by other three theories (e.g., Mirrlees & Raimondo, 2013; Renders & Gaeremynck, 2012). As a result, this dissertation presents a theoretical framework that is integrated and includes four theories. This dissertation shows that firms can benefit from governance mechanisms by utilizing an integrated theoretical framework: 1) to prevent managerial opportunism among managers and owners in relation to firm sustainability and financial performance; 2) to address the asymmetry of information regarding sustainability initiatives between the firm and all stakeholders; 3) to signal the mediated role of governance between sustainability and financial performance; and 4) to ensure compliance with all stakeholders and to be accountable to all stakeholders for governance and sustainability.

Therefore, this dissertation examines how governance mechanisms mediate the sustainability and financial performance of firms. This work contributes to the literature by presenting and evaluating a theoretical framework that links governance mechanisms from complementary theories to expose the mediating effects of corporate governance on the relationship between sustainability and financial performance.

1.4.1 Theoretical Traditions for Corporate Governance

Corporate sustainability requires an interdisciplinary approach that requires firms to revitalize existing policies and practices, inviting a broader organizational level change (McIvor et al., 2022). The existing literature has used several main theories in corporate sustainability research, which provide a comprehensive theoretical understanding of how corporate governance can influence a firm's sustainability performance. Agency theory, stakeholder theory, institutional theory, stewardship theory, signaling theory, and many others are among the theories mentioned. Nonetheless, no single theory can fully explain a firm's sustainability and financial performance in relation to various governance mechanisms. The study endeavors to develop a plan of action to conduct a comprehensive examination

of a firm's sustainability and financial performance that can be achieved by utilizing multi-theoretical viewpoints and creating a meaningful critique of business operations and management practices (Okhuysen & Bonardi, 2011). This dissertation is the first attempt to create a comprehensive theoretical framework for governance practices that influence sustainability and financial performance of firms.

The first theory, agency theory, is grounded in the assumption of managerial opportunism and a potential conflict between the interests of managers and shareholders (i.e., the principal-agent problem) (Jensen & Meckling, 1976). Agency theory predicts organizational outcomes based on the contentious relationship between managers and shareholders, if information asymmetry exists, agents engage in opportunistic behavior, and the principal (shareholder) and agent (manager) have conflicts of interest (Renders & Gaeremynck, 2012). The dissertation contends that an agency problem arises when the agent fails to act in the best interest of the principal, because principals and agents have individualistic and opportunistic interests that affect the efficiency of their relationship. A principal-agent relationship is based on two key considerations (Mirrlees & Raimondo, 2013). The first consideration is economic rationality, where the principal and agent are keen on maximizing their own interests. The second consideration is self-interest, where the principal and agent's interests are not always in alignment. In this dissertation, both considerations of the principal-agent relationship are utilized, and it asserts that effective governance mechanisms can achieve cognitive alignment of ownership and managerial control. Effective governance practices can reduce information asymmetry between managers and shareholders, enabling shareholders to observe the actions of managers and evaluate if they are aligned with the firm's sustainability and financial objectives. Thus, this dissertation indicates that a well-functioning governance mechanism is necessary for the firm to hold agents accountable for their sustainability performance.

The second theory, stakeholder theory, suggests that managers form an association with shareholders and other stakeholders in performing tasks, including economic, social, and environmental initiatives (Donaldson & Preston, 1995). The emphasis of stakeholder theory is on a firm's need to meet the objectives of all stakeholders, not just shareholders, as organizational accountability covers more than just economic performance. Thus, stakeholder theory suggests that managers form an association with shareholders and other stakeholders in performing tasks, including economic, social, and environmental initiatives. Stakeholder theory can be categorized into normative and instrumental approaches (Valentinov & Hajdu, 2021). The normative approach implies that all stakeholders are entitled to be considered and treated fairly, regardless of their power. The instrumental approach suggests that

managers face challenges in treating all stakeholders fairly when there is conflict between stakeholder groups' interests. This dissertation uses the instrumental approach of stakeholder theory in which a firm must manage conflicting interests of stakeholders to achieve an optimal balance between them. The argument of this dissertation is that governance mechanisms are mutually supportive of all aspects of the stakeholder theory, leading to a conflict-free relationship between management and stakeholders. According to the stakeholder theory, good governance requires a firm to be accountable to multiple stakeholders. Firms should be held responsible for rewarding their stakeholders for their support by encouraging sustainability, as they have a variety of stakeholders who provide the necessary resources for their overall success. This dissertation also suggests that managers may have various stakeholder obligations. Consequently, different governance mechanisms substitute the bilateral relationship between managers and shareholders with a multilateral relationship between managers and stakeholders.

The third theory, institutional theory, is centered on identifying institutions and their associated pressures, as well as explaining how institutions influence organizational structures, processes, and practices (Greenwood et al., 2015). Institutional scholars believe that institutional pressures are the reason for organizational structures and processes (Meyer & Rowan, 1977). Institutions generate institutional pressures on individuals and firms to adopt similar structures and processes. Institutional theory encompasses two dimensions, one of isomorphism and the other of decoupling. Isomorphism refers to the imitation of internal structures and procedures by organizations that are perceived to be more legitimate (DiMaggio & Powell, 1983). While decoupling refers to the separation of formal organizational structure or practice from actual organizational practice (Haack & Schoeneborn, 2015). This dissertation uses both perspectives to assess governance mechanisms and proposes that firms that are confronted with normative pressures on sustainability issues are more likely to engage in sustainability practices as a way to avoid penalties and standardize their sustainability performance. The wider institutional settings can influence sustainability strategies depending on how firms govern themselves (Aguilera & Jackson, 2003). The decision-making process of firms regarding corporate sustainability can be driven by institutional pressures (Aguilera-Caracuel et al., 2013). Firms operate under the influence of different institutional aspects, which then results in them acting homogeneously in a market economy. The dissertation contends that institutional pressures could be the result of organizational structures, processes, and practices, which force firms to adopt similar structures, processes, and practices. This research identifies firms acting homogeneously, which can be observed

through various governance mechanisms that aid the sustainability and financial performance of firms. According to this dissertation, governance mechanisms could be associated with either government regulations or the market economy. As a result, firms may be less motivated to integrate sustainability into their core business strategy where there are weak government regulations or poor market standards. Thus, the institutional frameworks may facilitate the creation of government regulations or voluntary practices, which in turn enhance the firms' sustainability and financial performance.

The fourth theory, signaling theory, emphasizes that signalers are individuals who acquire information about a product or organization that is not readily accessible to others. Signaling theory is employed to depict how signalers and receivers behave when they have different information and is centered around eliminating information asymmetries between them (Spence, 1974). The dissertation suggests that governance mechanisms can serve as reliable signals of a firm's sustainability performance, which can impact its financial performance. This notion is premised on the assumption that managers can distinguish which governance mechanisms impact the sustainability and financial performance of a firm. Hence, managers can reduce information asymmetry by providing more information to stakeholders. This dissertation acknowledges that firms in a market are viewed as having greater knowledge about their sustainability than stakeholders. If stakeholders lack knowledge about firms' sustainability but are concerned about certain business activities being unsustainable, they may opt not to measure their sustainability. This dissertation suggests that firms with superior sustainability performance may lose out on opportunities if stakeholders are unaware of their superior sustainability performance. Firms that are better in sustainability signal, stakeholders consider their sustainability performance to be adequate, reflecting their good reputation in the market. Firms will continue signaling as long as it results in a higher profit than the cost for them. As a result, this dissertation demonstrates that the signaling function of information symmetry distinguishes between superior governance practices and inferior governance practices of firms (Bae et al., 2018). This dissertation also finds that governance practices have been treated as a single set of practices in the previous literature (Tao-Schuchardt et al. 2023). Therefore, this dissertation opts for various governance practices that allow for customization and focus on specific contextual settings, which require specific governance practices.

This dissertation is supported by an integrated theoretical framework that incorporates a series of theoretical traditions, including agency theory, stakeholder theory, institutional theory, and signaling theory. Despite common concepts and differences, each theory has its own unique features. This

dissertation identifies various governance mechanisms that firms can use to enhance their sustainability and financial performance by integrating corporate sustainability into this integrated theoretical framework. The objective is to improve a firm's sustainability and financial performance by addressing information asymmetry, either between the agent and the principal or between the firm and all stakeholders, along with signaling and institutionalizing superior governance practices to improve the sustainability performance of firms.

1.4.2 Theoretical Traditions for Corporate Governance

The four theories presented above can be discussed through managerial opportunisms, based on their relationship and interconnectedness. Managerial opportunisms can lead to conflicts of interest between managers and owners or between managers and other stakeholders, which can have a negative impact on firms' sustainability and financial performance.

Managers who are concerned about risk and value immediate returns on investments are more likely to invest in short-term projects that enhance short-term performance metrics. Such short-term performance goals are detrimental to firms that incorporate sustainability considerations into their business strategies (Slawinski et al., 2017). Managers who focus solely on short-term profits and fail to consider sustainability considerations can be held accountable by a well-functioning governance mechanism using agency theory perspective (Mahmood et al., 2023). As a result, this could lead to fewer disagreements between managers and shareholders concerning sustainability integration in business strategies.

Alternatively, managerial opportunism may be manifested when managers focus exclusively on shareholders who control financial control of the organization. In such cases, certain powerful stakeholders who control critical resources but are not dependent on the firm can hold those resources back from the firm. If a firm does not change its unsustainable behavior, those stakeholders could threaten to stop providing critical resources. By employing stakeholder theory's instrumental approach, a well-functioning governance mechanism can hold managers accountable for balancing the conflicting interests of stakeholders (Freeman et al., 2012).

Likewise, managerial opportunism may occur in situations where government regulations are weak, or governance structures or processes are poor. In these scenarios, managers may not have a keen interest in addressing sustainability issues. The isomorphic approach of institutional theory can result in managers facing coercive, normative, or mimetic pressures on sustainability issues (Sun et al., 2022).

Coercive pressures can be caused by powerful individuals in firms, which can result in sustainability inclusion in business strategies. Normative pressures may ensure firms conform to sustainability to be perceived as engaging in legitimate actions. Mimetic pressures can cause firms to imitate the sustainable actions of successful firms to gain legitimacy.

Managerial opportunism could also be seen due to the decoupling dimension of institutional theory. The act of decoupling is when formal organizational practice is separated from actual organizational practice (Haack & Schoeneborn, 2015). To ensure a balance between actual structures and practices and institutional pressures, managers become loosely coupled to buffer their formal structures. This leads to artificially narrowing the gaps between firms' formal structures and actual work practices, including outsourcing their worst polluting activities or falsely optimizing their sustainability scores. A functioning governance system can aid firms in bridging the gap between their formal structures and actual work practices.

Managerial opportunism could also be seen when firms lack adequate mechanisms to signal how sustainability and financial performance are related. In this scenario, managers may disguise stakeholders' concerns or display a lack of intention or necessity about the relationship between sustainability and financial performance. The use of signaling theory's three dimensions (intent, camouflage, need) can be utilized to develop a governance mechanism that ensures signaling of firms' sustainability and financial performance (Sun et al., 2022). Intent signaling may indicate how governance mechanisms may suggest future actions to incorporate sustainability considerations into business strategies for financial success. Camouflage signaling may lead to the use of governance mechanisms that highlight potential vulnerabilities associated with unsustainable business activities. Need signaling may ensure that governance mechanisms communicate the necessity of sustainability performance to stakeholders.

As illustrated in the preceding paragraphs, governance mechanisms for reducing managerial opportunism can be analyzed from multiple theoretical perspectives. The multi-theoretical perspective of corporate governance benefits all stakeholders interested in a firm's ability to reduce managerial opportunism, including employees, customers, suppliers, regulators, and policy makers. However, when assessed in isolation, a full and complete explanation of the phenomenon remains wanting. Therefore, this dissertation develops an integrated model of corporate governance to close this theoretical gap.

1.5 Research Significance and Contributions

Corporate governance is often the starting point for sustainability in business strategies, largely because firms recognize that governance is the primary non-financial factor that influences financial performance (Bhagat & Bolton, 2008). For firms, including sustainability considerations in their business strategy presents a significant opportunity. This research advances the business case for sustainability, which enables firms to promote internal innovation, enhance operational efficiency, and establish reliable internal and external assurance mechanisms. Firms must have robust governance structures and processes to implement the business case for sustainability. Firms with good governance perform better in the long run and are better able to capitalize on sustainability-driven opportunities (Daily et al., 2003).

Therefore, this dissertation's overarching research question is: What is the significance of corporate governance as a critical control mechanism for firms in achieving their sustainability and financial goals? The significance of corporate governance in firms' sustainability and financial performance can be examined in multiple ways. First, corporate governance provides structures and processes for integrating sustainability into firms' business strategies. For example, Unilever has demonstrated how transparent governance has enabled them to integrate sustainability into their business operations through structures and processes. In the last few years, Unilever's Sustainable Living Brands have outperformed the rest of the business in terms of growth. Second, corporate governance addresses managerial opportunisms to reduce agency conflicts around sustainability-financial performance relationships. Enron is a particular example of managerial opportunism. The failure of Enron's board to perform its regulatory role in the company and reject its governance responsibilities caused the company to engage in unsustainable activities. And third, numerous corporate scandals in recent years have been caused by the lack of governance in value chains. An example of this is Volkswagen's emission scandal. The company used illegal software to activate its emission controls, while its vehicles produced up to 40 times more emissions in real-world driving.

With its focus on corporate governance, this research seeks to identify and synthesize mechanisms that can explain the relationship between sustainability and financial performance of firms. For example, assurance mechanisms can reduce risks for firms by relying on third-party verifications for a firm's sustainability reporting, fostering transparency, and building trust with stakeholders. Also, this

dissertation suggests that firms prioritize corporate governance literacy to enhance sustainability behavior, such as green product design or process improvements.

This research also examines firms that have a significant market capitalization and are regularly traded in Canada. However, the reporting of the environment, social, and governance in Canada has been voluntary since firms are striving to make their brands sustainable. Thus, Canada's monitoring and mitigation of environmental impacts is generally less strict than regions with more rigorous sustainability reporting protocols. This dissertation could be of great interest to business professionals as it examines what Canadian firms have done to improve sustainability performance without reporting regulations.

Holistically, this dissertation makes multiple contributions. First, this dissertation contributes to the literature on corporate governance and sustainability where it exhibits a shift from more theoretical subjects to a more strategic and practical dimension. Few papers have examined corporate governance and sustainability in a strategic depth. Bonn & Fisher (2011) explore new aspects of firms trying to incorporate sustainability into their corporate activities, which necessitate strategic decision-making at the organizational level or Meuer (2017) examines workforce practices in the context of the UK, where managers in different firms prioritize workforce practices as a strategic priority, which helps them improve their firms' environmental sustainability. While these papers look at settings where corporate governance issues are reflected in strategy formulation, this dissertation is unique in its contribution to how strategy formulation is converted into strategy implementation and ultimately performance.

Second, this dissertation enhances the literature on corporate governance disclosure by furnishing evidence within an organizational setting where various corporate governance mechanisms are outlined to determine their direct effects on firms' sustainability and financial performance, as well as their ancillary influences. Firms use effective corporate governance mechanisms to align the interests of various stakeholders, enhancing their sustainability and financial performance. While previous literature studies specific governance mechanisms that have also a positive spill-over effect on firms' performance, e.g., forming a more diverse board can lead to better sustainability performance (Araya-karnkul et al., 2022; Bristy et al., 2021; Cui et al., 2020; Disli et al., 2022; Hussain et al., 2018; Naciti, 2019; Omran et al., 2021; Pant & Nidugala, 2022), this dissertation demonstrates that firms utilize multiple governance mechanisms simultaneously. According to this dissertation, each of these mechanisms has the potential to influence how firms align their sustainability interests (some primarily

aim to increase the probability of environmental initiatives, while others aim to increase the possibility of social initiatives). In most cases, these governance mechanisms are capable of substituting and complementing each other. The overall performance of firms is increased in these cases.

Third, this dissertation focuses on the literature that examines how corporate governance plays a mediating role in a firm's sustainability and financial performance, and how performance relationships are affected by different governance mechanisms. There has been limited research on corporate governance as a mediator between a firm's sustainability and financial performance. When researching the link between a firm's sustainability and financial performance, the extent to which corporate governance mediates these relationships is a matter of inquiry, the answer to which sets the foundation for this dissertation. Previous literature has mainly studied moderating variables such as firm characteristics, industry characteristics, business environment, etc. (Buerthey et al., 2020; Cordeiro et al., 2020; Cui et al., 2020; Grewatsch & Kleindienst, 2017; Haladu & Salim, 2016; Latip et al., 2022) affecting the firms' sustainability and financial performance relationship, whereas this dissertation illustrates how firms can address their decision-making process by using various governance choices that mediate corporate sustainability. This could provide better insights into this area.

Fourth, this dissertation contributes to the empirical research on the relationship between corporate sustainability and financial performance (e.g., Duppati et al., 2019; Hormati et al., 2022; Pasko et al., 2022). While most of this research centers around corporate sustainability performance, which is established on an antecedent role that aids firms in carrying out organizational practices that generate competitive advantages, this dissertation uses empirical research to investigate corporate governance and sustainability. This dissertation tests whether corporate governance plays a significant role in the sustainability and financial performance of firms, utilizing the two dimensions of governance: board and operations. These two dimensions of governance are focused on the relationship between sustainability and financial performance, which includes seven distinct indicators. No study has yet examined how board and operational governance mediate the influence of corporate sustainability on a firm's performance. The empirical contribution of this dissertation captures data, measurements, observations, and descriptions about the influence of board and operational governance on the firm's sustainability and financial performance.

Finally, this dissertation adds to the body of literature regarding the impact of workforce practices on corporate sustainability (e.g., Dal Maso et al., 2020; McCarty, 2011; Nisar et al., 2022). This

literature mainly focuses on the impact of workforce practices on sustainability frameworks, with a focus on the contribution of organizations to sustainability, whereas this dissertation shows that workforce practices can affect not just firms' sustainability frameworks, but also their sustainability performance. Different approaches have been taken to explain how workforce practices contribute to sustainability performance, some have focused on the diversity and opportunity in the workforce (e.g., Armstrong et al., 2010; Beji et al., 2021; Ghaleb et al., 2021; Hansen and Seierstad, 2017), employment quality (e.g., Gallie, 2007; Savitz, 2013; Wiengarten et al., 2017), health and safety requirements (e.g., Johanson et al., 2022; Vujica Herzog & Harih, 2020), whereas some approaches have focused on how training and development opportunities at the workplace contribute to sustainability performance (e.g., Birou et al., 2019; Bluff, 2019; Scheel et al., 2014). Therefore, this dissertation's contribution to the literature is its demonstrated ability to move beyond integrating sustainability frameworks and empirically test the impact of workforce practices on the firm's sustainability performance.

The overall contribution of this dissertation is to present evidence that firms that integrate sustainability into their business practices could distinguish themselves by fostering a governance structure that, in addition to positive environmental and social impacts, yields a sustained competitive advantage.

1.6 Organization of the Thesis and Sub-Research Questions

This dissertation is organized as follows. Chapter 1 serves as an introductory chapter that highlights the primary goal of this dissertation, research gaps, theoretical framework, the importance of this dissertation, and finally an overview of the organization of this dissertation.

Chapter 2 systematically documents the extent to which various corporate governance mechanisms mediate the relationship between sustainability and the financial performance of firms. This chapter consolidates the existing knowledge and frameworks in which governance and sustainability research intersect and draws on corporate governance literature to offer a holistic viewpoint on “which” and “to what extent” do governance mechanisms affect sustainability and financial performance of firms. Specifically, this chapter seeks to answer the question, *which and to what extent do governance mechanisms affect sustainability and financial performance of firms?* This chapter employs an integrated theoretical approach that enables a complete evaluation of firms' governance mechanisms and generates a valuable critique of firms' sustainability and financial performance. To this end, a scoping review is conducted, which is suitable for heterogenous research types and presents an

overview of the available knowledge on various governance mechanisms mediating firms' sustainability and financial performance. Initially 990 studies were identified through database searching. The number of studies left after title/abstract screening was 352. After full text screening, 271 studies were deemed eligible. Finally, following the inclusion-exclusion criteria, 91 studies were selected for the review. The time-period selected for the scoping review was 2016 to 2022.

Chapter 3 takes a closer look at governance mechanisms that influence the sustainability and financial performance of firms in Canada. This chapter empirically tests the mediating effect of board and operational governance mechanisms in the relationship between sustainability and financial performance of large and actively traded Canadian firms listed on the Toronto Stock Exchange. This chapter primarily focuses on the social and environmental aspects of implementing the concept of corporate sustainability performance and examines the role that governance practices play in the relationship between a firm's sustainability and financial performance. The study contributes to the recent call for sustainability research that considers advances in sustainability literature, two essential governance components, and financial performance, as well as their interactions. In this study, the question is, *what is the role of governance practices in the relationship between a firm's sustainability and financial performance?* The research model has seven hypotheses to examine governance practices in firms' sustainability and financial performance, with an emphasis on direct, indirect, and mediating effects. This chapter primarily focuses on the social and environmental aspects of implementing the concept of corporate sustainability performance and examines the role that governance practices play in the relationship between a firm's sustainability and financial performance. The study contributes to the recent call for sustainability research that considers advances in sustainability literature, two essential governance components, and financial performance, as well as their interactions. For this quantitative study, structural equation modeling is performed using SmartPLS software. Structural equation modeling is made up of two models: a measurement model and a structural model. The measurement model determines the reliability and validity of data constructs by examining construct reliability and convergence validity. The structural model tests all the hypothetical dependencies using path analysis. A representative sample of 224 actively traded Canadian firms listed on the Toronto Stock Exchange was used. The data was collected from Refinitiv database for governance, environmental and social scores for the year 2022. Annual financial reports were used to collect the financial performance of firms for the year 2022.

Chapter 4 broadens the range of the existing literature on corporate sustainability and uses the organizational perspective to examine the impact of workforce practices on firms' environmental and social performance. This chapter conducts an empirical test to examine how workforce practices affect the environmental and social performance of firms. Financial performance acts as a mediator in the impact of workforce practices on environmental and social performance of firms. Firm age has a moderate influence on the mediation relationship. The research question of this study is: *How can firms adapt different workforce practices in different contexts to achieve better environmental and social performance?* Two research models are presented in this study, one focusing on environmental performance and the other on social performance of firms. This research marks the first empirical study to differentiate workforce practices into separate yet related bundles and offers firms the chance to select the right mix of workforce practices for their sustainability performance. For this study, statistical modeling is used to extract meaningful information from data and test hypotheses. Statistical modeling is made up of two steps: a descriptive statistic and linear regression analysis. Descriptive statistics are completed to check the quality of the data and to understand correlation between variables. The linear regression analysis determines which workforce practices are most important in predicting firms' sustainability performance and identifies any potential interactions between the variables in the model. A representative sample of 224 actively traded Canadian firms listed on the Toronto Stock Exchange was used. The data was collected from Refinitiv database for workforce, environmental and social scores for the year 2022. Annual financial reports were used to collect the financial performance of firms for the year 2022.

Chapter 5 summarizes the outcomes of this dissertation and reflects upon the contributions to theory, literature, and industry practices, while providing avenues for future research.

Chapter 2

Scoping the Mediating Role of Corporate Governance on the Relationship between Sustainability and Financial Performance of Firms

Abstract

Corporate sustainability is becoming pervasive, resulting in the intertwining of governance mechanisms at the organizational level, which is ultimately responsible for sustainability and the financial performance of firms. The objective of this study is to systematically document the extent to which various corporate governance mechanisms mediate the relationship between sustainability and the financial performance of firms. Following a scoping review approach, this paper analyzes a final sample of 91 studies for the period 2016–2022. Drawing from the cluster analysis technique, this paper identifies three focus areas: 1) board-level governance, 2) operational-level governance, and 3) assurance-level governance. The results suggest that these governance mechanisms have become increasingly significant for firm performance. In addition to consolidating the existing knowledge and frameworks in which governance and sustainability research intersect, the findings yield policy implications for firms seeking to integrate sustainability into their operations. This study contributes to the literature by being the first of its kind to systematically document the mediating role of governance on the relationship between sustainability and the financial performance of firms. It concludes that though existing literature provides a good overview of emerging governance strategies in relation to firm performance, there is a need for more deductive evidence in the literature.

Keywords: corporate governance, corporate sustainability, financial performance, sustainability performance

2.1 Introduction

Corporate sustainability (CS), the control mechanisms that safeguard the interests of shareholders and other stakeholders (Daily et al., 2003) has gained considerable importance as firms commit to measuring and reporting their sustainability performance, understanding interconnectedness (i.e., economy, society, and environment) and equitably allocating resources (Hawken, 1994). Dyllick & Hockerts (2002, p.131) define CS as “meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.) without compromising

its [a corporate firm's] ability to meet the needs of future stakeholders as well." This implies that business processes must be considered cyclical rather than linear, such that one firm's waste must become another firm's resource (Capra & Pauli, 1995).

Over the past few decades, CS has become more central to business practices from not only an idealistic standpoint but also regarding the financial bottom line, legal performance, competitive positioning, and the overall long-term future of corporate firms (Schaltegger & Wagner, 2017). Specifically, factors such as climate change, the evolution of legal tools like executive compensation, and the increased public interest in sustainability have placed a greater demand on firms to act more sustainably (Porter & Kramer, 2011). In response, CS has evolved immensely over time, with firms now exploring ways to generate sustainable long-term results while satisfying diverse stakeholders and working towards the greater good for their business, the environment, and the community (Bansal & Song, 2017). As such, firms seek to integrate sustainability into their business strategy while creating opportunities to pursue innovation and create value in corporate design processes (McDonough & Braungart, 2002).

Governance processes have also transcended product redesign to the reimagining of business processes for holistic change (Raworth, 2017). The parallel evolution of governance has created mechanisms to monitor corporate actions and create business strategies that consider all aspects of sustainability (Werbach, 2009). Firms seeking to integrate sustainability into their corporate activities must engage in strategic decision-making at the organizational level (Bonn & Fisher, 2011) and adopt new processes to transform their relationships with the environment and society (Domingues et al., 2017).

A wide range of case studies shows the connection between sustainability-focused corporate governance (CG) and the financial performance of firms (Aguilera et al., 2021; Aragon-Correa et al., 2015). A good example of effective CG at play is the case of Unilever, the global consumer goods firm, which strategically created Unilever's Sustainable Living Brands. These Sustainable Living Brands have grown faster than other aspects of the business and contributed significantly to the company's recent growth (Eccles et al., 2014). On the other hand, corporate managers may not always act in the best interest of the stakeholders, as is evident in the Volkswagen emissions scandal (Rhodes, 2016). In 2015, the United States (US) Environmental Protection Agency (EPA) issued a notice of violation

against Volkswagen for deliberately circumventing vehicle emissions testing. Consequently, the share price of Volkswagen fell significantly, causing a crisis in the automotive sector.

As such, CG may be either beneficial or detrimental to sustainability and shareholder value. Where effective, CG mechanisms can protect the social and environmental aspects of business activities from opportunistic behaviors (Wu & Zhou, 2022) while fostering firms' sustainability activities. This can in turn enhance corporate performance and shareholder value (Fernando et al., 2019). CG practices can also enhance business performance (Park & Berger-Walliser, 2015), attract interest from shareholders (Konadu et al., 2021) and provide a competitive advantage (Rabaya & Saleh, 2021). Considering this, there is a need for a deeper understanding of the seemingly anecdotal relationship between corporate governance and firm performance. A systematic analysis of this relationship can help guide more precise corporate decision-making.

2.1.1 Background

The concept of corporate sustainability (CS) focuses on the environmental and social aspects of sustainability (Santoyo-Castelazo & Azapagic, 2014). While environmental sustainability focusing on creating operational efficiencies that leave a minimal ecological imprint (McDonough & Braungart, 2013), social sustainability focuses on the creation of equal opportunities for workers, suitable working conditions, health and safety, and fulfilling social projects (Epstein, 2017). The interaction between the environmental and social aspects of sustainability helps firms to sustain their operations and relationships with various stakeholders in ever-changing market dynamics (Trancoso, 2021).

Thus, the construct of corporate sustainability performance (CSP) aims to integrate both the social and environmental aspects of CS. Van Marrewijk (2003, p.102) defines CSP as “demonstrating the inclusion of social and environmental concerns in business operation and in its interactions with stakeholders.” Based on this perspective, the CSP of a firm integrates the complex web of environmental and social challenges in its business operations while achieving higher financial performance. CSP supports an integrated focus on firm performance criteria (Otley, 2001), bringing positive changes to organizational processes, and transcending profit maximization to a broader inclusion of sustainability. Firms with effective organizational controls are better prepared to set their performance goals and are more diligent in monitoring their corporate activities (Amaratunga & Baldry, 2002).

To meet the interests of shareholders as well as other stakeholders, it is important to align sustainability-focused governance activities with those firmly focused on firms' financial profit and growth (Bansal & DesJardine, 2014). To achieve this, sustainability goals must be embedded in a firm's strategic business plan (Labuschagne et al., 2005). The integration of sustainability into business strategies also requires an effective performance measurement system (PMS) to track firms' progress in this regard (Gond et al., 2016). CG thus extends beyond capitalizing on the economic well-being of shareholders (Scherer & Palazzo, 2011).

In practice, however, integrating sustainability into business practices can be challenging and requires clarity on which sustainability metrics are relevant to the business's brand, values, and strategic goals. Therefore, despite its significance, firms continue to struggle to develop a consensus framework for measuring and managing CSP (Gond et al., 2016). Often, firms may adopt models and frameworks proposed by specialized agencies such as the Dow Jones Sustainability Indices (DJSI) and the Global Reporting Initiative (GRI) (Antolín-López et al., 2016). Firms may also develop tailored models to measure their CSP (Zellweger et al., 2013), most of which are grounded in the Triple Bottom Line (TBL) concept (Elkington, 1998). The TBL concept suggests that firms' business performance should be based on three pillars: economic, environmental, and social. This concept allows a firm's stakeholders to look beyond their traditional financial success metrics (Hahn et al., 2015).

The varying approaches to sustainability adoption and measurement also suggest a lack of rigor and comprehensiveness in the field, as is evidenced by a wide range of cases where firms only choose the sustainability characteristics pertinent to their situation (Al-Shaer & Hussainey, 2022). Therefore, on one hand, firms need appropriate organizational frameworks to follow and track sustainability and financial performance. Examples such as the Volkswagen scandal and the Unilever case study reinforce the link between CG and financial performance, especially in today's climate. On the other hand, the relationship between CG efforts aimed at sustainability and financial performance remains a black box, unable to inform effective business decision-making with the rigor required for such consequential decisions.

As these anecdotal case studies also suggest, the existing literature is replete with examples on polar ends of the spectrum, which, while informative and inspirational/detering, are difficult to apply realistically. This complicates the process for firms to identify crucial aspects of corporate governance and determine how to direct their limited resources towards achieving the most optimal results. This

paper aims to move the discourse on sustainability-related CG and firm performance by introducing more analytical considerations of the links between these two important aspects of business operations. Below, the theoretical perspectives that have informed the two concepts are discussed, illustrating the gaps in the discourse that this study seeks to fill.

2.1.2 Theoretical Perspectives and the Role of Corporate Governance

The role of governance in sustainability and the financial performance of firms is a topic of interest for many researchers (Naciti et al., 2021). Corporate governance (CG) is defined as a set of organizational rules and control mechanisms that guide managers to fulfill the interests of shareholders and other stakeholders (Cadbury, 1993). Conventionally, CG is construed as a governing code intended to safeguard shareholders' investments from opportunistic managers (Naciti et al., 2021). However, CG is increasingly used to examine diverse stakeholder interests, and is often developed in response to the relationships between shareholders and other firm stakeholders (Lee et al., 2022) and the rights and responsibilities among these stakeholders (Ditlev-Simonsen & Midttun, 2011).

CG may also be viewed from an Agency Theory perspective, which focuses only on shareholder returns (e.g., Jensen & Meckling, 1976). There could be potential disputes between shareholders and managers due to differing interests and information asymmetry. Hence, the role of CG could be used to alleviate managerial opportunism and align manager-shareholders' interests. This perspective generally takes a narrower approach to capitalism and may not fully integrate sustainability into a firm's business strategy. Yet, it remains critical to understand how agency conflicts on sustainability issues can be resolved effectively.

Since Agency Theory is grounded in the assumption of managerial opportunism and a potential conflict between manager-shareholders' interests (i.e., principal-agent problem), Stakeholder Theory instead considers the interests of shareholders and other stakeholders for economic, social, and environmental factors to achieve organizational success. However, this perspective can be seen as complementary to Agency Theory, in that manager interest may or may not be based on maximizing the social and environmental performance of firms.

Institutional Theory offers another theoretical perspective that can be used to explore the effectiveness of CG mechanisms in adopting pro-sustainability decisions (Aguilera & Jackson, 2003). Institutional pressures motivate firms' decisions pertaining to environmental and social sustainability (Aguilera-Caracuel et al., 2013; Berrone et al., 2013). Firms that encounter normative pressures

regarding sustainability issues are more expected to participate in sustainability practices to avoid penalties and standardize their sustainability performance.

While various theoretical perspectives are evident in the existing literature, the three above demonstrate how CG has evolved from a focus on the asymmetry between manager and shareholder interests, with a narrow focus on profit, to a broader set of stakeholder relationships. With this broader perspective, too narrow of a focus on profit may jeopardize the company's brand and legal wellbeing if other stakeholder concerns are compromised. This suggests a need to reframe stakeholder interests beyond short-term profits to long-term sustainability, while also redefining managerial opportunism, beyond the concealment of profits to the concealment of information on the firms' social and environmental performance.

In recent times, scholars have drawn attention to this gap in understanding the practical relevance of these concepts. Aguilera et al. (2007) noted that the relationship between CG and corporate financial performance (CFP) can be complex and unclear and suggests the need for a multilevel theory to capture how corporate social responsibility may impact CFP. This is also echoed in Eccles et al. (2014), who while exploring the connections between both concepts, also note that these relationships are complex. Jamali et al. (2008), Jo et al. (2011), and Lins et al. (2017) also espouse the same thoughts. To complement these deductive concepts, this paper will use an inductive approach to understand and clarify these concepts in today's corporate environment, thus paving the way for more precise framework-building and decision-making.

2.1.3 Problem Statement and Research Questions

The progression of CG, on the one hand, and sustainability, on the other, is repeatedly referenced in the existing literature. However, there is a gap in the literature on corporate governance on firms' sustainability performance, primarily exploring how and to what extent effective CG mechanisms help firms achieve their sustainability goals and improve their financial performance. This paper aims to systematically examine if and to what extent various CG mechanisms mediate the relationship between sustainability and the financial performance of firms. The intent of this paper is not to assess the connection between sustainability and financial performance but to seek a higher level of precision by identifying the CG mechanisms that affect a firm's ability to achieve its sustainability targets and ultimately ensure higher financial performance.

To this end, we conducted a scoping review of CG in the context of the CSP-CFP relationship. This scoping review considered research articles from 2016–2022. This time frame was chosen due to the significant increase in literature on this topic during this seven-year period. This paper answers the following research questions: (1) Which CG mechanisms mediate the relationship between sustainability and the financial performance of firms? and (2) to what extent do these CG mechanisms affect sustainability and the financial performance of firms?

Theoretically, this paper draws on CG literature to offer a holistic viewpoint on “which” and “to what extent” firms are integrating sustainability into their core strategy while attempting to improve their overall financial performance. By exploring which” and “to what extent” various business control mechanisms have influenced the CSP-CFP relationship, this study 1) presents a unique cluster analysis based on the extant literature to capture the current state of knowledge, 2) identifies CG impacts on sustainability and financial performance of firms, and key gaps within the existing literature, and 3) expands on existing knowledge of CSP-CFP links through effective CG mechanisms to explore further opportunities in this research field.

This paper is arranged as follows: Section 2 presents the methods, including search strategies and classification criteria. Section 3 presents the results and analysis, including cluster identifications. Finally, Section 4 covers the discussion around key focus areas, the path of future research and policy implications.

2.2 Materials and Methods

This paper systematizes the current literature on CG mechanisms focused on sustainability and their relationship with the performance of firms using bibliometric analysis. The scope of this study is organized through mapping concepts in the fields of CG and CS, involving the explanation of reporting strategies and step-by-step worksheets to safeguard the clarity, consistency, and repeatability of methods. This paper followed the five-step process articulated by Arksey & O’Malley (2005), including 1) classifying the scope of research on CG and CS; 2) scale identification with the help of item generation, refining the content and analysis of the preliminary data; 3) identifying relevant papers which match the inclusion-exclusion criteria; 4) data extraction including the descriptive summary of the results; and 5) reporting the findings and implications for future research. By exploring “how” and “to what extent” various CG mechanisms have influenced the CSP-CFP relationship, this paper

attempts to understand the antecedents and determinants in this relationship and thus make precise recommendations for future research directions on this topic.

2.2.1 Search Strategies

The search strategy included the classification of pertinent research content (i.e., peer-reviewed articles), which was defined and delimited. The literature on CG mechanisms concerning the sustainability and business performance of firms was restricted to scientific journals. Then, the content analysis was performed using key terms in those journals (Dixon-Woods et al., 2006). Key terms were used for the search in abstracts, titles, and keywords. The Boolean operators were used, allowing the formation of a distinct search algorithm in the following way:

TS = (“sustainability* performanc*” OR “sustainability* dimension*” OR “environ* performanc*” OR “environ* ind*” OR “environ* dimensio*” OR “socia* performanc*” OR “socia* ind*” OR “socia* dimensio*”) AND TS = (“financi* performanc*” OR “financi* ind*” OR “financi* dimension*”) AND TS = (“compan*” OR “firm*” OR “organization*” OR “business*”) AND TS = (“corpor* govern*” OR “board” OR “director” OR “manage*” OR “institu*govern*” OR “assurance”) AND TS = (“stakeholder theory” OR “stewardship theory” OR “agency theory” OR “resource*depend*theory”)

Four clear boundaries were defined:

1. The analysis included mainly peer-reviewed articles in English with an emphasis on governance and sustainability.
2. Only articles that empirically integrate sustainability into a firm’s business strategy were considered. The relevant literature was identified based on empirical research and not conceptual research to understand sustainability and the financial performance of firms.
3. Articles that focused on the traditional financial performance of firms but did not consider economic sustainability were not identified as relevant literature and were excluded from the analysis.
4. Empirical studies that were restricted to certain geographic markets and not generalizable were excluded, as they did not contribute to the integration of sustainability into the financial performance of firms at large.

Using three scientific databases (i.e., Science Direct, Scopus, and Web of Science), the initial search consisted of terms within the categories of “business,” “management,” “environmental studies,” “governance,” “environmental sciences,” “business finance,” and “sustainability.” This led to 990 peer-reviewed articles published between 2016 and 2022 being retrieved from the three databases. The preliminary vetting and elimination of duplicate articles left 271 articles for consideration. After applying the inclusion-exclusion criteria, the final data set comprised 91 articles. Figure 2.1 (below) illustrates the screening process.

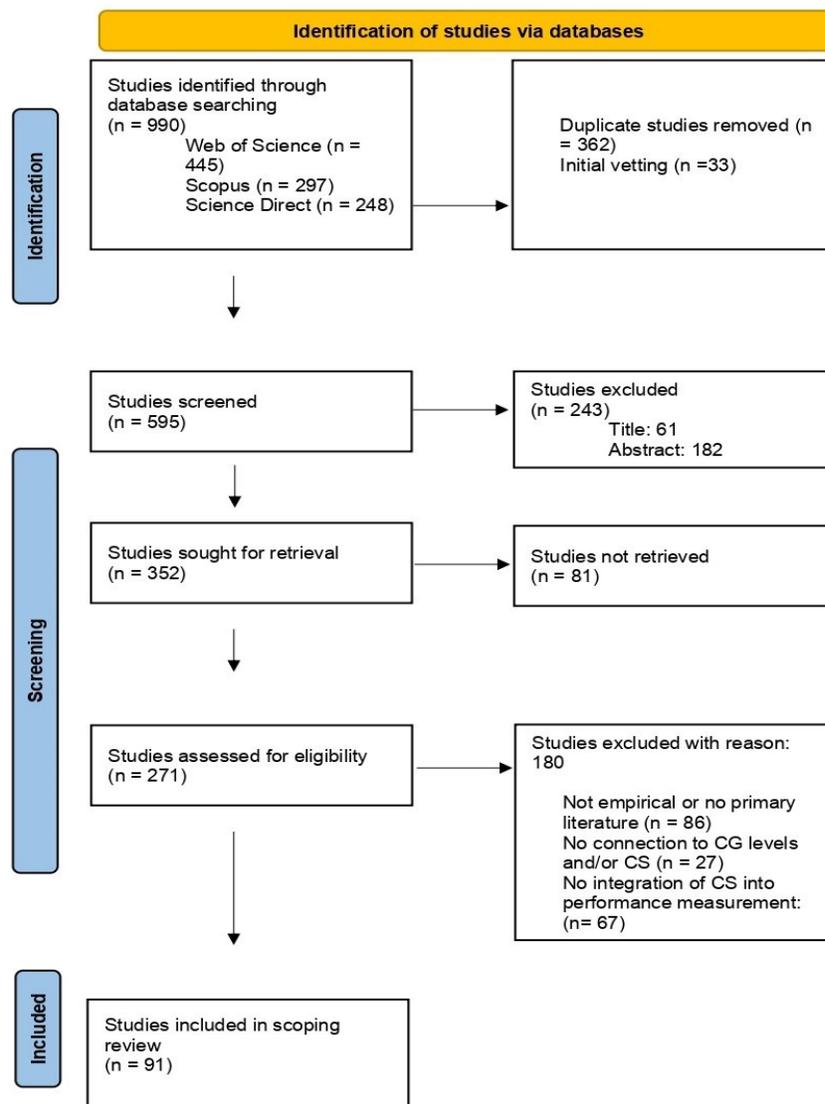


Figure 2.1: Flowchart of Record Identification and study selection

2.2.2 Classification Criteria and Synthesizing the Literature

After the identification of studies, the classification of the selected literature was conducted. The primary CG constructs mediating the CSP-CFP relationship were coded in this step while the selected studies were reviewed. This paper used NVivo 12 to synthesize the literature and visualize the data (i.e., encoding and organizing analytical categories into a hierarchical structure). VOSviewer 1.6.18 was then used to analyze the data co-occurrence and cluster identification. Here, the co-occurrence of keywords was analyzed by building keyword tree node structures. This approach helped to identify various CG mechanisms to assess the CSP-CFP relationship. When constructing the cluster maps, the association strength normalization technique was used by merging small clusters using the minimum cluster size filter (Eck & Waltman, 2009). Drawing from the cluster identification, the analytical review was then completed for assessing the impact of the selected body of literature.

2.3 Results and Analysis

This section first discusses a general overview of the studies gathered, followed by the categorization and coding of the identified studies. Drawing on this coding, several structural dimensions were identified, including CG at various organizational levels, theoretical perspectives, and performance indicators. The last part of this section discusses cluster analysis, which was performed to identify key structures within the data.

2.3.1 Distribution of Studies per Year

When analyzed by year, the results show a substantial increase in interest in this research topic since 2016. The trend also highlighted that more papers were published in recent years, as shown in Figure 2.2.

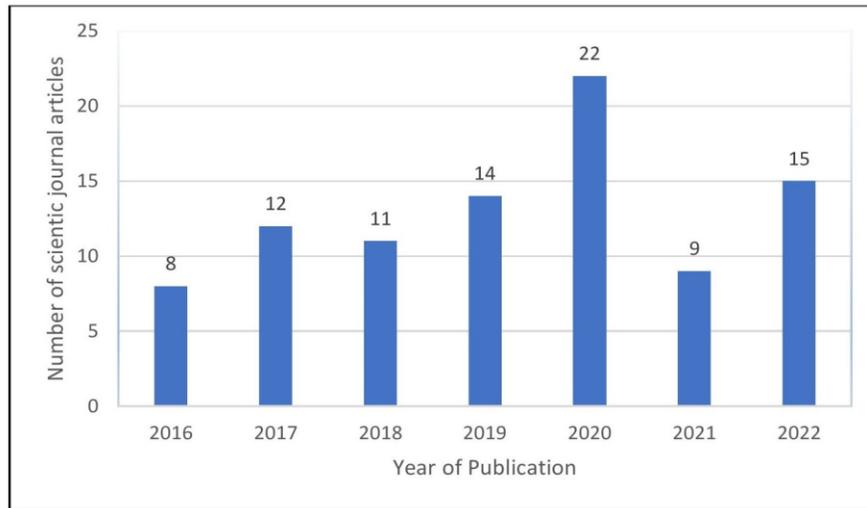


Figure 2.2: The distribution of articles per year

2.3.2 Distribution of Studies by Country

The findings of this study showed that the data were geographically diverse. There were 69 papers (76%) representing developed economies and 22 papers (24%) representing developing economies. The high degree of geographic disparity was mainly dependent on more sustainability activities of firms in the developed economies. The results of this paper showed that the United States has the greatest number of articles, followed by China, the UK, and Italy, as shown in Figure 2.3.

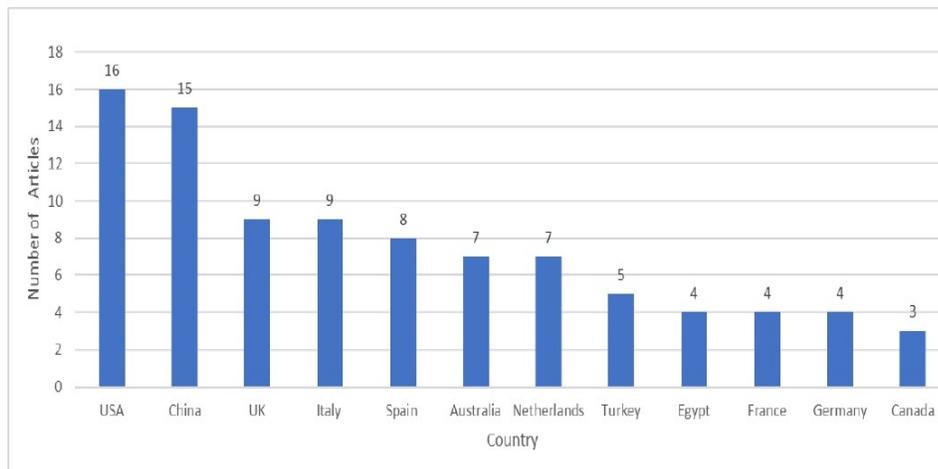


Figure 2.3: The distribution of articles per country

2.3.3 The Building Blocks of the CSP-CFP Relationship

This paper focuses on the mediating role of various CG mechanisms in the CSP-CFP relationship. In the first step, various CG constructs were identified in the body of literature, attributed to the fact that potential CG mediators may have varied impacts depending on how CG constructs mediated the CSP-CFP relationship. From a meticulous assessment of the literature, three levels of CG were coded: board-level governance, operational-level governance, and assurance-level governance. This paper also found that the choices of CG constructs used to operationalize the CSP-CFP relationship were grounded in different theoretical perspectives, for example, Agency Theory, Stakeholder Theory, Institutional Theory, etc. This paper also found performance indicators exclusively measuring the mediating effect of CG mechanisms on the CSP-CFP relationship. Table 2.1 outlines the classification of the papers incorporated in the review.

Table 2.1: Classification of Papers

CG Dimensions	Description	Mediators	Theoretical Perspectives	Key Performance Indicators	Studies
Board-level Governance	The effectiveness of boards and characteristics of their composition on the sustainability and financial performance of firms	Board Independence	Agency Theory - <i>Potential disputes between shareholders and managers because of differing interests and information asymmetry</i>	Environmental and Social Sustainability Indicator	Aksoy et al. (2020); Aladwey et al. (2022); Alipour et al. (2019); Cucari et al. (2018); Cui et al. (2020); Disli et al. (2022); Hussain et al. (2018); Naciti (2019); Omran et al. (2021); Pant & Nidugala (2022)
		Board Size		Environmental and Social Sustainability Indicator	Kaymak & Bektas (2017); Koh et al. (2022); Kumari et al. (2022); Lin & Nguyen (2022); Masoud & Vij (2021); Masud et al. (2018); Muñoz (2020); Pasko et al. (2022); Uyar et al. (2021); Vecco et al. (2021)
		Board Gender		Environmental Indicator	Arayakarnkul et al. (2022); Bristy et al. (2021); Carmo et al. (2022); Cordeiro et al. (2020); Elmagrhi et al. (2019); Islam et al. (2022); Lu et al. (2019); Manita et al. (2018); Zaid et al. (2020); Zhu et al. (2022)
		Board Authority		Social Sustainability Indicator	Chams & García-Blandón (2019); Haladu & Salim (2016); Helfaya & Moussa (2017); Linh-TX et al. (2021); Mbo & Adjasi (2017); Pearce & Patel (2018); Peng & Zhang (2022); Rao & Tilt (2016); Sarhan & Al-Najjar (2022); Yakob & Abu Hasan (2021);
Operational-level Governance	Firms' operational effectiveness in terms of strengthening CSP-CFP relationships	Product Design	Stakeholder Theory - <i>Interests of shareholders and other stakeholders for economic, social, and environmental reasons to achieve organizational success</i>	Environmental Indicator	Badurdeen et al. (2018); Cheng (2020); Kennedy et al. (2017); Li et al. (2016); Maletič et al. (2016); Morioka & Carvalho (2016); Petersen (2021); Schöggel et al. (2017); Shahzad et al. (2020); Villena et al. (2021)
		Business Process Improvement		Environmental and Social Sustainability Indicator	Agyabeng-Mensah et al. (2020); Bojnec & Tomšič (2021); Chkanikova & Kogg (2018); Chu et al. (2019); Khorram Niaki et al. (2019); Shafiq et al. (2017); Singh & Vinodh (2017); Sudarto et al. (2017); Wen et al. (2022); Wiengarten et al. (2017); Zhang (2022)
		Resource Efficiency		Environmental Indicator	Al-Minhas et al. (2020); Bergmann et al. (2017); Jiang et al. (2021); Koh et al. (2022); Koh et al. (2016); Kwon & Lee (2019); Sharma et al. (2020); Sueyoshi & Goto (2019); Xia et al. (2020); Yang et al. (2020)
Assurance-level Governance	The role of assurance service providers on the CSP-CFP relationship	Audit Committees	Institutional Theory - <i>The effectiveness of regulatory and normative pressures in adopting decisions that promote business success</i>	Environmental and Social Sustainability Indicator	Appuhami & Tashakor (2017); Buallay & Al-Ajmi (2020); Buertey et al. (2020); Chintrakarn et al. (2016); Garcia et al. (2018); Handayati et al. (2022); Pucheta-Martínez et al. (2019); Raimo et al. (2021); Rawi & Muchlish (2022); Tumwebaze et al. (2022)
		Assurance Experts		Environmental Indicator	Al-Shaer & Zaman (2019); Aureli et al. (2020); Braam et al. (2016); Dutta (2020); Garcia-Sánchez et al. (2019); Braam & Peeters (2018); Martínez-Ferrero & García-Sánchez (2017); Reimsbach et al. (2018); Rossi & Tarquinio (2017); Sheldon & Jenkins (2020)

2.3.4 CG Dimensions

The distribution of the scientific journal articles based on various CG dimensions is shown in Figure 2.4. In 44% of the cases (40 articles), the firms' sustainability and financial performance were observed while considering the effectiveness of boards and the characteristics of their composition. A large number of papers discussed how gender parity at the board level addressed various social and environmental issues (Araya-karnkul et al., 2022; Bristy et al., 2021; Carmo et al., 2022; Cordeiro et al., 2020; Elmagrhi et al., 2019; Islam et al., 2022; Lu et al., 2019; Manita et al., 2018; Zaid et al., 2020; Zhu et al., 2022). The empirical support was exhibited by focusing on a formative association between female board directors and socio-environmental sustainability. A few papers also discussed the significant role played by independent directors on the board (e.g., Aksoy et al., 2020; Aladwey et al., 2022; Alipour et al., 2019; Cucari et al., 2018; Cui et al., 2020; Disli et al., 2022; Hussain et al., 2018; Naciti, 2019; Omran et al., 2021; Pant & Nidugala, 2022). These papers explored how independent directors addressed agency problems while promoting social and environmental sustainability and achieving higher financial performance. In addition, other papers discussed board authority (e.g., Chams & García-Blandón, 2019; Haladu & Salim, 2016; Helfaya & Moussa, 2017; Linh-TX et al., 2021; Mbo & Adjasi, 2017; Pearce & Patel, 2018; Peng & Zhang, 2022; Rao & Tilt, 2016; Sarhan & Al-Najjar, 2022; Yakob & Abu Hasan, 2021) and board size (e.g., Kaymak & Bektas, 2017; K. Koh et al., 2022; Kumari et al., 2022; Lin & Nguyen, 2022; Masoud & Vij, 2021; Masud et al., 2018; Muñoz, 2020; Pasko et al., 2022; Uyar et al., 2021; Vecco et al., 2021) to examine their effect on the CSP-CFP relationship.

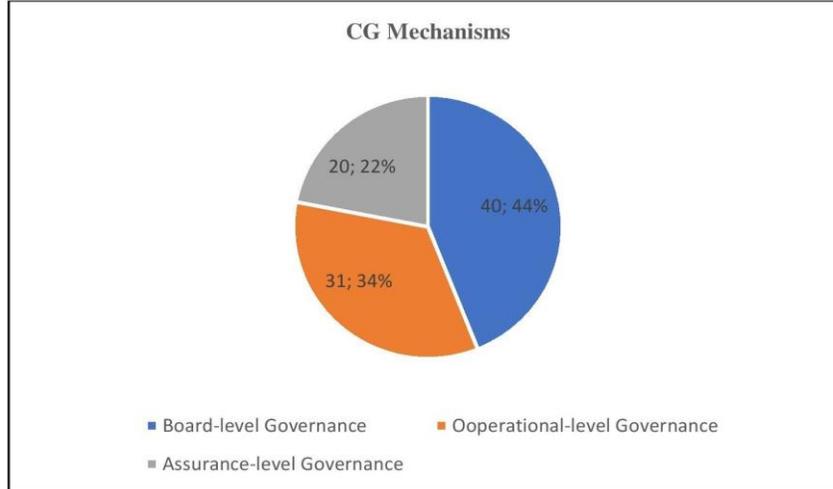


Figure 2.4: The distribution of articles per CG Mechanism

In 34% of the cases (31 articles), the firms’ sustainability and financial performance were observed through their operational effectiveness. Most of these papers discussed proactive firms’ design strategies to transform their business operations (e.g., Badurdeen et al., 2018; Cheng, 2020; Kennedy et al., 2017; Li et al., 2016; Maletič et al., 2016; Morioka & Carvalho, 2016; Petersen, 2021; Schöggel et al., 2017; Shahzad et al., 2020; Villena et al., 2021). Some papers also evaluated the operational excellence of financial intermediaries that embedded sustainability in a firm’s core business strategy (e.g., Agyabeng-Mensah et al., 2020; Bojnec & Tomšič, 2021; Chkanikova & Kogg, 2018; Chu et al., 2019; Khorram Niaki et al., 2019; Shafiq et al., 2017; Singh & Vinodh, 2017; Sudarto et al., 2017; Wen et al., 2022; Wiengarten et al., 2017; Zhang, 2022). Likewise, some papers discussed resource efficiency mediating the CSP-CFP relationship (e.g., Al-Minhas et al., 2020; Bergmann et al., 2017; Jiang et al., 2021; K. Koh et al., 2022; S. C. L. Koh et al., 2016; Kwon & Lee, 2019; Sharma et al., 2020; Sueyoshi & Goto, 2019; Xia et al., 2020; Yang et al., 2020).

Lastly, in 22% of the cases (20 articles), the firms’ sustainability and financial performance were observed while considering assurance mechanisms. Most papers observed how external assurance mechanisms could be effective instruments in improving the credibility of firms’ reporting systems (e.g., Al-Shaer & Zaman, 2019; Aureli et al., 2020; G. J. Braam et al., 2016; Dutta, 2020; García-Sánchez et al., 2019; Geert Braam & Peeters, 2018; Martínez-Ferrero & García-Sánchez, 2017; Reimsbach et al., 2018; Rossi & Tarquinio, 2017; Sheldon & Jenkins, 2020). Some other papers discussed the firms’ tendencies to assure their sustainability reports, impacting their financial

performance (e.g., Dwekat et al., 2022). In other papers, the role of audit committees assuring sustainability reporting, which in turn improved the financial performance of firms was observed (e.g., Appuhami & Tashakor, 2017; Buallay & Al-Ajmi, 2020; Buertey et al., 2020; Chintrakarn et al., 2016; Garcia et al., 2018; Handayati et al., 2022; Pucheta-Martínez et al., 2019; Raimo et al., 2021; Rawi & Muchlish, 2022; Tumwebaze et al., 2022).

2.3.5 Theoretical Perspectives

This review also illustrated how the research context evolved to include various theoretical perspectives, as shown in Figures 2.5 and 2.6. The findings presented the stated theory for each of the 91 papers, from which 53 papers (58%) adopted a single theory as a foundation, 15 papers (17%) used a mix of two or three theories, and 23 papers (25%) did not explicitly state any theoretical framework.

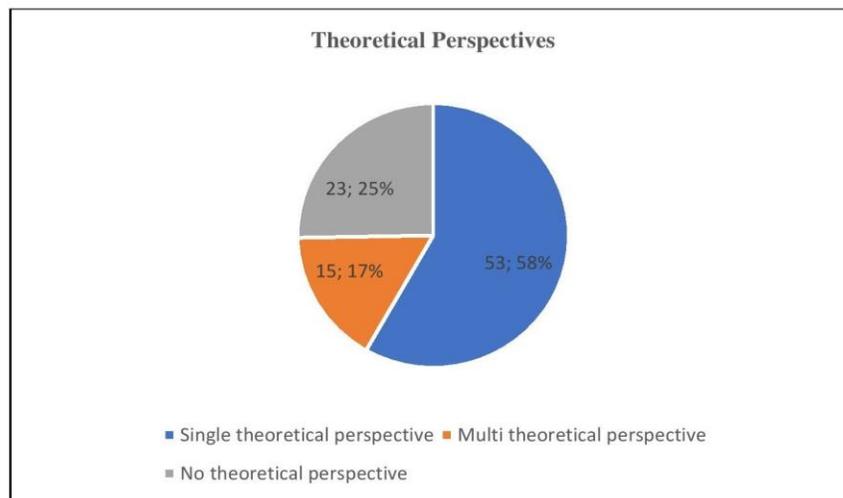


Figure 2.5: The distribution of articles from a theoretical perspective

Agency Theory was the most prominent theoretical framework, featuring in thirty-five articles (38%) connecting CSP and CFP mediated through various CG mechanisms. In second place was Stakeholder Theory, with 21 articles (23%), and in third place was Institutional Theory, with 12 articles (13%). Other theories, such as Resource Dependency Theory, Legitimacy Theory, and Stewardship Theory, were also used in eight articles (9%). Fifteen articles (17%) did not affirm a theoretical perspective.

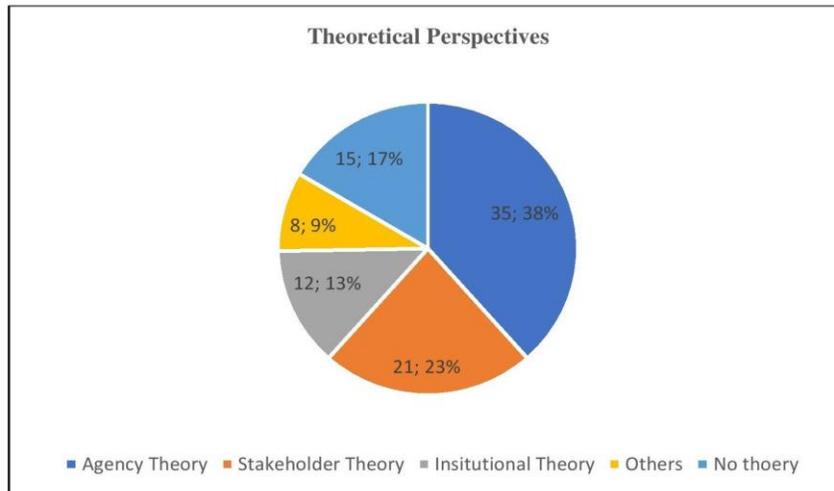


Figure 2.6: The distribution of theories

2.3.5.1 Performance Indicators

Although the general trend of measuring CSP cannot be precisely observed on a common measurement scale, most papers used the necessary weight factors to incorporate sustainability performance indicators in their projected composite index, as shown in Figure 2.7. In terms of adopting a method to measure CSP, 32 articles (35%) focused on both social and environmental sustainability. These articles combined social and environmental sustainability indicators into a common measurement unit, i.e., CSP. 24 articles (26%) considered social sustainability their primary indicator of CSP. In comparison, 35 articles (39%) regarded environmental sustainability as their main method, as these papers focused mainly on environmental protection issues and the use of renewable natural resources to measure CSP.

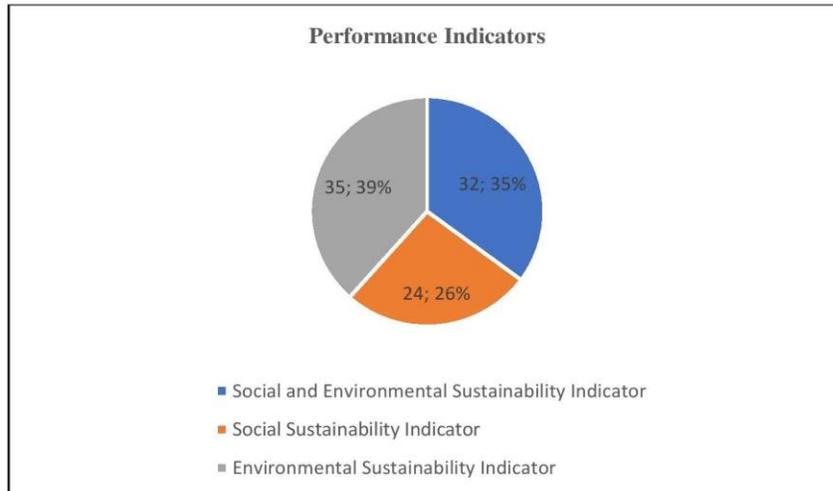


Figure 2.7: The distribution of articles per performance indicator

2.3.6 Cluster Identification

This paper used a cluster analysis technique to identify critical topics in governance and sustainability. VOSviewer 1.6.18 was used to perform cluster analysis based on keywords, titles, and abstracts for more reliable results. The keywords with high weights were counted more heavily than those with low weights, which was helpful in getting an overview of the significant areas of the map for each separate cluster. The minimum number of occurrences of a keyword was 2. Out of 577 keywords, 112 met the threshold. For each of the 112 keywords, the total strength of the co-occurrence links with other keywords was calculated. In the examination, the small clusters were merged, and this paper recognized three closely-knit focus areas colored in red, green, and blue in Figure 2.8.

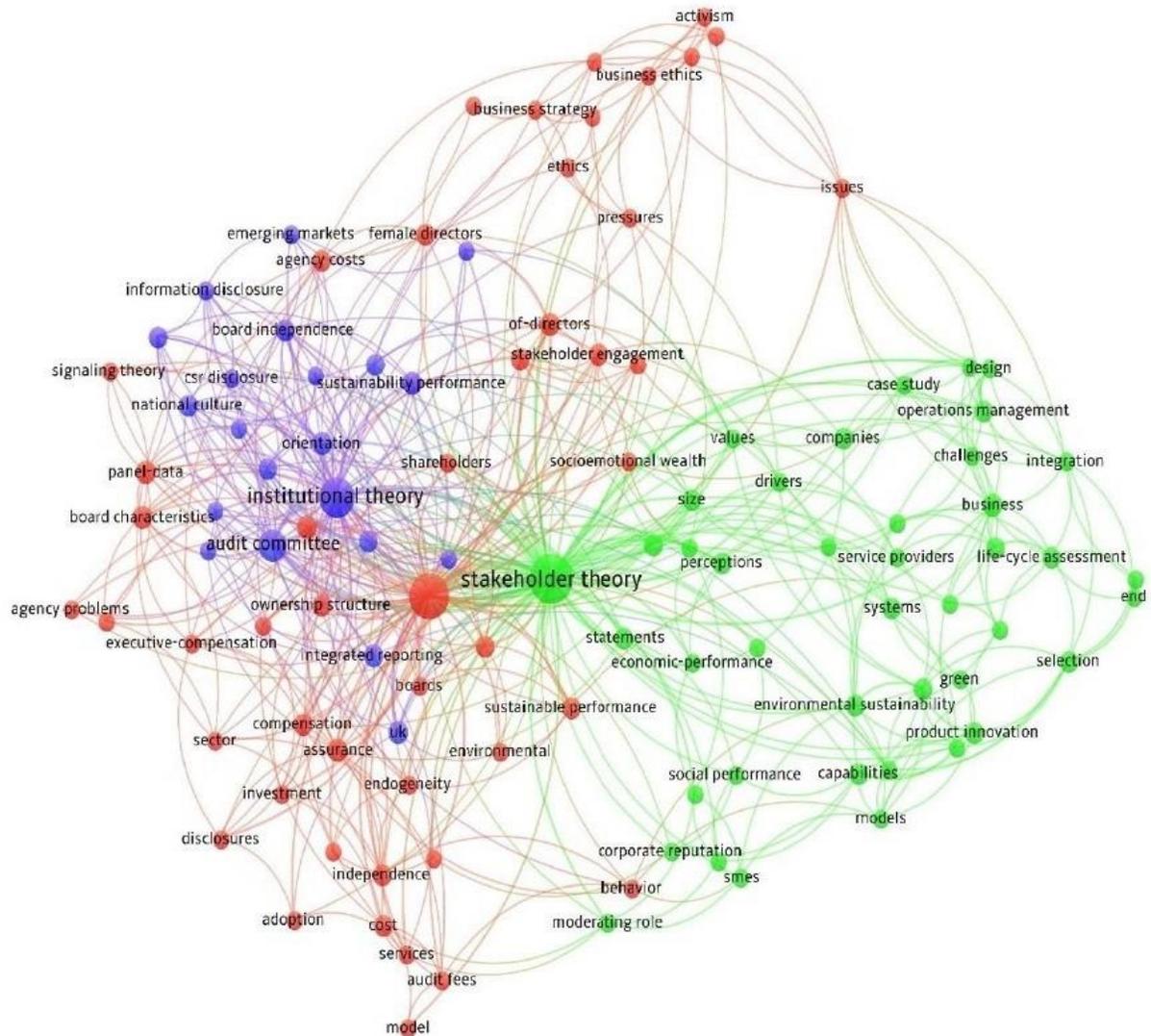


Figure 2.8: Keyword network clustering results

Cluster 1 (red) identified board-level mechanisms as its prominent node and gathered keywords such as gender parity, independent directors, board size, board authority, etc. This cluster primarily featured the Agency Theory and focused on principal-agent associations at the board level of the firm. The central node of Cluster 2 (green) identified firms’ operational effectiveness and gathered keywords such as operational performance, product design solutions, business process improvement, resource efficiency, operational capability, etc. This cluster mainly referred to the Stakeholder Theory and

emphasized the diverse interests of stakeholders for economic, social, and environmental reasons to achieve organizational success. Finally, cluster 3 (blue) had assurance as its central node, focusing on external assurance, internal assurance, sustainability assurance services, audit committee, and other relative phrases. This cluster addressed Institutional Theory and emphasized regulatory and normative pressures regarding sustainability issues.

The cluster analysis results exhibited the extent to which various CG mechanisms had mediated sustainability and the financial performance of firms. Furthermore, these three clusters were generally significant in the theoretical development of CG mechanisms and were critical for their policy impact on integrating sustainability into a firm's business strategy.

2.4 Discussion and Implications for Future Research

Using the cluster analysis, this study elucidates the mediating role of governance on sustainability and the financial performance of firms in three key areas: board-level governance, operational-level governance, and assurance-level governance.

2.4.1 Cluster 1: Board-Level Governance

The red cluster in Figure 2.8 shows the relationship between board characteristics and firms' sustainability and financial performance. This cluster operates mostly from an Agency Theory perspective in which the features of the board directly determine a firm's sustainability performance (Haladu & Salim, 2016; Helfaya & Moussa, 2017), management supervision (Peng & Zhang, 2022; Rao & Tilt, 2016) and information asymmetry issue reduction with the aim of reinforcing the CSP-CFP relationship (Yakob & Abu Hasan, 2021).

This cluster examines various board attributes, predominantly board composition, board gender, and board independence in the CSP-CFP relationship. This cluster has four key findings to highlight how different board characteristics affect sustainability and the financial performance of firms. First, board independence effectively promotes a firm's resources for social and environmental sustainability initiatives. This confirms the arguments of Cui & colleagues (2020) on independent directors' sustainability responsibility, as well as those of Alipour & colleagues (2019) regarding a strong association between board independence and the sustainability performance of firms. This result reveals that independent directors are more involved in fulfilling sustainability obligations, which could improve board management control and improve sustainability and the financial performance of firms.

Secondly, the analysis revealed that board size positively reinforces the CSP-CFP relationship. This confirms the perception that larger boards can enhance panel expertise and, as a result, improve sustainability and the financial performance of firms in line with the findings of Muñoz (2020). This result further illustrates that an experienced board could lessen knowledge disproportionateness and managerial opportunism. This could enhance board policymaking on environmental and social sustainability issues.

Thirdly, board gender imparity or board masculinity negatively mediates the relationship between sustainability and the financial performance of firms, validating the contentions of the more significant impact of material achievement (Zhu et al., 2022) and lowering managers' apprehension regarding sustainability (Bristy et al., 2021). This result implies that managers' quest for their immediate financial interests is enhanced in the presence of a gender-biased board, which in turn diminishes the constructive influence of board independence on executive control and weakens the CSP-CFP relationships.

Lastly, high uncertainty avoidance of a board negatively mediates the relationship between CSP and CFP. This indicates that high uncertainty avoidance could reduce a board's authority in compliance with more controlled and structured processes. This confirms the assertions of Pearce & Patel (2018). In addition, under the direct influence of management, a board is expected to be deferential, which may reduce a board's attention to sustainability matters by lessening its management supervision. This could further weaken the CSP-CFP relationship.

The findings of this cluster extend both practical and theoretical contributions. Theoretically, the cluster refines the relationship between sustainability and the financial performance of firms and identifies the mediating effect of various board characteristics from an Agency Theory perspective. This cluster also emphasizes the significance of CG, which exhibits board characteristics in corporate sustainability practices. The conflicting opinions of independent board directors and the board's expertise could enhance management supervision by reducing concerns about managers' opportunism and lessening information disproportionateness. This strengthens the CSP-CFP relationship. This cluster also explores the relevance of Agent Theory in governance and sustainability research. It exhaustively supports the agency effect of board characteristics in the pursuit of embedding sustainability in the firm's core business strategy.

Practically, the findings imply potential strategies for firms. First, firms should realize the importance of adopting effective CG mechanisms in strengthening the CSP-CFP relationship. Firms should also

deliberate the constructive role of board capability and independent board directors' differing proposals in enhancing this relationship. In this manner, firms can improve their sustainability performance through specific governance standards, such as increasing board independence. The 2015 Volkswagen scandal discussed in the introduction of this paper is a classic case of managers' opportunism. Here, an independent board could have minimized the manager's opportunism issues and ultimately assisted the firm in ethically reporting its emission testing.

2.4.2 Cluster 2: Operational-Level Governance

The green cluster in Figure 2.8 centers on operational efficiencies affecting sustainability and the financial performance of firms. The Stakeholder Theory forms the basis of the existing literature on governance at the operational level. In a stakeholder agency paradigm, managers form an association with shareholders and other stakeholders in performing tasks, including economic, social, and environmental initiatives (Donaldson & Preston, 1995).

This cluster examines the impact of various operational attributes, predominantly product design solutions, business process improvement, and resource efficiency, on the CSP-CFP relationship. This cluster has three key findings. First, firms that focus on their internal changes (i.e., product design solutions) can introduce lean production, reduce emissions, and enhance the capabilities of their workers. This reduces trust asymmetry between management and stakeholders and strengthens the CSP-CFP relationship. This confirms the arguments of Villena et al. (2021) on improving employee-management relationships with lean production and Li & colleagues (2016), who suggest product design solutions as a self-enforcing CG mechanism in addressing environmental and labor issues. This finding is also a critique of Bansal & DesJardine (2014), who suggest that social and environmental performance differ, as the environmental dimension requires technical skills to implement, and the social dimension depends on external stakeholders' interests.

Secondly, this cluster finds that business process improvements strongly influence sustainability and the financial performance of firms, as process improvements are carried out due to various stakeholder governance requirements. Managers align with the business process development, are influenced by environmental and social issues, and adopt new processes from external stakeholders. For example, consumers who prefer green products confirm the arguments of Chu & colleagues (2019), who believe that green customer pressures demand more sustainable observances.

Lastly, this cluster emphasizes that resource efficiency creates a positive impact on sustainability performance, which then leads to higher financial performance. This validates the assertions of Yang & colleagues (2020), who stress material management through the lens of operational effectiveness, and those of Sharma & colleagues (2020), who investigated how resource efficiencies positively impact firms' financial performance.

While most of the papers in this cluster focused on the role of operational efficiencies in generating a valued impact on the sustainability and financial performance of firms, this raises a critical question of accelerating operational processes to strengthen the CSP-CFP relationship. The Stakeholder Theory sometimes questions the roles of managers in reinforcing the CSP-CFP relationship. For example, Schwarzmüller & colleagues (2017) suggest that investors are the main driving force behind stakeholder management. According to Bacha & Ajina, (2020), the role of managers is limited to facilitating sustainability initiatives, and as such, they conduct their activities in a rather opportunistic way. Another limitation observed is that performance indicators usually depend on unique business processes, and these indicators cannot represent the general nature of business processes. For instance, what could have deterred Volkswagen from the unlawful handling of emission testing may not entirely hold for other firms, which use different business processes.

2.4.3 Cluster 3: Assurance-Level Governance

The last cluster (blue) in Figure 2.8 focuses on the role of assurance mechanisms in the CSP-CFP relationship. Most papers in this cluster suggest that two types of service providers drive assurance mechanisms: audit committees and assurance experts. This cluster discusses the impact of assurance mechanisms on various performance indicators. Audit committees and assurance experts have different effects on firms' sustainability and financial performance. On the one hand, audit committees are primarily concerned about the cumulative sustainability dimensions of firms, including environmental and social issues, and monitor the sustainability performance of firms predicting long-term business growth. This reinforces the arguments by Rawi & Muchlish (2022) and Buallay & Al-Ajmi (2020), who suggest that audit committees assure firms' social and environmental performance. This cluster further finds that audit committees are generally inclined to publish separate assurance statements consistent with a firm's sustainability performance, validating Maroun (2020), who links the use of assurance mechanisms for integrated reports.

On the other hand, assurance experts are generally focused on the environmental performance of firms. This cluster implies that assurance experts integrate sustainability reports into a firm's financial statements. This is in line with the findings of Sheldon & Jenkins (2020), who believe that the inclination of assurance experts on the environmental performance of firms may be due to the dominance of environmental metrics. In contrast, there are relatively few social metrics developed.

This cluster mainly uses an Institutional Theory perspective to understand the implications of assurance mechanisms on the CSP-CFP relationship. Institutional structures consider sustainability norms and form relationships among stakeholders in a market economy (Nwoba et al., 2021). This cluster suggests that firms operate under the influence of various institutional aspects, corroborating the rationale for acting homogeneously in a market economy (DiMaggio & Powell, 1983). Most papers in this cluster find that government regulations or voluntary practices are formed with the help of institutional frameworks and subsequently reinforce the CSP-CFP relationship, confirming the arguments of Aureli & colleagues (2020). However, some papers suggest that market pressures influence firms to undertake sustainability initiatives and gain institutional legitimacy (Miller et al., 2017). Nonetheless, the findings from this cluster support the assertion that assurance mechanisms are linked with government regulations or the market economy. As a result, firms may be less motivated to integrate sustainability into their core business strategy where there are weak government regulations or poor market standards.

2.4.4 An Overall Evaluation

Evaluating the literature using a governance and sustainability lens focusing on CG mediators in the CSP-CFP relationship yields varied results. However, it is reassuring that researchers have started considering a more nuanced CG perspective on the CSP-CFP relationship. This may expand the knowledge base significantly and could eventually show steady patterns in the relationship under review, helping to address the question, "Which and to what extent have various CG mechanisms influenced the CSP-CFP relationship?"

However, the research on CG mediators in the CSP-CFP relationship is fragmented. The number of studies examining CG constructs is strikingly low, considering how many studies focus on the CSP-CFP relationship and the fact that researchers have shown interest in a CG viewpoint on this relationship. A few papers examining a specific relationship (e.g., assurance-level governance) are not a critical limitation as such. However, in view of the three primary CG constructs, the selected studies

depend on proxy firms' performance indicators along with the diverse CG mediators (Table 2.1), and the inadequate studies available could be viewed as a critical limitation as they obstruct the comparing of findings across studies and therefore hinder the occurrence of steady patterns.

Despite a broad theoretical consensus among researchers about the importance of effective CG mechanisms in analyzing firms' sustainability and financial performance, practical implications are unclear in various spheres. The available literature which uses a CG lens can be critiqued for three reasons, namely i) identifying a sparsity of mediating factors for the CG-financial performance relationship in the literature and, thus a need to go beyond the traditional mediating factors such as board size and board independence ii) a heavy reliance on Agency and Stakeholder Theory which while relevant limit the room for a holistic and wide-ranging examination of business operations iii) a heavy focus on CG moderators at the expense of mediators, thus limiting the depth of causal explanations available in the literature.

These three findings are discussed in more depth below. Overall, this work provides a robust and much-needed addition to the literature by systematically documenting existing frameworks and indicators and their evolution, thus consolidating the knowledge generated thus far. Furthermore, it identifies critical gaps in the literature, highlighting the need to explore under-researched areas, incorporate diverse theoretical perspectives, and delve deeper into mediating mechanisms in the CSP-CFP relationship. These findings lay the groundwork for future theoretical and practical endeavors that can address these gaps and provide a more comprehensive and nuanced understanding of how corporate governance, sustainability, and financial performance interact in business operations.

2.4.4.1 Lack of Originality

The scoping review of the relevant literature yielded 91 studies focusing on various CG mediators in the CSP-CFP relationship. At the onset, this could seem like a wide selection of papers. However, it becomes evident that despite the various CG mechanisms available, only nine different mediators were studied. Given that this paper identifies only nine distinct mediators, the case seems even worse for firms' performance indicators than for CG mediators. Besides, it is surprising that many CG mediators investigated were of the 'business-as-usual' variety, such as board independence and size. However, to ensure a deeper understanding of the CSP-CFP relationship, there is the need to surpass these 'business-as-usual' mechanisms and examine other CG constructs that could mediate the CSP-CFP relationship. For example, one construct that is severely under-researched is IT governance.

Even with the continued focus on effective IT governance, there has not been enough research on how boards oversee IT to strengthen the CSP-CFP relationship (Sueyoshi & Goto, 2014). So far, little interest has been given to specific business areas mediated through CG mechanisms. This is in line with the findings of this paper, which asserts that the governance and sustainability field mainly draws on two theoretical perspectives, i.e., Agency Theory and Stakeholder Theory— in reflecting the sustainability and financial performance of firms.

However, originality is also lacking in the operationalization of CG constructs. Most papers reviewed concern the board-level governance constructs, with only a few considering operational-level or assurance-level governance constructs. As pointed out at the beginning of this paper, if firms endeavor to integrate sustainability into their corporate activities, there is a need to move towards CS as one integrative term. Likewise, firms must ensure that different CG constructs are mutually supportive in strengthening the CSP-CFP relationship. Therefore, they need to apply similar underlying theories and key performance indicators to transform their relationships with the environment and society.

2.4.4.2 Problems of Theory Building and Theory Confirmation in CG

Agency Theory and Stakeholder Theory are the main theoretical bases of the literature reviewed in this paper (and possibly the broader knowledge base on the CSP-CFP relationship). As depicted in Table 2.1, more than two-thirds of the documents reviewed construct their arguments on Agency Theory and Stakeholder Theory. Admittedly, these theories are the obvious choices since the potential disputes between shareholders and managers, the varying interests of stakeholders, and environmental and social changes are deemed as the critical aspects of CG. However, multiple theoretical perspectives can enable the holistic examination of firms and create a meaningful critique of business operations and management practice (Okhuysen & Bonardi, 2011). Thus, the continued reliance on the Agency Theory and Stakeholder Theory, i.e., their apparent alignment to the research question, hinders the advancement of the CG field in strengthening the CSP-CFP relationship. Both theories are extensively used in the literature. However, as shown in Table 2.1, some studies do not clearly discuss these two theories, but rather form their claims based directly on these theories without considering their appropriateness in the specific use cases. Using these theories in exploring the extent to which CG mechanisms mediate the CSP-CFP relationship is likely to generate the same outcome. As a result, this could hamper further development in this research field.

2.4.4.3 Focus on Moderators Rather than Mediators Affecting the CSP-CFP Relationship

Although many empirical findings on the CSP-CFP relationship are available, most of these studies have concentrated on the moderators, i.e., “what alleviates or reinforces the CSP-CFP relationship,” rather than looking at mediators, i.e., “by what means does CSP affect CFP.” This is evident from the large number of studies initially identified through the database search (i.e., 990 papers). Most of the identified studies focused on moderating variables affecting the dependent-independent variables relationship, e.g., firm characteristics, industry characteristics, business environment, etc. (Grewatsch & Kleindienst, 2017). Very few studies have attempted to examine the causal impact of an independent variable on a dependent variable mediated by a third variable. In other words, the independent variable affects the dependent variable because the independent variable affects the mediator, and the mediator, in turn, affects the dependent variable. Although this paper subsequently distinguishes the potential CG mediators (e.g., board size, assurance experts, etc.) forming an indirect relationship between the CSP and CFP, there remains a lack of focus on measurement and operationalization issues pertaining to CG mediators. Hence, there is a need to generate more in-depth empirical evaluations, which explicitly consider the CG mediators that may influence the CSP-CFP relationship.

2.4.5 Suggestions for Future Research

The two main questions this paper sought to address are (i) Which CG mechanism mediates the relationship between sustainability and financial performance of firms. (ii) How do these CG mechanisms affect firms' sustainability and financial performance? In the context of these research questions and the critical emphasis on CG mediators, examining “by what means does CSP affect CFP” can be considered one of the main issues of strategic management literature. This investigation was necessary given that despite the growing case for sustainability-oriented CG and renowned examples of the failures created due to inadequate CG, it has remained unclear exactly how sustainability-oriented CG impacts financial performance.

The use of a scoping review enabled an exhaustive understanding of the evidence thus far. Figures 2.2 -2.7 map the evolution of global literature on this theme, informing future research with a broad overview of relevant theories and indicators and their relative use over time. Pertinently, it identified Stakeholder Theory and Agency Theory as the key theoretical lenses underpinning the literature in question, suggesting that the addition of other theories may offer great potential for advancing this research area and incorporating more interdisciplinary perspectives. The scoping review also identified

the need for future research to demonstrate how mediating factors (i.e., CG mediators) may influence the CSP-CFP relationship, including the consideration of broader and more interdisciplinary mediators. Based on these findings, the need for more original and interdisciplinary theory building is clear.

The use of a cluster analysis technique to complement the scoping review was valuable in uncovering relationships, similarities and differences among the factors that influence the relationship between CG and corporate financial performance. Indeed, this approach was successful in identifying influential board-level mechanisms, operational factors, as well as assurance and auditing factors, which could influence CG. It was also helpful in identifying mediating factors between sustainability-related CG and financial performance (see Figure 2.8). This complements the more deductive evidence in the literature and adds more precision in future theory development. In addition to examining a wider range of mediators in the CG- financial performance relationship, the identified mediators can inform applied experiments, such as natural experiments, to examine how varying these mediators impacts the CG- financial performance relationship and thus proffer concrete suggestions for firms.

In general, this study has identified the necessity for an interdisciplinary approach to the CG and sustainability nexus, which can improve the precision and utility of knowledge generated.

2.5 Conclusion

This paper conducts a scoping review to identify key focus areas that may improve the knowledge base examining CSP-CFP relationships mediated by various CG mechanisms. This paper has contributed to the existing knowledge by exploring the relationship between CSP and CFP through three distinct lenses: the board level, operational level, and assurance level of governance.

Some key areas need to be more thoroughly considered in existing literature. For example, a deeper cluster analysis linked to assurance mechanisms is still understudied in the current literature. Future papers will need to focus on the impact on the sustainability performance of firms by assurance experts or audit committees. Recent articles addressing sustainability and governance appear to be more attentive to CG mechanisms, such as board characteristics, as shown in Figure 2.8. However, other control mechanisms within the governance framework are either understudied or under-identified. This paper is a starting point for further review to understand the governance and sustainability domains and explore how the interaction between the two could affect the financial performance of firms.

This review identifies a wide array of performance indicators to construct the CSP-CFP relationship. However, these performance indicators' definitions appear inconsistent across different papers, which may hinder the accurate measurement of firms' sustainability and financial performance. Furthermore, this review uses only three databases, thus possibly excluding essential papers. It would be worthwhile for future papers to include other databases and possibly literature in other languages in analyzing the CSP-CFP relationship to ensure a broader range of contexts.

The employment of some non-bibliometric approaches to examine the CSP-CFP relationship is also recommended. The existing literature investigating the nexus between sustainability and the financial performance of firms has generally overlooked the possible issue of endogeneity (Soytas et al., 2019). The excluded variables, measurement error, and reverse causality that set off endogeneity may be the likely causes for the indecisive relationship between CSP and CFP. Future research could focus on the correlation between CSP and CFP while controlling the impact of various CG mechanisms and using endogenous variables.

In summary, this scoping review provides a starting point in investigating the role of CG mediators in the CSP-CFP relationship. To advance the field, a strategic research approach that explores a wider range of theories and analytical models is recommended. By evaluating the extent to which CG mediators influence the CSP-CFP relationship, a more comprehensive understanding of the complex dynamics at play will be gained. This will ensure significant strides in understanding the potential of effective governance mechanisms to develop sustainable and financially successful organizations, as well as inform decision-making, resource allocation, and efforts to advance sustainability globally.

Chapter 3

Does Financial Performance in Firms benefit from Sustainability Performance? The Mediating Effect of Governance on Firm Performance of Listed Firms in Canada.

Abstract

Relying on dynamic agency and stakeholder perspectives as theoretical underpinnings, this paper analyzes the mediating effect of board governance and operational governance in the relationship between sustainability and financial performance of firms. Using a sample of 224 large and actively traded Canadian firms listed on the Toronto Stock Exchange, the authors use the partial least squares-structural equation modeling (PLS-SEM) approach to analyze the data. The results show that there is a good fit between the data for both the measurement and structural equation models, and they further reveal partial mediation effects of board governance and operational governance singly and jointly as full mediation in the relationship between sustainability and financial performance of firms. The results are robust to controlling for various factors that affect firms' sustainability and financial performance, such as firm type, firm age, and other industry-specific characteristics. This study provides valuable insights for corporate governance and sustainability scholars and practitioners that may allow them to link governance structures with sustainability for better financial performance outcomes, as well as to include an integrated sustainability focus into their competitive strategies.

Keywords: corporate governance, corporate financial performance, corporate sustainability performance, board governance, operational governance

3.1 Introduction

Academics have long been interested in corporate governance (CG), as competent management is essentially what makes firms successful (Pasko et al., 2022; Zaman et al., 2022). CG permeates all aspects of business; therefore, governance structures make decisions about corporate sustainability as part of their processes (Cosma et al., 2018). Without a doubt, the interaction between governance and sustainability plays a critical role in determining how well firms function (Bhagat & Bolton, 2008; Michelon & Parbonetti, 2012). This linkage is critical for firms to develop sustainability initiatives.

Firms must define sustainability measures and strategies due to the urgent nature of CG challenges (Sancha et al., 2022). Nonetheless, achieving sustainability goals is not always straightforward, as firms frequently fail to implement their sustainability initiatives. As an example, Volkswagen purposefully interfered with its emissions testing system, switching the engine to a low emission mode, and later ordered the recall of around 500,000 vehicles (Bhaskaran & Bandyopadhyay, 2018). To achieve better environmental and social outcomes, firms must optimize their governance structures, which requires CG to play an essential role in implementing sustainability goals and achieving superior sustainability performance (Dandan et al., 2021). It is unfortunate that there is a lack of research on how CG mechanisms and sustainability goals are reconciled. This paper aims to fill that gap in the research and employs the corporate governance and sustainability (CGS) perspective to investigate this interaction.

As it encompasses both traditional sustainability indicators (i.e., social and environmental) as well as governance elements, the term CGS refers to the financial and non-financial considerations that firms should take into account in the pursuit of sustainability (Bleischwitz, 2007; Phan et al., 2020). CGS performs a variety of activities to address social, environmental, and governance issues, including proposing and updating a code of ethics, evaluating resource allocation, observing business operational activities, and monitoring results of social and economic development (Du, 2018). In addition, CGS is mandated to address issues such as stakeholder relationships, corporate social responsibility, the environment, the workforce, and community health and safety (Camilleri, 2017). As a result, CGS is responsible for directing sustainability-oriented strategies to develop competitive advantage and resolving potentially competing interests of sustainability and financial performance, based on a long-term perspective (Jia, 2020).

The purpose of this study is to analyze the connection between firms' sustainability performance and various governance mechanisms, and how it influences the financial performance of firms. The previous research in this area was documented through several empirical evaluations (Naciti et al., 2021; Zaman et al., 2022). Although they adopt a different methodology than the one used in this study, previous studies scarcely address the wide range of issues related to CGS. Thus, despite the abundance of CGS research, there is no consensus about the nature of the connection between these elements or how they manifest in various institutional contexts.

With little emphasis on governance, the literature on corporate sustainability has traditionally emphasized the impact of social and environmental factors on performance (e.g., Alsayegh et al., 2020;

Sancha et al., 2022; Torrance, 2021). As a result, there has been a lack of research on governance components and how they impact the sustainability and financial performance of firms (Hussain et al., 2018; Triwacananingrum, 2018; Wendry et al., 2023). Our objective is to precisely address the following research question:

What is the role that governance practices play in the relationship between a firm's sustainability and financial performance?

It is crucial to provide an answer to the aforementioned question. The first goal of the study is to clarify and explore the connections between governance and sustainability. The CGS approach emphasizes the significant contribution that firms' sustainability performance makes to the successful implementation of governance practices. According to several papers (e.g., Sancha et al., 2022), more research on governance practices is needed, as concentrating on a single practice provides only a partial picture of the phenomenon and may overlook important practical sustainability considerations. Second, a link between sustainability and the financial performance of firms is also crucial for the successful implementation of sustainability considerations, as highlighted by several articles (Chedad et al., 2022; Chowdhury, 2018). We aim to show firms the practical value of using sustainability metrics to advance their strategic financial performance goals.

The remainder of the paper is organized as follows. First, a review of the relevant literature is presented, along with a specification of key variables and the formulation of hypotheses. After that, research methods are explained. Results and data analysis are presented next. The key findings are then addressed, and conclusions, limitations, and future study directions are offered.

3.2 Theoretical Background and Hypotheses

3.2.1 CGS Focus

As a result of recent scandals that have raised serious questions about how effectively firms are run as well as the significance of social and environmental issues, CGS has emerged as a critical topic in academic debate (Sjåfjell & Bruner, 2020).

Corporate governance (CG) is described as the "structure of rights and responsibilities among the parties with a stake in the firm" (Minciullo, 2019: 13). It is generally understood to be the set of laws, customs, and procedures that regulate the way a firm is managed (Mugarura, 2016). CG can help balance the interests of stakeholders, including managers, shareholders, consumers, suppliers, the

community, and the government, within a firm. (Milman, 2013). Other researchers have discussed the use of CG techniques in dealing with issues, such as workforce management, implementing operational codes, board diversity, and avoiding unethical behavior (López-Arceiz & Bellostas, 2017).

The widely discussed concept of sustainable development is described as "development that meets the needs of the present without compromising the ability of future generations to meet their needs" (Sancha et al., 2022: 29). The understanding of sustainable development by firms has increased in the past few years (Landrum, 2018), and in this regard, firms have started to integrate a sustainability focus into their competitive strategies (Hermundsdottir & Aspelund, 2022).

This paper focuses on the social and environmental aspects of implementing the concept of corporate sustainability performance (CSP) (Danivska et al., 2019; Jamil & Rasheed, 2023). Social sustainability considers both internal (such as workers) and external (such as local communities) groups and is thus involved in the welfare of both workers and broader communities (Vallaster & Lindgreen, 2013). Following Vallaster and Lindgreen's (2013) methodology, this study focuses on the firm itself and interprets social sustainability as those practices that safeguard workers to enhance their working environment, culture, and welfare. Environmental sustainability is often linked to the environmental impact of business activities (Svensson & Wagner, 2011). It specifically refers to the application of environmental management systems and regulations to enhance energy efficiency and lessen environmental waste (Markarian, 2016).

In addition to being linked to social and environmental factors, CSP is linked to corporate financial performance (CFP). A firm's overall standing in categories such as assets, liabilities, equity, expenses, revenue, and profitability is generally measured by CFP. While the literature on CSP has primarily concentrated on examining the performance propositions of social and environmental practices (e.g., Markarian, 2016; Vallaster & Lindgreen, 2013), with little attention paid to the relationship between CSP and CFP (Abukari et al., 2023), several studies have found links between particular aspects of CSP and CFP, indicating that internal practices like pollution prevention and green supply chain management as well as external practices like green product development are important factors in determining financial performance (Abukari et al., 2023). In sum, these studies suggest that firms' sustainability initiatives are major drivers of their financial performance.

Recent research (e.g., Garcia-Sanchez et al., 2019; Tian & Tian, 2021; Wendry et al., 2023) suggests that various CG mechanisms, such as board functions, product responsibility, employment quality, etc.,

may act as mediating factors in the association between firms' sustainability and financial performance. This establishes that CGS measures (such as environmental management systems, green supply management framework, and so on) appear to help translate goals, support, and/or demands into improved sustainability and financial performance.

The two most significant lines of inquiry in the CGS literature are grounded in agency theory (Jensen & Meckling, 1976) and stakeholder theory (Freeman, 1984). According to agency theory, good governance that makes managers answer to a wide range of stakeholders can lessen agency issues (Mishra, 2005). Stakeholder theory states that by coordinating the long-term objectives of all parties involved, CG can improve the relationship between the firm and its stakeholders (Cennamo et al., 2009). To rationalize the CGS perspective from multiple angles, it is reasonable to assume that the theories of the stakeholder and agency complement each other.

3.2.2 Hypothesis Development

We rely on the main claims of the agency and stakeholder theories to accomplish our research goals.

The Jensen and Meckling (1976) agency theory predicts organizational outcomes based on the contentious relationship between managers and stakeholders, assuming the existence of information asymmetry, opportunistic behavior on the part of agents, and conflicts of interest between a principal (shareholder) and agent (manager). According to the agency theory's fundamental premises, managers should make decisions that maximize stockholder wealth, align principal-agent goals, and minimize conflicts (Mirrlees & Raimondo, 2013). Effective CG mechanisms that increase a firm's ability to handle new problems and lessen agency conflicts determine these cognitive alignments (Renders & Gaeremynck, 2012). According to the original agency theory, the firm needed a well-functioning governance mechanism to hold agents accountable for their deeds (Pacces, 2012). In this paper, we take into account how successful CG may contribute to a firm's legitimacy (Gull et al., 2023) and financial performance (Naz et al., 2022). This is consistent with Ricketts' (2002) further explorations of agency theory.

Agency theory can be used to link governance and sustainability performance, as has been done in sustainability literature (e.g., Delbufalo, 2018). Agency theory states that a firm's behavior will be influenced by the governance structures that define it (Hambrick, 2005). According to agency theory, information asymmetry is caused by managers who have an information advantage over investors (Jensen & Meckling, 1976). Information asymmetry can lead to environmental hazards (also known as

hidden costs) that may exacerbate agency problems. Thus, CG mechanisms that encourage managers to monitor and reward sustainability initiatives are inversely linked to proxies for asymmetric information.

We use the stakeholder theory lens to analyze connections between governance practices and the many aspects of firm performance. According to stakeholder theory, firms can enhance their performance by successfully reporting non-financial information in their annual reports, including a thorough assessment of the firm's risks and uncertainties, governance (e.g., board diversity), environmental behaviors, and social responsibility (Wu & Yuan, 2020). According to Maharaj (2008), the board of directors is an important stakeholder in a firm, and it has a responsibility to coordinate management's objectives with those of a wide range of other stakeholders. Lozano and colleagues (2015) argue that a firm's sustainability performance is improved by CG mechanisms, which enhance connections between the firm and its stakeholders. Their view is that sustainability and CG are complementary strategies for improving stakeholder relations. They also note that stakeholder theory connects governance practices to many aspects of business performance, coordinating long-term management objectives with stakeholder objectives.

Stakeholder theory was divided into managerial and ethical branches by Freeman and colleagues (2012). The managerial branch was identified as constructive, and the ethical branch was identified as setting norms. Based on these ideas, Donaldson & Preston (1995) claim that all aspects of the stakeholder theory are "mutually supportive" of CG and promote a conflict-free relationship between management and stakeholders.

The theoretical bases for the two prominent governance research paradigms - agency theory and stakeholder theory - will be expanded in the explanation of our hypotheses. Because no one theory can fully explain the hypothesized links, we emphasize the complementary nature of both frameworks and incorporate both agency theory and stakeholder theory perspectives in the construction of our hypotheses.

3.2.2.1 Sustainability and Financial Performance of Firms

CGS research has empirically demonstrated a variety of relationships between CSP and CFP (e.g., Ameer & Othman, 2012; Aristei, 2022; Jan et al., 2019; Siew et al., 2013). Based on earlier research in the realm of CGS, we will use the agency theory created by Jensen and Meckling (Jensen & Meckling,

1976) (e.g., Mahmood et al., 2023) to further explain the connection between sustainability and the financial performance of firms.

The agency premise states that a firm's performance variance can be determined by both its long-term and forward-looking performance, as well as its short-term and backward-looking performance. Agency theory typically focuses on short-term, backward-looking performance, which leads to significantly different results (Martin et al., 2016) and represents a different aspect of performance than when adopting a long-term forward-looking outlook (Walls et al., 2011). In this context, it is perhaps not unexpected that efforts to date have been inconsistent in establishing a broad link between CSP and CFP.

However, links between sustainability and the financial performance of firms do exist. Managers use sustainability practices that address issues such as increasing efficiency, diversifying energy sources, and reducing emissions. Such practices can be regarded as conventional and procedural competencies, according to Chursin's (2018) taxonomy of business competencies, managers' engagement and the principal-agent relationship are key to creating competitive advantage. The financial performance of firms is improved as a result of environmentally driven sustainable practices. Implementing environmentally driven sustainable practices can also lead to social sustainability such as better working conditions for staff. By handling fewer harmful materials, staff members' well-being and working conditions can be improved, which also enhances the firm's reputation in the community (Jain, 2018), which in turn improves the firm's financial performance. The agency theory and empirical data suggest that firms' sustainability performance leads to greater efficiency in terms of improving financial performance (Pitelis, 2009). Therefore, we hypothesize:

H1a. Corporate sustainability performance is directly linked to corporate financial performance.

H1b. Corporate sustainability performance is indirectly linked to corporate financial performance.

3.2.2.2 Sustainability Performance of Firms and Governance

CG is seen as a precursor to the inclusion of social and environmental considerations in a firm's decision-making process in the strategy literature (Ferrón-Vílchez et al., 2021). Sustainability-oriented projects can influence governance aspects at a firm level, such as board structures (Saidon & Said, 2020) and managers' backgrounds and experience (Schmid & Baldermann, 2021). In other words, the adoption of sustainability-focused strategies may influence board structures and managers' values

(Pearce & Locke, 2023). As stated by Capaldi and colleagues (2017), the governance of a firm is benefited by the development of sustainable initiatives. For instance, board of directors who are tasked with securing their firm's future are now looking at sustainability initiatives with a long-term business perspective. Thus, CG is becoming more and more critical about CSP, which is a strategic imperative and has reporting expectations for firms.

Agency theory draws attention to conflicts of interest (principal and agent), leading to conflicts in stakeholder and management relationships (Waheed et al., 2021). One such conflict involves firm owners versus managers. While firm owners may be more interested in social and environmental interactions that improve a firm's profitability over the long term, managers may hope to increase short-term financial returns by paying less attention to environmental policy and social considerations (Ilídio Tomás Lopes, 2013). The manager-owner conflict illustrates divergent priorities regarding the formulation and execution of organizational plans, which impact firm performance. Principal-agent issues arise from such varying priorities. Firm owners can play a crucial role in setting priorities for sustainability performance by monitoring, ratifying, and sanctioning corporate managers' decisions (Ricketts, 2002).

Although numerous scholars have employed agency theory to construct the relationship between CG and CSP, this theory apparently cannot account for all aspects of the current realities. To that end, McIvor and colleagues (2022) agreed that a single theory could not adequately explain why social aims should be incorporated into business plans. Several academics have employed multiple theories to establish the connection between CG and CSP, and the aims of shareholders, stakeholders, and management can be aligned by using both agency theory and stakeholder theory. To achieve organizational success, the stakeholder theory suggests accounting for the interests of both stakeholders and shareholders for moral and practical reasons, making improvements for employees, clients, and the environment, among others (Robinson, 2021). This justifies fusing the two theories to explain their hypothesized connection. According to earlier studies (Latip et al., 2022; Panigrahi & Rao, 2018; Pollice, 2010), stakeholders are pressuring firms worldwide to embrace sustainable practices. The focus on sustainability performance has necessitated stronger governance components to hold managers accountable for their actions and reduce agency conflicts, resulting in the integration of both theories (Naciti et al., 2021). In firms that prioritize sustainability performance, CG is more likely to have a direct responsibility for sustainability issues. For instance, managers' reporting on sustainability

practices has grown dramatically as a result of stakeholder demand for the disclosure of corporate operations (Loughran et al., 2023).

The existing literature examines the connection between governance and sustainability in a variety of ways, including the role of the board of directors (Boubaker & Nguyn, 2012), the development of green products (Cheng, 2020), gender diversity (Marquardt & Wiedman, 2016), sustainability reporting (Brockett & Rezaee, 2012), CSR practices (Matten & Moon, 2008), the representation of women on boards (Carmo et al., 2022), and training and development for sustainable business (Rahman & Howlader, 2022). This paper relies on two types of CG mechanisms, namely board governance and operational governance. Board governance is the term used to describe the effectiveness of boards and their composition in influencing the sustainability and financial performance of firms. Operational governance is the term for firms' operational effectiveness in enhancing their sustainability and financial performance relationship. Based on evidence on the association between CG and CSP, and theoretical inferences from the agency theory and stakeholder theory, the next hypotheses are derived.:

H2. Corporate sustainability performance is linked to board governance.

H3. Corporate sustainability performance is linked to operational governance.

3.2.2.3 Governance and Financial Performance of Firms

In light of growing corporate fraud that has upset numerous stakeholders and put tremendous pressure on diverse constituencies for effective governance, CG has become a crucial subject (Fernando, 2011). As previously discussed, stakeholder theory advocates for good governance in which a firm is accountable to a wide range of distinct stakeholders (see Freeman (1984)). According to the stakeholder theory, a firm has a variety of stakeholders who provide the resources necessary for its existence and success (Donaldson & Preston, 1995). As a result, firms have a responsibility to reward stakeholders for their support by adding value for the parties involved. Although managers are agents of shareholders, Cennamo and colleagues (2009) argue that managers also have a variety of stakeholder obligations. Therefore, CG replaces the bilateral manager–shareholder interaction with a multilateral relationship between managers and stakeholders.

According to Sodhi (2015), CG shows a firm's level of commitment to a variety of stakeholders. The ability of a firm to succeed is greatly influenced by the CG mechanisms they have in place to serve their stakeholder interests. Cruz-Ros and colleagues (2010) claim that a firm's financial performance is

required for stakeholder satisfaction. Furthermore, according to the stakeholder theory, firms cannot satisfy their shareholders without also satisfying other stakeholders (Freeman, 1994). When a firm's primary goal is to serve its shareholders, satisfying stakeholders nevertheless also remains critical to that firm's success (Mehrpooya & Chowdhury, 2018). Therefore, a comprehensive strategy allows a firm to utilize shared value through different CG methods, benefitting all stakeholders. According to the stakeholder theory's proponent, a firm is more likely to survive and prosper in the long run if its governance procedures are suited to servicing its stakeholders. This shows that past stakeholder research has found a strong correlation between CG and CFP (Goergen, 1998; Singh & Rastogi, 2023). Following these arguments, we hypothesize:

H4. Board governance is linked to corporate financial performance.

H5. Operational governance is linked to corporate financial performance.

3.2.2.4 The Mediating Role of Governance in the Sustainability and Financial Performance Relationship

Academics have required more research on variables, such as mediators and moderators influencing the CSP–CFP relationship, acknowledging that a general relationship between CSP and CFP may produce contradictory findings (Bojnec & Tomšič, 2021; Tian & Tian, 2021). Since differences between firms and contexts may influence the CSP–CFP relationship (i.e., moderators), and since the effect of CSP on CFP may arise through various other means (i.e., mediators), a contingency view on the CSP–CFP relationship may create a much more nuanced depiction (Vu & Dang, 2021).

In addition to the hypotheses stated above, one can also hypothesize that CG plays a mediating function in the relationship between CSP and CFP. A governance mechanism that encompasses sustainability aspects, such as board diversity (Zhu et al., 2022) or green product innovation (Shahzad et al., 2020), will result in improved financial performance, which is the justification for this mediating effect. For instance, the pressure on managers to take steps to achieve sustainability goals comes from the pressure on the board to implement initiatives that focus on long-term economic development. (Chams & García-Blandón, 2019). In several articles (e.g., Abukari et al., 2023; Ameer & Othman, 2012; Jan et al., 2019), the link between CG and improvements in financial performance is highlighted. Therefore, governance actions related to sustainability performance are necessary to achieve financial performance objectives (Vu & Dang, 2021).

According to Delbufalo (2018), agency theory predicts that managers will incorporate their preferences, experiences, and values into business policies (such as sustainability strategies). More specifically, according to agency theory logic, we anticipate that high levels of diversity and/or commitment to moral principles in governance elements (through the adoption of various ethical practices, such as CSR reporting, code of conduct, etc.) encourage the adoption of sustainability practices (Donaldson & Davis, 1991). Conversely, the adoption of sustainable practices will impact these governance features (Hussain et al., 2018). And finally, the adoption of sustainable practices through governance mechanisms will result in improved financial performance (Mukherjee & Sen, 2022). In this regard, Naz and colleagues (2022) claimed that effective CG increases an organization's capacity to address sustainability-related problems and reduce agency tensions. Also, effective CG mechanisms can reduce agency difficulties and improve financial performance by ensuring that managers are held accountable to a diverse range of stakeholders (Maharaj, 2008). Following these arguments, the next hypotheses are derived:

H6. Board governance mediates the relationship between corporate sustainability performance and corporate financial performance.

H7. Operational governance mediates the relationship between corporate sustainability performance and corporate financial performance.

Figure 3.1 illustrates the hypotheses.

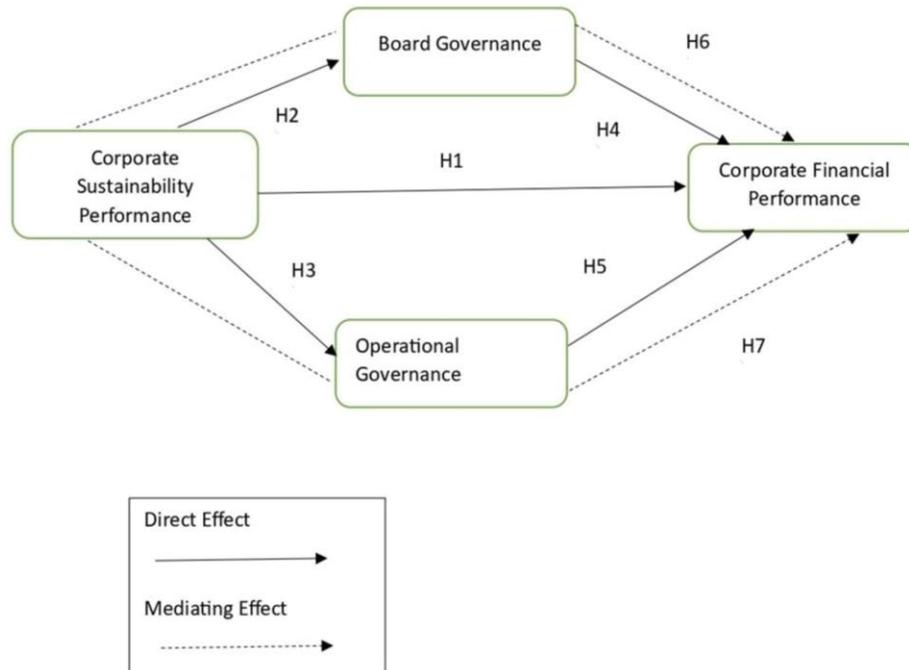


Figure 3.1: Research Model

3.3 Research Methodology

The succinct overview of the literature in the previous sections demonstrates the nuanced connection between CSP and CFP, and how this connection may interact with governance elements. Hence, CG has the potential to connect a firm's sustainability and financial performance. Given that CG can handle such complicated interactions, structural equation modeling (SEM) is an appropriate methodology (Van Acker & Witlox, 2010). Since it offers adequate tools for analyzing measurements and structural models (e.g., Adedeji et al., 2020; Aziz et al., 2018; Janggu et al., 2014; Wen et al., 2022), SEM's application is widely acknowledged in social science.

Covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM) are currently two commonly utilized SEM approaches (Janggu et al., 2014). A clear philosophical difference exists between CB-SEM and PLS-SEM. CB-SEM is the appropriate method if the goal of the study is to test and confirm theories (Dash & Paul, 2021). On the other hand, PLS-SEM is the right approach if the goal of the study is theory creation or prediction. This study argues that PLS-SEM is more suitable for the scope of this study because (1) PLS-SEM is better suited for prediction-oriented research (Agyabeng-Mensah et al., 2020), and (2) PLS-SEM is a superior method for analyzing complex

relationships in structural models and when studying them in large systems (Ahn, 2022; Girón et al., 2021; Jung et al., 2018; Pulka et al., 2021). This paper utilizes SmartPLS which is the most comprehensive software for conducting PLS-SEM analyses.

3.3.1 Variables

Variables are created and improved through various stages. In our study, we first conducted an extensive review of the existing corporate governance and sustainability literature. The best forecasts are made using the most appropriate proxies for independent, dependent, mediating, and control variables. In our analysis, CSP serves as the independent variable. The environmental and social scores are used as proxies for CSP. These proxies have been widely used in past empirical research to evaluate firms' sustainability performance. (Ahn, 2022; Girón et al., 2021; Jung et al., 2018).

The two constructs we use as mediators are operational governance (OG), which involves resource conservation, innovation in products, and product responsibility, and board governance (BG), which encompasses board function, structure, and policy.

Market-based measures and accounting measures are used to measure CFP, which is the dependent variable of our research.

The study considers other factors that impact sustainability and the financial performance of a firm. A firm's financial and sustainability performance, as well as its capacity to identify its economies of scale, are significantly influenced by its type of business (i.e., manufacturing or services) (Hormati et al., 2022). Furthermore, the performance of firms differs depending on the type of industry. For instance, firms in carbon-intensive sectors need to perform better financially and sustainably, as they are influenced by stricter environmental controls (Al-Qahtani & Elgharbawy, 2020). The definitions and operationalization of the variables in the study are shown in Table 3.1 below.

Table 3.1: The operationalization of the variables in the study

Variables Name	Description	Notation
<i>Independent Variables</i>		
Corporate Sustainability Performance - Resource Use Score	A firm's performance and capacity to reduce the use of materials, energy, or water, and to find more eco-efficient solutions by improving supply chain management.	CSP1
Corporate Sustainability Performance - Emissions Score	A firm's commitment and effectiveness towards reducing environmental emission in the production and operational processes.	CSP2
Corporate Sustainability Performance - Environmental Innovation Score	A firm's capacity to reduce the environmental costs and thereby creating new market opportunities through new environmental technologies and processes or eco-designed products.	CSP3
Corporate Sustainability Performance - Workforce Score	A firm's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce.	CSP4
Corporate Sustainability Performance - Human Rights Score	A firm's effectiveness towards respecting the fundamental human rights conventions.	CSP5
Corporate Sustainability Performance - Community Score	A firm's commitment towards being a good citizen, protecting public health and respecting business ethics.	CSP6
Corporate Sustainability Performance - Product Responsibility Score	A firm's capacity to produce quality goods and services integrating the customer's health and safety, integrity and data privacy.	CSP7
<i>Mediating Variables</i>		
Board Governance - Board Functions	A firm's prosperity by collectively directing the company's affairs	BG1
Board Governance - Board Structure	A firm's articles of incorporation and its corporate bylaws.	BG2
Board Governance - Board Compensation Policy	A firm's policy for remuneration, expressed in terms of a cash amount	BG3
Operational Governance - Emission Reduction	A measurable reduction of release of GHGs into the atmosphere from a firm's operational activity.	OG1
Operational Governance - Product Innovation	A firm's creation of key products to reduce the deterioration of the environment and optimizes the use of natural resources.	OG2
Operational Governance - Resource Reduction	A firm's practice of eliminating waste before it is created or essentially using less material to get the job done.	OG3
Operational Governance - Product Responsibility	A firm's return obligations for products that have become waste and the establishment of collection and recycling requirements.	OG4
<i>Dependent Variables</i>		
Market-based Measurement - Price earnings ratio	A measure of a firm's market value price per share by the firm's earnings per share.	MKT1
Market-based Measurement - Market-to-book value	A measure of a firm's stock whether over or undervalued by comparing the market price of all outstanding shares with the net assets of the company.	MKT 2
Accounting-based Measurement - ROA	A measure of a firm's profitability in relation to its total assets.	ACCT1
Accounting-based Measurement- ROE	A measure of a firm's net income divided by its shareholders' equity.	ACCT2
<i>Control Variables</i>		
Firm Type	A firm type involved in manufacturing the physical goods or servicing the intangible products	CV1
Industry Type	A productive industry that produces goods or services in a particular sector.	CV2
Firm Age	The time between the initial creation of a firm and the present time (in years).	CV3

3.3.2 Sample

Canada serves as the key background for this investigation. We concentrate on a representative sample of large and actively traded Canadian firms listed on the Toronto Stock Exchange (TSX) in 2022. The Refinitiv database is primarily employed in our study based on previous research (Disli et al., 2022; Dobrick et al., 2023; Filippou & Taylor, 2021). This database is an international platform that gathers and offers ESG data on over 9000 firms worldwide. The Refinitiv database ranks 224 TSX firms for governance and sustainability performance scores in our sample.

Data on a firm's sustainability performance include resource consumption, emissions, environmental innovation, community, workforce, human rights, and product responsibility is gathered from the Refinitiv database. Data on mediating factors, such as OG (emissions reduction, product innovation, resource reduction, and product responsibility) and BG (board function, structure, and policy) are also gathered from the Refinitiv database. Financial information, such as market book value, ROA, etc., is derived from individual firms' annual reports. The sustainability and financial performance of firms are greatly impacted by other firm-specific control factors, as demonstrated by previous research (e.g., Al-Qahtani & Elgharbawy, 2020; Hormati et al., 2022). As a result, they are also included in this study.

3.4 Findings

3.4.1 Measurement Model Assessment

The measurement model involves reflective constructs of CSP, BG, and OG, whereas CFP was shown as a second-order reflective-reflective construct, as two dimensions of CFP (i.e., MKT and ACCT) are mutually exclusive and distinct. The measurement model's findings are reported in this paper using standards suggested by Hair & colleagues (2020). Table 3.2 shows the findings of the measurement model that support the reliability and validity of the reflective concepts in the paper.

First, the convergent validity was assessed using Standardized Factor Loadings (SFL) and the Average Variance Extracted (AVE) index. All the item loadings met the minimum threshold value (0.70), except for CSP7, which had lower loading and was accordingly deleted from the structural equation modeling. The convergent validity of all constructs was established through the values of AVE. An AVE value that is greater than 0.50 is considered acceptable as it accounts for 50 percent of the item variance (James, 2013). AVE values of all constructs in this study met the minimum threshold value of 0.50 (Hair et al., 2020).

Second, the construct reliability was calculated using Cronbach's alpha, Dijkstra–Henseler's reliability, and composite reliability. Hair and colleagues (2020) recommend that if the values of these reliability measures are > 0.70 , the construct reliability is established. Cronbach alpha values varied between 0.73 and 0.83, Dijkstra–Henseler values varied between 0.73 to 0.88, and composite reliability values varied between 0.74 to 0.91, indicating the construct reliability in this study was met (Hair et al., 2020).

Third, the multicollinearity in the structural model was calculated, with the value of each indicator's Variance Inflation Factor (VIF) being less than 5, indicating that independent and dependent variables do not have lateral or vertical collinearity (James, 2013).

Fourth, the coefficient of determination (R^2) is calculated, which refers to the proportion of variation in the dependent variable that is predicted by the statistical model. A high level of correlation would typically be seen if the R^2 is above 0.7. The R^2 values for BG, OG, and CFP specified that the structural model described 15%, 54%, and 27% variance of the construct, respectively, which was deemed acceptable for the structural model.

Table 3.2: Measurement Model Results

Constructs	Code	SFL	VIF	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Corporate Sustainability Performance (CSP)				0.834	0.885	0.88	0.528
	CSP1	0.913	3.553				
	CSP2	0.821	2.988				
	CSP3	0.714	1.818				
	CSP4	0.747	2.304				
	CSP5	0.743	2.157				
	CSP6	0.705	1.782				
	CSP7*	0.271	1.323				
Board Governance (BG)				0.752	0.759	0.857	0.667
	BG1	0.804	1.603				
	BG2	0.819	1.389				
	BG3	0.827	1.613				
Operational Governance (OG)				0.818	0.873	0.877	0.643
	OG1	0.901	2.497				
	OG2	0.721	1.574				
	OG3	0.861	2.202				
	OG4	0.708	1.566				
Corporate Financial Performance (CFP)				0.696	0.701	0.812	0.52
MKT	MKT1	0.764	1.791	0.793	0.793	0.906	0.828
	MKT2	0.745	1.758	0.853	0.853	0.931	0.871
ACCT	ACCT1	0.676	2.241				
	ACCT2	0.697	2.232				
Control Variables							
Firm Size	CV1	1	1	1	1	1	1
Industry Type	CV2	1	1	1	1	1	1
Firm Age	CV3	1	1	1	1	1	1

*Note: * Items have low factor loading and deleted accordingly*

Finally, the discriminant validity was calculated using cross-factor loadings. Hair and colleagues (2020) suggest that discriminant validity can be established if all the factor loadings are greater than their cross-loadings. Table 3.3 presents the cross-factor loadings of all the items, demonstrating that all the factor loadings were greater than their cross-loadings.

Table 3.3: Cross-factor loadings

	CFP	ACCT	BG	CSP	CV3	CV2	CV1	MKT	OG
CSP1	0.445	0.181	0.358	0.913	0.306	-0.191	-0.305	0.489	0.734
CSP2	0.35	0.105	0.34	0.821	0.36	-0.221	-0.331	0.417	0.63
CSP3	0.307	0.118	0.274	0.714	0.207	0.12	-0.159	0.343	0.556
CSP4	0.323	0.044	0.3	0.747	0.198	-0.288	-0.333	0.427	0.489
CSP5	0.312	0.197	0.269	0.743	0.191	0.006	-0.127	0.286	0.5
CSP6	0.243	0.024	0.262	0.705	0.284	-0.313	-0.326	0.329	0.458
CSP7	0.161	0.149	0.091	0.271	0.159	0.295	0.038	0.109	0.211
BG1	0.2	0.086	0.804	0.318	0.222	-0.069	-0.139	0.217	0.26
BG2	0.352	0.092	0.819	0.326	0.086	-0.087	-0.167	0.429	0.258
BG3	0.288	0.098	0.827	0.307	0.257	-0.028	-0.106	0.332	0.255
OG1	0.408	0.194	0.29	0.761	0.355	-0.073	-0.146	0.425	0.901
OG2	0.232	0.046	0.255	0.43	0.243	0.08	-0.193	0.294	0.721
OG3	0.506	0.191	0.247	0.629	0.246	-0.138	-0.18	0.569	0.861
OG4	0.213	0.039	0.224	0.453	0.219	-0.006	-0.208	0.274	0.708
MKT1	0.676	0.931	0.081	0.136	0.123	-0.067	0.018	0.202	0.175
MKT2	0.697	0.936	0.129	0.159	0.168	-0.033	-0.057	0.228	0.137
ACCT1	0.764	0.226	0.377	0.449	0.255	-0.138	-0.217	0.913	0.415
ACCT2	0.745	0.194	0.37	0.454	0.185	-0.187	-0.262	0.908	0.512
CV1	-0.195	-0.021	-0.17	-0.329	-0.108	0.446	1	-0.263	-0.216
CV2	-0.155	-0.054	-0.076	-0.161	0.043	1	0.446	-0.178	-0.063
CV3	0.259	0.156	0.223	0.341	1	0.043	-0.108	0.243	0.337

3.4.2 Hypotheses Testing

3.4.2.1 Direct Effects (H1a, H2, H3, H4, H5)

The bootstrapping procedure was used to assess the significance levels of direct path coefficients. Table 3.4 provides the results.

The results show that the direct relationship between CSP and CFP was not significant (H1a: $\beta = 0.115$; BCa-CI95% [-0.078, 0.262]; T Statistics = 1.361; $p > 0.05$). Therefore, H1a was rejected.

The results demonstrate a significant relationship between CSP and BG (H2: $\beta = 0.388$; BCa-CI95% [0.265, 0.517]; T Statistics = 5.953; $p < 0.05$). Therefore, H2 was accepted.

The results demonstrate a significant relationship between CSP and OG (H3: $\beta = 0.735$; BCa-CI95% [0.656, 0.813]; T Statistics = 17.924; $p < 0.05$). Therefore, H3 was accepted.

The results demonstrate a significant relationship between BG and CFP (H4: $\beta = 0.187$; BCa-CI95% [0.043, 0.329]; T Statistics = 2.582; $p < 0.05$). Therefore, H4 was accepted.

The results also demonstrate a significant relationship between OG and CFP (H5: $\beta = 0.265$; BCa-CI95% [0.130, 0.430]; T Statistics = 3.457; $p < 0.05$). Therefore, H5 was accepted.

Table 3.4: Direct Effects, Indirect Effects, and Mediating Effects of the Structural Model Path Coefficients

Structural Path	Standardized Path Coefficient	95% BCa Confidence Interval	T Statistics (O/STDEV)	P values	Significant at p < 0.05?	Conclusion
Direct Effects						
Corporate Sustainability Performance -> Corporate Financial Performance	0.115	(-0.078, 0.262)	1.361	0.174	No	H1a is rejected
Corporate Sustainability Performance -> Board Governance	0.388	(0.265, 0.517)	5.953	0.000	Yes	H2 is accepted
Corporate Sustainability Performance -> Operational Governance	0.735	(0.656, 0.813)	17.924	0.000	Yes	H3 is accepted
Board Governance -> Corporate Financial Performance	0.192	(0.043, 0.329)	2.582	0.007	Yes	H4 is accepted
Operational Governance -> Corporate Financial Performance	0.265	(0.130, 0.430)	3.457	0.001	Yes	H5 is accepted
Indirect Effect						
Corporate Sustainability Performance -> Corporate Financial Performance	0.141	(0.150, 0.392)	4.071	0.000	Yes	H1b is accepted
Mediating effects						
Corporate Sustainability Performance -> Board Governance -> Corporate Financial Performance	0.075	(0.02, 0.14)	2.517	0.012	Yes	H6 is accepted
Corporate Sustainability Performance -> Operational Governance -> Corporate Financial Performance	0.195	(0.09, 0.30)	3.229	0.001	Yes	H7 is accepted
<i>R Square (Corporate Financial Performance) = 0.27; R Square (Board Governance) = 0.15; R Square (Operational Governance) = 0.54</i>						

3.4.2.2 Indirect Effects (H1b)

To assess the indirect effect hypothesis (H1b) between CSP and CFP, the significance levels of indirect path coefficients were attained by applying the bootstrapping procedure. The empirical results show that the indirect relationship between CSP and CFP was significant (H1b: $\beta = 0.141$; BCa-CI95% [0.150, 0.392]; T Statistics = 4.071; $p < 0.05$). Therefore, H1b was accepted, and a full mediation was confirmed since the direct effect ($\beta = 0.115$; BCa-CI95% [-0.078, 0.262]; T Statistics = 1.361; $p > 0.05$) was not significant (Hair et al., 2020).

3.4.2.3 Mediating Effects (H6, H7)

This study specifically investigated whether CG provided a mediating role in the model. The significance levels of specific indirect effects were attained by applying the bootstrapping procedure. In this model, two mediators of BG and OG were simultaneously included in the model. Figure 3.2 illustrates the PSL-SEM model.

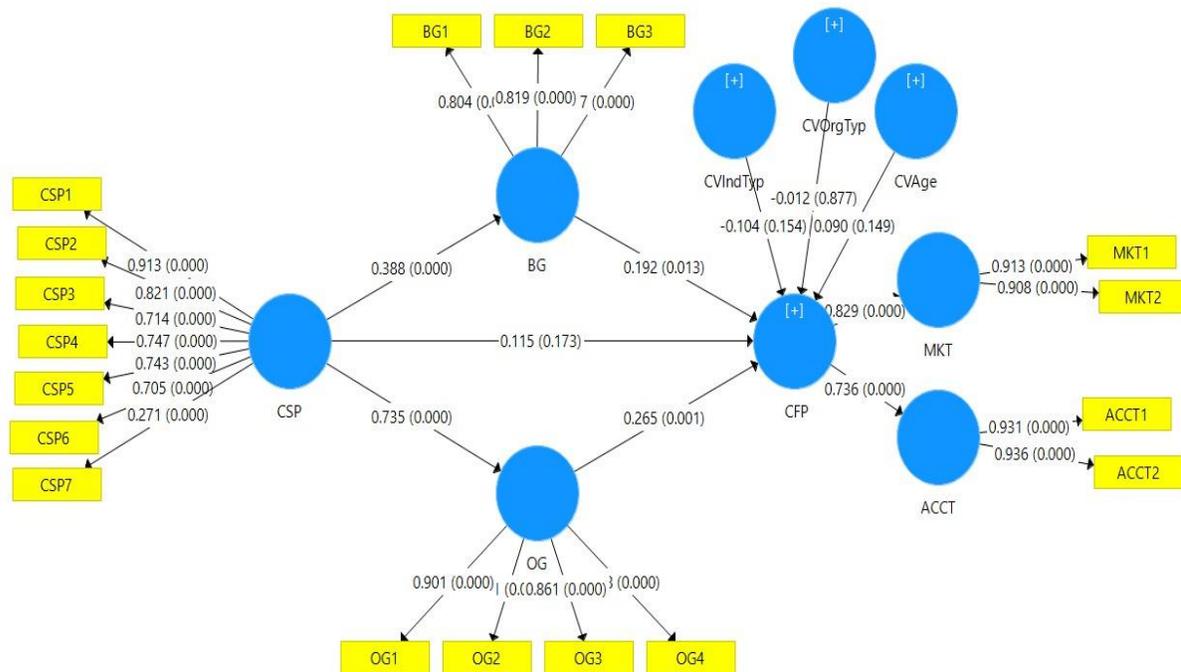


Figure 3.2: Model (inner and outer) results

Consistent with H6, BG mediated the relationship between CSP and CFP. CSP had an insignificant direct impact on financial performance ($\beta = 0.115$; BCa-CI95% [-0.078, 0.262]; T Statistics = 1.361; $p > 0.05$); when adding BG as a mediator, then the CSP → BG → CFP link was significant (H6: $\beta = 0.075$; BCa-CI95% [0.02, 0.14]; T Statistics = 2.517; $p > 0.05$), and CSP increased its influence. Therefore, H6 was accepted, and this result implies a partial mediation between sustainability and the financial performance of firms.

Similarly, H7 predicts that OG mediated the relationship between CSP and CFP. CSP had an insignificant direct impact on financial performance ($\beta = 0.115$; BCa-CI95% [-0.078, 0.262]; T Statistics = 1.361; $p > 0.05$); when adding OG as a mediator, then the CSP → OG → CFP link was significant performance (H7: $\beta = 0.195$; BCa-CI95% [0.09, 0.30]; T Statistics = 3.229; $p > 0.05$), and

CSP increased its influence. Therefore, H7 was accepted, and this result implies a partial mediation between sustainability and the financial performance of firms.

3.5 Discussion and Conclusion

The findings highlight three key ideas that serve as the basis for this discussion: 1) the relationship between sustainability and financial performance; 2) the impact of sustainability performance on governance; and 3) the role of governance mechanisms in the effectiveness of firm performance.

3.5.1 The Relationship between Sustainability and Financial Performance

Recent literature has suggested that there could be synergies and linkages between various sustainability characteristics and firms' financial performance (e.g., Ameer & Othman, 2012; Jan et al., 2019; Siew et al., 2013). We have investigated these relationships in our research. The significance of sustainability activities in predicting improved financial performance has been highlighted in the sustainability literature (e.g., Mahmood et al., 2023; Siew et al., 2013). Our findings are consistent with this literature and empirically demonstrate that there is an advantage for financial firms to adopt sustainable practices because they follow a logic that supports purely economic justification. The execution of sustainable practices, such as environmental management systems and/or activities aimed at improving employee welfare, is influenced by sustainability initiatives. Therefore, it is important to emphasize the critical role that sustainable development activities play in improving financial performance (Chedad et al., 2022; Chowdhury, 2018).

Previous research in the field highlighted the importance of top management's commitment to implementing sustainable practices (e.g., Cennamo et al., 2009; Gabriel, 2012; Svensson & Wagner, 2011). Our paper adds to these findings by demonstrating how senior management's commitment to sustainability efforts compares to conventional and procedural competencies of firms as stated in the theoretical background section. Taking a strategic approach to the CSP-CFP relationship requires shifting from a financial perspective and gaining a more thorough understanding of business performance. According to Klingenberg and colleagues (2013), the strategy literature uses two separate methods to gauge a firm's performance: (i) financial performance and (ii) non-financial performance. Financial success, based on financial indicators is only a partial representation of the firm's overall performance. The firm's financial performance highlights its financial aims, whereas non-financial objectives and indicators such as resource consumption, emissions, environmental innovation, as well

as human rights, community development, and product responsibility are highlighted by the broader notions of social and environmental performance (Di Vaio & Varriale, 2020).

3.5.2 The Impact of Sustainability Performance on Governance

According to the findings of our study, corporate governance and sustainable practices should be understood alongside other measures of a firm's performance. This study provides a conceptual and empirical understanding of how to enhance the performance of firms by incorporating sustainable practices into governance structures. While sustainable practices are discussed through the lens of stakeholder theory, the governance mechanisms that are considered to be the most crucial components of this study are produced through the lens of agency theory.

Our research indicates that adopting sustainable management techniques has a significant impact on the development of a governance framework that encompasses BG and OG. To minimize adverse social and environmental effects, these governance components will be impacted by the implementation of environmental management systems and the adoption of social plans. It is becoming increasingly clear that sustainability issues present risks and opportunities and that their effective management improves value creation and business protection. Our prediction that high sustainability performance firms are distinct in their CG mechanisms was confirmed by the results of this study. Such firms prioritize reducing agency and stakeholder conflicts while promoting their governance practices based on sustainability initiatives.

Our research shows that sustainability practices, such as adopting environmental management systems, can influence the effectiveness of governance structures, such as board functions. For instance, the board can create a governance structure to manage a firm's sustainability issues and incorporate sustainability in its business plans. Studies by Arayakarnkul and colleagues (2022), Manita and colleagues (2018), and Rao & Tilt, 2016 are just a few examples of the numerous earlier articles in the corporate governance and sustainability literature that are consistent with our findings. A firm's governance practices can effectively address social and environmental problems, guaranteeing that it does not cause environmental degradation and social deprivation in the future. From a business perspective, increasing interest in sustainability driven initiatives can directly contribute to sustainable development and better governance practices.

3.5.3 The Role of Governance Mechanisms in the Effectiveness of Firm Performance

The association between sustainability and financial performance of firms is examined in our study through governance mechanisms. Our study examines whether CG features influence the relationship between sustainability performance and financial performance. In contrast to other research, we measure BG and OG independently, relying on dynamic agency and stakeholder perspectives to measure firms' performance. The social and environmental performance of firms plays a crucial role in examining their competitive advantages, as evidenced by the results of our study. Data supporting the relationship between corporate sustainability and financial performance helps explain governance mechanisms. CSP, which is based on an antecedent role, helps managers execute governance practices that produce competitive advantage while relying on stakeholder connections, according to agency and stakeholder theories. The findings of this study complement previous findings (e.g., Cadbury, 1993; Duppati et al., 2019; Hormati et al., 2022; Pasko et al., 2022) claiming that corporate sustainability success is linked to both governance practices and financial performance. By evaluating the determinants of environmental and social behavior, as well as of governance practices and financial performance, our empirical study contributes to the literature on stakeholder and agency perspectives of the firm. Challenges in the current competitive environment relate to the ability of management to adapt to stakeholder demands by regularly reconfiguring corporate policies and plans.

This study offers a fresh perspective for predicting a firm's performance while emphasizing social and environmental performance as powerful strategies for improving governance structures, which in turn improves the financial performance of a firm. For instance, if a firm can quickly change its behavior in favor of the environment, it will work to minimize its carbon impact. The firm will enhance its reputation and brand while improving financial performance in this way (Altinbasak-Farina & Burnaz, 2019). Furthermore, no studies have yet examined how the board and operational governance, which is a kind of principal-agent and stakeholder view in business management research, mediate the influence of corporate sustainability on a firm's performance. Our study's most significant theoretical contribution is the evaluation of the governance practices' ability to bridge the gap between financial success and its two antecedents, the social and environmental performance of firms. The two antecedent conceptions have the potential to impact financial performance mediated through governance mechanisms. To put it another way, this study demonstrates how OG and BG mediate the association between both antecedent variables and financial success, thus defining a crucial enabler. Finally, despite having been extensively discussed, the relationship between CSP and CFP has generated a great deal

of debate and produced inconclusive results. The current study makes a valuable contribution to the literature on the role of governance as a mediator in establishing this relationship.

In addition to the academic contributions already discussed, we believe the paper has important managerial implications. First and foremost, managers responsible for sustainability plans must understand the significance of CG — that governance frameworks and sustainability policies need to be integrated to address the many issues, like climate change, that firms face today. If the firm has successfully implemented sustainable practices, governance structures linked with sustainability will produce better financial performance outcomes. To further implement the sustainability plan, governance actions taken at the corporate level must be conveyed to functional areas of the business. Second, managers must exhibit high levels of sustainable behavior for firms to perform financially (Ditlev-Simonsen & Midttun, 2011; Ferrón-Vilchez et al., 2021; Greiner & Sun, 2021). Using this approach, firms are required to offer managers training in sustainable development activities. Third, managers should be commended for their efforts in putting sustainability-driven initiatives into action that benefit firms' financial performance and sustainability. In such a situation, firms should further encourage managers' sustainability behavior by linking performance reviews to managers' contributions to CSP.

3.5.4 Conclusion

CFP is becoming increasingly important while being reviewed through sustainability performance and a variety of governance mechanisms, as demonstrated by this study. A summary of our contributions follows. First, we demonstrate how a firm's sustainability performance influences the adoption of governance approaches at the board and operational levels. Second, we stress that using various governance mechanisms, a firm's sustainability performance is essential to ensuring improvements in its financial performance. Our paper contributes to the recent call for sustainability research that takes into account advances in the sustainability literature, two essential governance components, and financial performance, as well as their interactions (Camilleri, 2017; E-Vahdati et al., 2019; Hussain et al., 2018; Sancha et al., 2022). The key takeaway from this study is that the implementation of sustainable practices could be one of the effective means of improving financial performance through an efficient governance structure. We can conclude that the proper implementation of sustainability measures must be in tandem with governance policies.

3.6 Limitations and Future Research Opportunities

A few limitations of this study are outlined in the following lines. First, the suggested model's structural relationships are the main emphasis of the paper, and its conclusions are based on exploratory investigation. We indicate that there is potential for future studies to investigate the relationship between governance components, financial performance, and sustainability performance. In this sustainability initiative, we propose a confirmatory factor analysis to investigate the connections between better financial performance and better governance practices. Second, the body of knowledge would be enhanced by taking into account mediation mechanisms in the structural links suggested in this work. In our article, we were able to explain how board and operational governance components relate to sustainability and financial performance. Further research is required to understand the function of other elements of governance that are more strongly influenced by sustainability practices. Third, an aggregate index of social and environmental ratings was used to determine corporate sustainability performance. It is necessary to conduct additional studies to examine how other social and environmental dimensions influence governance components and business financial performance. Fourth, this study's low generalizability is noted. The 224 firms listed on the TSX with a strong commitment to corporate sustainability are the only ones whose data were accessible. The conclusions of this study may not be relevant to small and medium-sized firms (SMEs). Fifth, the use of longitudinal or temporal data in future studies would enhance the validity and reliability of the findings, allowing for a deeper examination of the relationships between variables. Finally, it may be worthwhile to study the potential impact of organizational transformation on the linkages included in the model, given that a change in organizational perspective (e.g., employment quality, training & development, etc.) is likely to improve a firm's social and environmental performance.

Chapter 4

The Influence of Workforce Practices on Firms' Sustainability Performance: An Empirical Study of Canadian Firms Listed on the Toronto Stock Exchange (TSX)

Abstract

This study examines the impact of workforce practices on firms' environmental and social performance. The mediating impact of firms' financial performance and the moderating impact of firm age on workforce practices and environmental/social performance are also investigated. Data were collected through the Refinitiv database from a sample of 224 large, actively traded Canadian firms listed on the Toronto Stock Exchange (TSX). A linear regression model was used to test the effect of various workforce practices on firms' environmental and social performance. The findings have important implications for the direct and indirect impacts of workforce practices on firms' environmental and social performance. While the direct impact was found to be significant, firms' financial performance was found to fully mediate the workforce-environment/social performance relationship. The findings also demonstrated that the impact of firm age on workforce practices and environmental/social performance via financial performance was significant. The study draws on the signaling theory to empirically investigate the contextual aspects that affect the association between various workforce practices and firms' sustainability performance. The findings can be utilized by firms to select the right mix of practices to tailor workforce management and achieve better sustainability performance in their environmental and social initiatives.

Keywords: Workforce Practice, Corporate Financial Performance, Environmental Performance, Social Performance, Signaling Theory

4.1 Introduction

Globalization since the early 1990s has led to a change in the business environment. The business world has become characterized by technological disruption and abrupt economic turmoil. The market has been evolving and changing, resulting in frequent upheavals (Cartwright, 2021). Such change includes the fact that in both industry and academia, machine learning, artificial intelligence and big data have taken the lead (Ritala et al., 2022). Organizations strive to cope with this erratic and fluctuating business environment (Mamédo et al., 2019) and to develop competitive business tactics (Farida, 2022).

Shifting business strategies exert influence on firms' performance. Pioneering research on business strategy and research that constitutes the basis of business strategic analysis has scrutinized the influence of business strategy on firm performance (Goll et al., 2008). Firms are continuously searching for new ways to enhance performance and gain a competitive edge, while workforce practices offer an approach that firms can use to improve performance (Curtis, 2022) and comprise rules and regulations that firms put in place to improve employee working conditions (Cornwel et al., 2021). These practices can ensure high safety standards or enhance productivity by standardizing work and flows, thus positively impacting a firm's performance. For example, firms like Toyota, Boeing, and many others implemented the Lean Six Sigma (LSS) approach to improve their performance. The LSS process focuses on waste disposal (elimination of unnecessary procedures and processes) to standardize work and flows (Schonberger, 2008). Therefore, in recent decades, such workforce practices have become powerful processes for demonstrating a firm's performance.

As research in workforce practices matures, academics must move beyond simply justifying practices. They need to better understand how these practices affect various aspects of business performance, such as the financial, environmental, or social aspects (Lee & Kim, 2020). Some academics have begun to refine their understanding of workforce practices by utilizing signaling theory (Lin et al., 2022). Signaling theory was first developed to explain ambiguity in workforce practices. Spence's (1974) findings suggest that a firm's profitability may be hindered by a lack of information about unobservable workforce practices. The signaling function of information symmetry distinguishes high-quality employees from low-quality employees. Spence's (1974) study led to a significant amount of scholarship that utilized signaling theory in management research, including corporate governance (Bae et al., 2018), entrepreneurship (Bafera & Kleinert, 2022), strategic management (Suazo et al., 2009), and business reporting (Hahn & Reimsbach, 2021). The signaling theory perspective in business management is supported by these studies; however, workforce practices have been treated as a single set of practices. While academics have treated workforce practices as a single set of universal practices that do not allow for customization, several studies have highlighted the significance of customization. Guest et al. (2021) begin to theorize that workforce practices have a focus on both control and affect and that different contextual settings require different workforce practices.

Growing awareness of the influence of workforce practices on financial results and mounting stakeholder demands for environmental and social performance drive the increasing frequency of sustainability initiatives (Lopez-Cabrales & Valle-Cabrera, 2020). For instance, current environmental

gains have been offset by unsustainable trends in global consumption of natural resources, requiring more robust workforce practices to deal with the change in the natural balance (Li & Yeo, 2021). Firms must comprehend how to enhance workforce practices to maximize their sustainability value (Ogunyemi & Laguda, 2016), and a one-size-fits-all approach to workforce sustainability practices may not yield optimum results. Different firms may require different approaches to optimally utilize workforce practices to achieve higher sustainability performance. For instance, is it appropriate for a commodity-based manufacturer to use the same workforce practices as a high-tech manufacturer? The aim of this study is to analyze how firms differ in their workforce practices and the effect of these choices on sustainability performance. Therefore, the focus of this study is on various workforce practices that can improve the environmental and social performance of firms.

This research draws on signaling theory, which can be used as a starting point to empirically investigate the contextual aspects impacting the relationship between various workforce practices and firms' sustainability performance. This paper builds on the signaling argument and empirically tests the influence of four different contextual workforce practices impacting firms' environmental and social performance. These four orientations or types of workforce practices include: 1) diversity and opportunity, 2) employment quality, 3) health and safety requirements, and 4) training and development. Diversity and opportunity involve ensuring that people from diverse backgrounds are culturally and socially accepted and integrated into the workforce (Armstrong et al., 2010). Employment quality demonstrates the social and economic progress of workers and provides them with a sense of identity, but it could also pose risks to their well-being (Gallie, 2007). Health and safety requirements identify and prevent hazards that could cause injury, mental and physical illness, and fatalities at work (Vujica-Herzog & Harih, 2020). Training and development is a term that refers to educational activities that are conducted within a firm to improve the knowledge and skills of employees while providing information and instructions on how to improve the performance of specific tasks (Scheel et al., 2014).

This research marks the first empirical study to differentiate workforce practices into four separate yet related bundles. The paper contributes to the signaling perspective of business management, and empirically addresses the research question:

RQ: How can firms adapt different contextual workforce practices to achieve better environmental and social performance?

The findings have a direct impact on firms in supporting their choice of the right mix of practices to tailor workforce management and achieve better sustainability performance for their environmental and social initiatives.

The remainder of the paper is organized as follows. Section 2 considers the theoretical foundations of the proposed model, as well as the specification of key variables and the formulation of hypotheses. Section 3 describes the research method and empirical data collected for the study. Section 4 presents the data analysis and results. Section 5 presents the discussion of the results. Finally, Section 6 presents the conclusions of the study and some recommendations for future research.

4.2 Theoretical Background and Hypotheses Development

4.2.1 Research Framework

Signaling theory can be a helpful tool in identifying different orientations of workforce practices and examining their impact on a firm's sustainability performance. According to Bergh et al. (2014), signalers are those who are insiders (such as managers) who gather information about people, products, or organizations (Spence, 1974; Ki & Kim, 2022; Brown et al., 2020), that is not available to outsiders. The researchers define receivers as outsiders who have no knowledge about the firm in question but are interested in receiving it. Mavlanova et al. (2012) state that there is information asymmetry between signalers and receivers; the signalers' information is better than the receivers' information. Signaling theory focuses on reducing information asymmetries between signalers and receivers by depicting their behavior when they have access to different pieces of information (Spence, 1974). Signalers have the responsibility of deciding when and how to signal information, and receivers have the responsibility of interpreting that signal (Bokek-Cohen, 2018). Using this theoretical premise, the signal given by superior workforce practices cannot be replicated by inferior workforce practices, in what is known in economics as a separating equilibrium.

Spence's (1974) example suggests that effective workforce practices are a reliable indicator of a firm's performance, based on two assertions: 1) effective workforce practices can improve a firm's performance, and 2) inferior workforce practices cannot be disguised as superior workforce practices. Three categories can be used to categorize the signal for workforce practices: intent, camouflage, and need (Albertini, 2019). Intent signals are used to indicate future actions when a rival initiates a competitive action. In such a scenario, a firm may indicate its determination to improve its workforce

practices (Schüler et al., 2023). Camouflage signals conceal a possible obligation for the workforce by deflecting attention from a possible susceptibility. For example, firms that encourage diversity in their workforce demonstrate legitimacy by including backgrounds, ideas, and beliefs to divert attention from the responsibility for workforce discrimination (Tuo et al., 2020). Need signals are used to indicate communication requirements to the receiver. For instance, managers signal their need for funds and resources to improve various workforce practices, and the owner decides which signals the greatest need in terms of improving the firm's performance (Mishra, 2013).

According to signaling theory, workforce practices, such as “diversity and opportunity”, can be used as signaling devices to inform a firm's sustainability performance (Spence, 1974). Similarly, Greening and Turban (2000) find that companies tend to improve their workforce practices with the help of superior financial performance, confirming that financial performance is used by insiders in firms to communicate the superior quality of their workforce practices. Based on signaling theory, Gupta (2021) argues that profitable firms differentiate themselves from less profitable firms by generating a positive relationship between workforce practices and sustainability performance. Likewise, Vesal et al. (2021) developed a hypothesis about the relationship between workforce practices and sustainability performance based on signaling theory: they found that effective workforce practices led to a firm's higher sustainability performance.

Firms communicate their seriousness regarding environmental and social sustainability to financial markets through various workforce practices, and the signaling theory perspective helps address information asymmetry regarding workforce practices (Courtney et al., 2017). The present study hypothesizes four different types of workforce practices — diversity and opportunity, employment quality, health and safety, and training and development — and investigates their direct effect on the environmental and social performances of firms. This study explores the mediating effect of financial performance on the relationship between workforce practices and the environmental and social performances of firms. This study also examines the moderated mediation effect of firm age, firm size, and industry type on the environmental and social performance of firms.

4.2.2 Environmental Performance of Firms and Workforce Practices

Sharma et al. (2020) demonstrated a positive impact of workforce practices on environmental performance. A positive association between workforce practices and environmental performance has also been shown by a series of scholars (Dal Maso et al., 2020; McCarty, 2011; Nisar et al., 2022). In

contrast, Arimura et al. (2021) observe that workforce practice measures are unrelated to the firm's environmental performance.

The firm's commitment to environmental sustainability improves in the presence of workforce practices (Ahmed et al., 2019). It has been shown that workforce practices could enhance environmental initiatives taken up by firms, which improves the long-term benefits of firms' environmental performance (Van Tiem et al., 2012). Investors, for instance, take into account a firm's perception of workforce practices (Martínez-del-Río et al., 2023). Meuer (2017) studied workforce practices in the context of the UK, where they found that workforce practices are, to varying extents in different firms, generally a strategic priority. Such a strategic priority helps managers improve their firms' environmental sustainability. However, Suganthi (2019) made contradictory observations in which no impacts of workforce practices were documented on environmental sustainability.

We developed our hypotheses based on the above arguments regarding environmental sustainability in favor of workforce practices and the signaling theory's proposition that firms send signals about environmental sustainability via their strategic priorities and actions concerning workforce practices.

4.2.2.1 Direct Effect of Workforce Practices on Environmental Performance of Firms

The first hypothesis (H1) concerns the impact of workforce practices on a company's environmental performance. Firms will perform better environmentally if they possess superior workforce management capabilities, according to effective workforce practices, compared to ineffective workforce practices that lack these capabilities (Ahmed et al., 2019). These firms are more capable than their competitors of generating and disseminating environmental information, sensing environmental capabilities, and responding to changing environmental regulations. For instance, the effectiveness of these firms' workforce practices facilitates the identification of comprehensive environmental solutions, which in turn contribute to the measurement, monitoring, and reporting of carbon emissions. Firms can learn faster than their competitors by combining effective workforce practices with environmental sensing capabilities. These practices and capabilities can be fused to develop innovative environmental solutions, introduce new green products or processes to the market, and improve a firm's environmental performance. As a result, the following main hypothesis (H1) and its sub-hypotheses are tested:

H1: Workforce practices are positively correlated to the environmental performance of firms.

H1a: Diversity and opportunity in the workforce are positively correlated to the environmental performance of firms.

H1b: Employment quality in the workforce is positively correlated to the environmental performance of firms.

H1c: Health and safety requirements in the workforce are positively correlated to the environmental performance of firms.

H1d: Training and development in the workforce are positively correlated to the environmental performance of firms.

4.2.2.2 Mediating Effect of Financial Performance on the Relationship between Workforce Practices and Environmental Performance of Firms

Firms' financial performance is responsible for the relationship between workforce practices and environmental performance, which is mainly influenced by signaling theory and the study setting (Visvizi, 2022). Therefore, the underlying steps that impact workforce practices on environmental performance through the financial well-being of a firm are quantified using a mediator variable, which is the firm's financial performance.

H2: The financial performance of firms mediates the relationship between workforce practices and the environmental performance of firms.

H2a: The financial performance of a firm mediates the relationship between diversity and opportunity in the workforce and the firm's environmental performance.

H2b: The financial performance of a firm mediates the relationship between employment quality in the workforce and the firm's environmental performance.

H2c: The financial performance of a firm mediates the relationship between health and safety requirements in the workforce and the firm's environmental performance.

H2d: The financial performance of a firm mediates the relationship between training and development in the workforce and the firm's environmental performance.

4.2.2.3 Moderated Mediation Effect of Firm Age on the Environmental Performance of Firms

Firm age is hypothesized to influence workforce practices and is relevant in the context of moderating the financial performance mediation relationship between workforce practices and firm environmental performance. This is because younger firms might play a more pronounced role in channeling the effects of workforce practices on environmental performance. Hence, the next hypothesis (and its sub-hypotheses) is based on this argument:

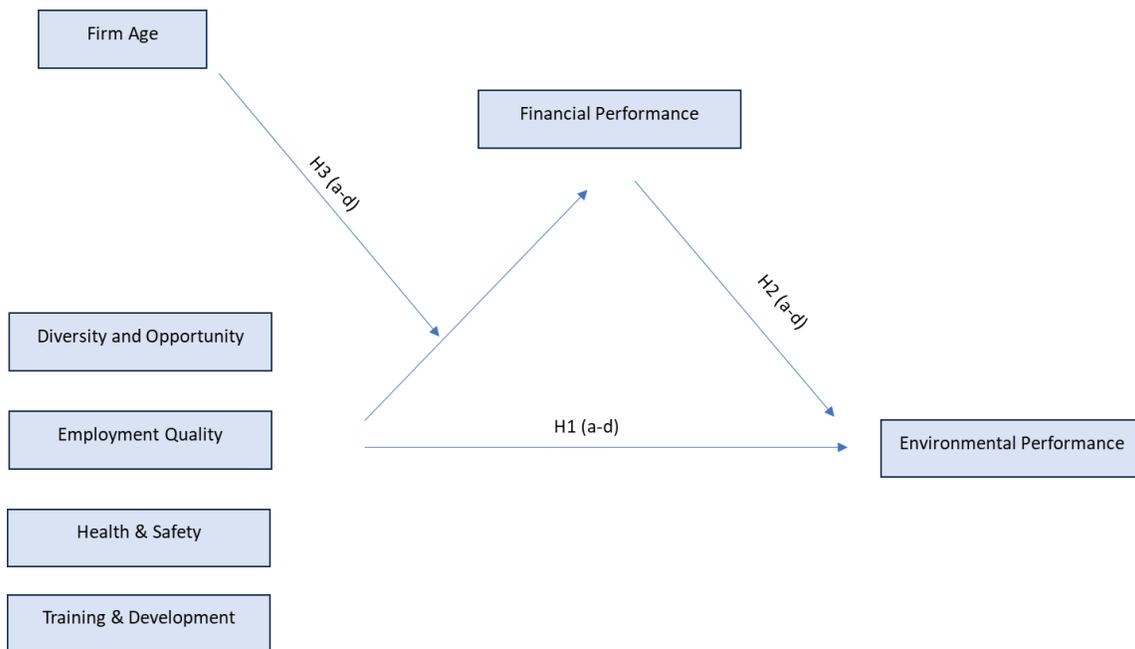
H3: The firm age moderates the mediating relationship of financial performance between a firm's workforce practices and its environmental performance.

H3a: The firm age moderates the mediating relationship of financial performance between diversity and opportunity in the workforce and the firm's environmental performance.

H3b: The firm age moderates the mediating relationship of financial performance between employment quality in the workforce and the firm's environmental performance.

H3c: The firm age moderates the mediating relationship of financial performance between health and safety requirements in the workforce and the firm's environmental performance.

H3d: The firm age moderates the mediating relationship of financial performance between training and development in the workforce and the firm's environmental performance.



Note: Research Model A is a moderated mediation model exhibiting the direct impact of workforce practices, mediating effect of financial performance, and moderating effect of firm age on environmental performance of firms.

Figure 4.1: Research Model A

4.2.3 Social Performance of Firms and Workforce Practices

The association between social sustainability and firms' workforce practices has been studied by Greening and Turban (2000); and some studies have found a positive relationship between social measures and workforce practices (Chambost et al., 2019; Newman et al., 2015; Reverte et al., 2016). A study by Nirino et al. (2021) also reported a negative relationship between the two constructs; however, González-Rodríguez et al. (2019) reported only a partial association. Furthermore, Beji et al. (2021) studied the impact of the diversity dimension of workforce practices on social performance, and Johanson et al. (2022) demonstrated a positive relationship between social sustainability and the firm's health and safety practices. As discussed, firms (from a signaling perspective) send signals through effective workforce practices for their competitive advantage and thereby create value for all stakeholders via their social efforts and initiatives (Bergh et al., 2014). Under this theoretical proposition based on relationships between social sustainability and the firm's social performance, we develop the hypotheses in the sections below.

4.2.3.1 Direct Effect of Workforce Practices on Social Performance of Firms

The fourth hypothesis (H4) examines the impact of workforce practices on a firm's social performance. Effective workforce practices are predicted to have a positive impact on social performance. The heterogeneity of social responses and the impacts of certain pressures can be discerned through consideration of workforce influences on firms that operate within a complex structure. In addition, how workforce norms influence social performance can be examined using signaling theory (Bae et al., 2018) because operationalizing social performance can be based on decisions beyond traditional profit maximization (Valmohammadi, 2014), and without effective workforce practices, managers may not be able to commit their firms to socially responsible activities. Through effective workforce management, the signaling perspective has the potential to alleviate some of the concerns associated with achieving higher social performance. As a result, the following hypotheses are tested:

H4: Workforce practices are positively correlated to the social performance of firms.

H4a: Diversity and opportunity in the workforce are positively correlated to the social performance of firms.

H4b: Employment quality in the workforce is positively correlated to the social performance of firms.

H4c: Health and safety requirements in the workforce are positively correlated to the social performance of firms.

H4d: Training and development in the workforce are positively correlated to the social performance of firms.

4.2.3.2 Mediating Effect of Financial Performance on the Relationship between Workforce Practices and Social Performance of Firms

Firms' financial performance is responsible for the relationship between workforce practices and social performance, which is mainly influenced by signaling theory and the study setting (Reverte et al., 2016). Hence, the underlying steps that impact workforce practices on social performance through the financial well-being of a firm are quantified using a mediator variable, which is a firm's financial performance.

H5: The financial performance of firms mediates the relationship between firms' workforce practices and social performance.

H5a: The financial performance of a firm mediates the relationship between diversity and opportunity in the workforce and the firm's social performance.

H5b: The financial performance of a firm mediates the relationship between employment quality in the workforce and the firm's social performance.

H5c: The financial performance of a firm mediates the relationship between health and safety requirements in the workforce and the firm's social performance.

H5d: The financial performance of a firm mediates the relationship between training and development in the workforce and the firm's social performance.

4.2.3.3 Moderated Mediation Effect of Firm Age on the Social Performance of Firms

The age of the firm is important in influencing the relationship between their performance, workforce practices, and social performance. This is because younger firms might play a more pronounced role in channeling the effects of workforce practices on social performance. Hence, we derive the following hypotheses as:

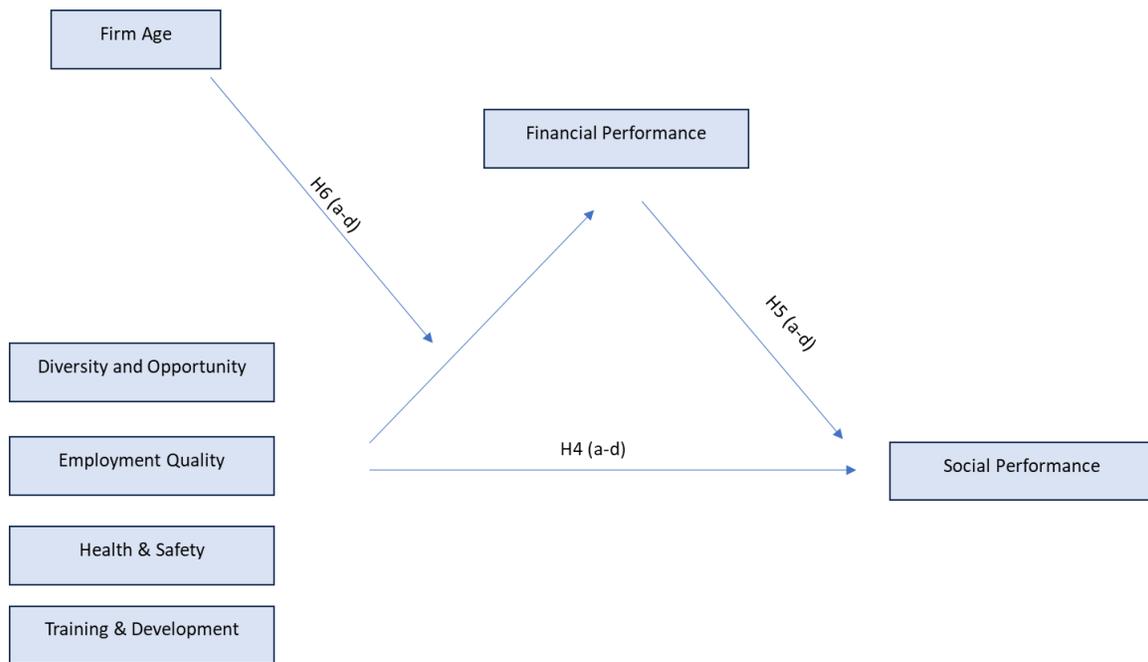
H6: The firm age moderates the mediating relationship of financial performance between firms' workforce practices and social performance.

H6a: The firm age moderates the mediating relationship of financial performance between diversity and opportunity in the workforce and the firm's social performance.

H6b: The firm age moderates the mediating relationship of financial performance between employment quality in the workforce and the firm's social performance.

H6c: The firm age moderates the mediating relationship of financial performance between health and safety requirements in the workforce and the firm's social performance.

H6d: The firm age moderates the mediating relationship of financial performance between training and development in the workforce and the firm's social performance.



Note: Research Model B is a moderated mediation model exhibiting the direct impact of workforce practices, mediating effect of financial performance, and moderating effect of firm age on social performance of firms.

Figure 4.2: Research Model B

4.3 Research Methodology

4.3.1 Sample

Canada serves as the focus of this empirical investigation. We concentrate on a representative sample of large and actively traded Canadian firms listed on the Toronto Stock Exchange (TSX) in 2022. The Refinitiv database is primarily employed in our study, based on previous research (Disli et al., 2022). This database is an international platform that gathers and offers environmental, social and governance (ESG) data on over 9,000 firms worldwide. The Refinitiv database ranks 224 TSX firms in our sample for workforce practices, environmental performance, and social performance scores.

4.3.2 Variables and Measures

Variables used in the analyses are defined as follows. The environmental performance and social performance of firms are taken as dependent variables. The data on environmental performance and social performance of firms are gathered from the Refinitiv database. The financial performance of

firms, a mediating variable, was measured using return on assets (ROA) and return on equity (ROE). These values were derived from individual firms' annual reports. Workforce practices, including diversity and opportunity, employment quality, health and safety requirements, and training and development, are used as independent variables. Data on firms' workforce practices are gathered from the Refinitiv database. We used three control variables: firm age, firm type, and industry type. These three variables suggested in the literature are used because they might affect the relationships between the independent variables and the environmental and social performance of firms. Firm age was added as a moderating variable as the firm age might moderate the relationship between workforce practices and the firm's sustainability performance. Firm type and industry type were used as the other two control variables to establish the robustness of the results.

4.3.3 Statistical Model

We conducted linear regression and moderation mediation analyses to test the effect of workforce practices on the environmental and social performance of firms.

The moderated mediation model allows the effect of quality of workforce practices (X) on the environmental and social performance of firms mediated through the financial performance of firms (M) and moderated by firm age (W), which can be represented as:

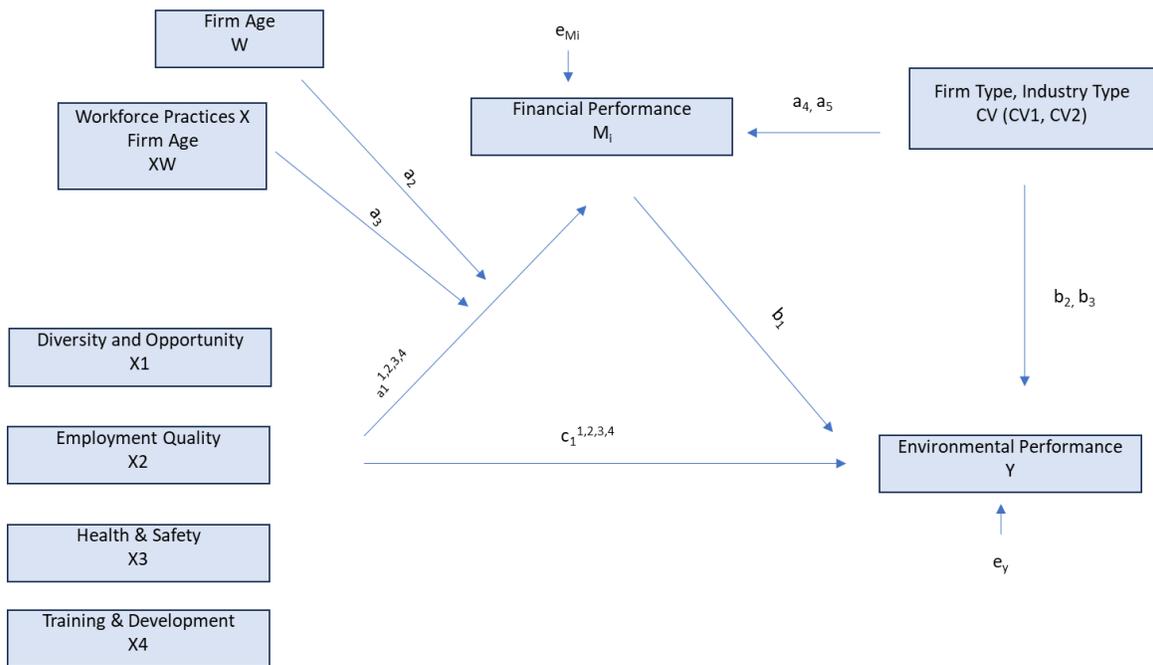
$$Y = i_{vy} + C_1^{1,2,3,4}X + b_1M + w + E_y$$

where the moderated effect (M) and the moderated mediated effect (w) of X on Y are expressed as:

$$M = i_{mp} + a_1^{1,2,3,4}X + a_2W + a_3XW + e_{lm}$$

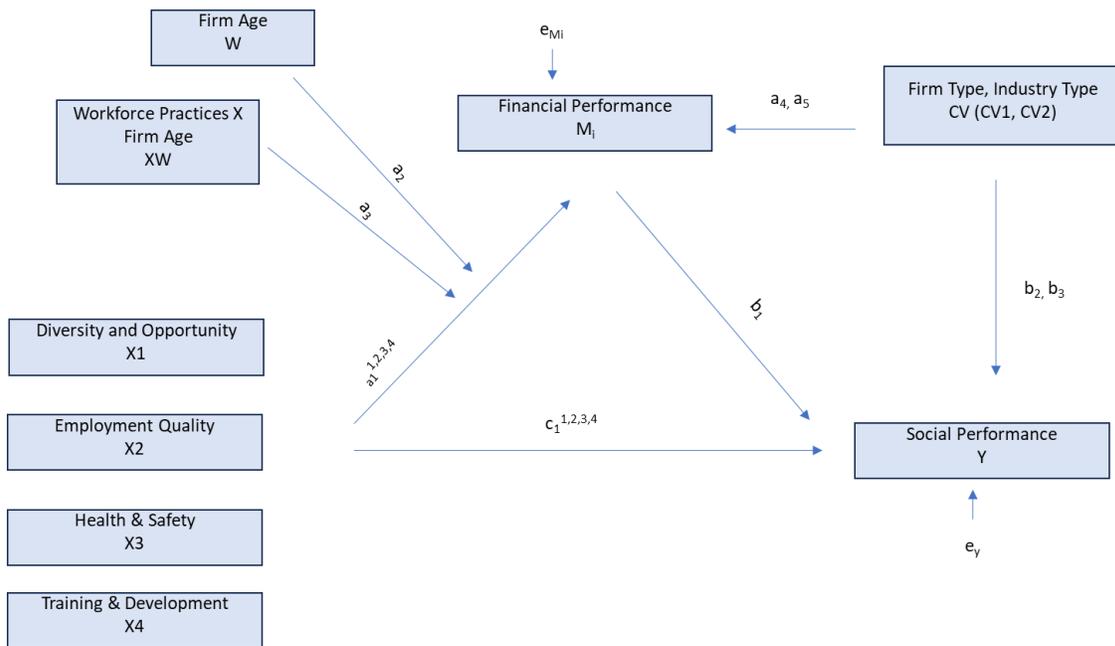
$$w = (a_1^{1,2,3,4} + a_3W) b_1 = a_1^{1,2,3,4}b_1 + a_3b_1W$$

Figures 4.3 and 4.4 below explain the moderated mediation model, exhibiting the direct impact of workforce practices, the mediating effect of financial performance, and the moderating effect of firm age on the environmental and social performance of firms.



Note: Statistical Model A is a moderated mediation model exhibiting the direct impact of workforce practices, mediating effect of financial performance, and moderating effect of firm age on environmental performance of firms.

Figure 4.3: Statistical Model A



Note: Statistical Model B is a moderated mediation model exhibiting the direct impact of workforce practices, mediating effect of financial performance, and moderating effect of firm age on social performance of firms.

Figure 4.4: Statistical Model B

4.4 Results

4.4.1 Descriptive Statistics

Financial performance (mediating variable) exhibits an average score of 0.489, with a standard deviation of 0.282. The scores range from a minimum of 0.035 to a maximum of 0.967. Environmental performance (dependent variable) demonstrates a mean score of 0.395 and a standard deviation of 0.266. The scores range from a low value of 0 to a high value of 0.953. Social performance (dependent variable) holds a mean score of 0.492 and a standard deviation of 0.220. The scores range from 0.025 to 0.965. The independent variables, collectively referred to as workforce practices, include diversity and opportunity, with a mean of 0.553, and a standard deviation of 0.273; employment quality with a mean of 0.556 and a standard deviation of 0.314; health and safety, with a mean of 0.593 and a standard deviation of 0.303; and training and development, with a mean of 0.516 and a standard deviation of 0.314. The moderator variable Firm age displays an average of 44.62 years and a standard deviation of 38.37 years. Firm age spans from a minimum of 4 years to a maximum of 214 years. Firm type, a

control variable, has an average score of 1.64, with a standard deviation of 0.482. Industry type is characterized by a mean of 6.91 and a standard deviation of 2.73.

Table 4.1 shows that financial performance is positively correlated with environmental performance ($r = 0.466$) and social performance ($r = 0.410$). Environmental performance shows a positive correlation with financial performance ($r = 0.466$) and social performance ($r = 0.778$), and social performance is positively correlated with financial performance ($r = 0.410$). Each of the workforce variables (diversity and opportunity, employment quality, health and safety, and training and development) demonstrates positive correlations with both environmental and social performance. Furthermore, firm age is positively correlated with environmental performance ($r = 0.233$), social performance ($r = 0.373$), and financial performance ($r = 0.270$).

The correlation analysis reveals important insights into the linear relationships between the independent variables and the dependent variables. Financial performance demonstrates a positive linear relationship with both environmental performance and social performance. This suggests that higher financial performance tends to coincide with better environmental and social performance outcomes. All independent variables demonstrate a positive linear correlation between environmental performance and social performance. These correlations highlight that firms with more favorable attributes in terms of organizational diversity, quality of employment, occupational safety and health, and talent development tend to achieve higher environmental and social performance. In addition, all control variables (firm type, industry type) display negative linear correlations with environmental performance and social performance. Therefore, these correlations indicate that different types of firms and industries may influence environmental and social performance differently.

Table 4.1: Descriptive Statistics

	Mean	SD.	Min	Max	1	2	3	4	5	6	7	8	9	10
1. Financial Performance	.489	.282	.035	.967	1.000									
2. Environmental Performance	.395	.266	0	.953	.466**	1.000								
3. Social Performance	.492	.220	.025	.965	.410**	.778**	1.000							
4. Diversity and Opportunity	.553	.273	.020	.911	.365**	.556**	.509**	1.000						
5. Employment Quality	.556	.314	.027	.956	.231**	.190**	.110**	.237**	1.000					
6. Health & Safety	.593	.303	.033	.959	.289**	.522**	.472**	.306**	.215**	1.000				
7. Training and Development	.516	.314	.035	.886	.512**	.718**	.643**	.532**	.230**	.472**	1.000			
8. Firm Age	44.62	38.37	4	214	.233**	.373**	.270**	.254**	-.061	.117	.223**	1.000		
9. Firm Type	1.64	.482	1	2	-.180*	-.045	-.078	-.037	-.123	-	-.117	.099	1.000	
										.219**				
10. Industry Type	6.91	2.73	1	11	-	-	-	-	.070	-.070	-	-.118	.446**	1.000
					.264**	.303**	.228**	.017**			.258**			

Note: ** $p < 0.01$, * $p < 0.05$

Table 4.2 shows the frequency distribution of firm type and industry type. In terms of firm type, most firms belong to the “Services” category, accounting for 63.84%, while the remaining 36.16% are categorized as “Manufacturing” firms. This distribution underscores a higher representation of service-oriented firms within the dataset. Meanwhile, the industry type variable reveals a diverse landscape, with various sectors represented. The most prevalent industries include “Technology” at 41.52%, “Mining” at 16.96%, and “Financial services” at 7.14%. The contribution of other industries (from “Oil & gas” to “Transportation”) is also presented in Table 2 in descending order of their percentage values. This comprehensive range of industry types reflects diverse coverage across multiple sectors within the dataset. These categorical variables provide context for the composition of the data, and these variables additionally have the potential to serve as important control variables in subsequent analyses, enhancing our understanding of relationships between other variables.

Table 4.2: Frequency Distribution of Firm Type and Industry Type

	Categorical Variables	Freq.	Percent
Firm Type	Services	143	63.84%
	Manufacturing	81	36.16%
	Comm. & Media	8	3.57%
	Consumer Products & Services	14	6.25%
	Financial Services	16	7.14%
	Industrial Products & Services	12	5.36%
	Life Sciences	7	3.13%
Industry Type	Mining	38	16.96%
	Oil & Gas	15	6.70%
	Real estate	5	2.23%
	Technology	93	41.52%
	Transportation	5	2.23%
	Utilities & Pipelines	11	4.91%

4.4.2 Results for Environmental Performance

Table 4.3 summarizes a detailed study that aims to understand how different factors affect the environmental performance of firms. Eight models provide information about direct, mediating, and moderated mediation effects on the environmental performance of firms.

Table 4.3: Linear Regression Analysis for the Environmental Performance of Firms

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Diversity and Opportunity	.502**				.412**			
Employment Quality		.200**				.119*		
Health and Safety			.483**				.413**	
Training and Development				.582**				.532**
Firm Type	.048	.087*	.134**	.063*	.063	.094**	.136**	.069*
Industry Type	-.025**	-.038**	-.036**	-.017**	-.020**	-.028**	-.029**	-.016**
Firm Age -> FP					.004**	.002*	.005**	.003**
Financial Performance (Mediation)					.262**	.367**	.279**	.118*
Diversity and Opportunity × Age -> FP					-.004**			
Employment Quality × Age -> FP						-.000		
Health and Safety × Age -> FP							-.006**	
Training and Development × Age -> FP								-.004*
Index of moderated mediation (Index) [LLCI, ULCI]								
Firm age					-.001 [-.002, -.00]	-.000 [-.001, .000]	-.002 [-.003, -.001]	-.000 [-.001, -.000]
F-Statistic	41.04**	13.54**	46.66**	86.47**	39.97**	22.05**	47.29**	67.53**
R²	0.359	0.156	0.389	0.541	0.422	0.287	.463	.552

Note: ** $p < 0.01$, * $p < 0.05$. LLCI – Lower level of the 95% confidence interval; ULCI – Upper level of the 95% confidence interval.

4.4.2.1 Direct Effect Between Workforce Practices and Environmental Performance of Firms

Starting with Model 1 in Table 4.3, diversity and opportunity make a significant impact on environmental Performance. For every step up in diversity and opportunity, environmental performance tends to go up by about 0.502, showing a positive connection. Therefore, H1a is accepted.

Moving on to Model 2, our attention shifts to employment quality. Here, we see a similar positive trend—higher levels of employment quality match up with better environmental performance. Roughly speaking, each time employment quality goes up by one-unit, environmental performance goes up by about 0.200. Therefore, H1b is accepted.

Progressing to Model 3, we assess the health and safety impact on environmental performance. When health and safety requirements in the workforce go up, environmental performance tends to rise by approximately 0.483. Therefore, H1c is accepted.

Finally, Model 4 centers on training and development. This variable also contributes positively to environmental performance. If training and development increases by one-unit, environmental performance tends to rise by around 0.582. Therefore, H1d is accepted.

4.4.2.2 Indirect Mediating Effect of Financial Performance on the Relationship between Workforce Practices and Environmental Performance of Firms

Model 5 uncovers that financial performance acts as a vital mediator, intervening in the impact of diversity and opportunity on environmental performance. The coefficient of 0.2623 underscores the importance of this mediation. Therefore, H2a is accepted.

In Model 6, the findings reveal that financial performance mediates the association between employment quality and environmental performance, with a coefficient of 0.3673 indicating its significance. Therefore, H2b is accepted.

In Model 7, financial performance once again takes on the role of mediator. It bridges the gap between health and safety and environmental performance, as evidenced by a coefficient of 0.2786. Therefore, H2c is accepted.

In the context of Model 8, the mediating role of financial performance remains consistent, conveying the influence of training and development on environmental performance with a coefficient of 0.1179. Therefore, H2d is accepted.

4.4.2.3 Moderated Mediation Effect of Firm Age on the Environmental Performance of Firms

In Model 5, the index of moderated mediation emphasizes the role of firm age. With a value of -0.0011 and a confidence interval of [-.002, -.00], firm age significantly influences the mediation process. This indicates that younger firms might play a more pronounced role in channeling the effects of diversity and opportunity to environmental performance through financial performance. This nuanced insight illuminates how various firm ages contribute uniquely to these complex relationships. Therefore, H3a is accepted.

In Model 6, the index of moderated mediation does not suggest a substantial influence of firm age (with a value of -0.0001 (rounded to -0.000) and a confidence interval of [-0.0012, 0.0008]), which aligns with the finding that firm age does not notably impact the mediation process. This insight demonstrates how financial performance mediates between employment quality and environmental performance, without any significant firm age moderation effect. Therefore, H3b is rejected.

In Model 7, the index of moderated mediation unveils that firm age significantly alters the mediation process, with a value of -0.0018 (rounded to -0.002) and a confidence interval of [-0.0029, -0.0009] rounded to ([-0.003, -0.001]). This indicates that younger firms potentially play a more pronounced role in influencing the mediation process between health and safety and environmental performance through financial performance. Therefore, H3c is accepted.

The index of moderated mediation provides nuanced insights, indicating that firm age subtly influences the mediation process between training and development and environmental performance through financial performance. This effect is captured by the index value of -0.0004 (rounded to -0.000), supported by a confidence interval of [-0.0010, -0.0000]. Therefore, H3d is accepted.

4.4.3 Results for Social Performance

Table 4.4 summarizes a detailed study that aims to understand how different factors affect firms' social performance. Eight models provide information about direct, mediating, and moderated mediation effects on the social performance of firms.

Table 4.4: Linear Regression Analysis for Social Performance of Firms

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Diversity and Opportunity	.389**				.325**			
Employment Quality		.159**				.100*		
Health and Safety			.352**				.301**	
Training and Development				.439**				.404**
Firm Type	.002	.033	.066*	.014	.013	.038	.067*	.018
Industry Type	-.012*	-.022**	-.021**	-.006**	-.009	-.015**	-.016**	-.006
Firm Age -> FP					.004**	.002*	.005**	.003**
Financial Performance (Mediation)					.186**	.267**	.207**	.081
Diversity and Opportunity × Age -> FP					-.004**			
Employment Quality × Age -> FP						-.000		
Health and Safety × Age -> FP							-.006**	
Training and Development × Age -> FP								-.004*
Index of moderated mediation (Index) [LLCI, ULCI]								
Firm age					-.001 [-.002, -.00]	-.000 [-.000, .000]	-.001 [-.002, -.001]	-.000 [-.001, -.000]
F-Statistic	28.36**	8.41**	28.05**	52.71**	26.42**	14.09**	27.81**	40.60**
R ²	0.279	0.103	0.277	0.418	0.326	0.205	.337	.426

Note: ** $p < 0.01$, * $p < 0.05$. LLCI – Lower level of the 95% confidence interval; ULCI – Upper level of the 95% confidence interval.

4.4.3.1 Direct Effect Between Workforce Practices and Social Performance of Firms

Model 1 underscores the importance of diversity and opportunity, indicating that enhancing these aspects by one unit could lead to a 0.389 increase in social performance. Therefore, H4a is accepted.

Model 2 reveals a positive connection between social performance and employment quality, implying that a one-unit improvement in employment quality is associated with a 0.159 rise in social performance. Therefore, H4b is accepted.

In Model 3, the relationship between social performance and health and safety is significant, highlighting that augmenting health and safety by one unit could result in a 0.352 increase in social performance. Therefore, H4c is accepted.

Model 4 explores the link between social performance and training and development, revealing that a one-unit improvement in training and development corresponds to a 0.439 increase in social performance. Therefore, H4d is accepted.

4.4.3.2 Indirect Mediating Effect of Financial Performance on the Relationship between Workforce Practices and Social Performance of Firms

In Model 5, the results show that financial performance acts as a vital mediator, intervening in the impact of diversity and opportunity on environmental performance. The coefficient of 0.186 underscores the importance of this mediation. Therefore, H5a is accepted.

In Model 6, the findings reveal that financial performance mediates the association between employment quality and environmental performance, with a coefficient of 0.267 indicating its significance. Therefore, H5b is accepted.

In Model 7, financial performance once again takes on the role of mediator. It bridges the gap between health and safety and environmental performance, as evidenced by a coefficient of 0.207. Therefore, H5c is accepted.

In Model 8, the mediating role of financial performance remains consistent, conveying the influence of training and development on environmental performance with a coefficient of 0.081. Therefore, H5d is accepted.

4.4.3.3 Moderated Mediation Effect of Firm Age on the Social Performance of Firms

In Model 5, the index of moderated mediation unveils that firm age significantly alters the mediation process between diversity and opportunity and social performance, with a value of -0.001 and a confidence interval of [-0.002, -0.00]. Therefore, H6a is accepted.

In Model 6, the index of moderated mediation unveils that firm age does not significantly alter the mediation process between employment quality and social performance, with a value of -0.000 and a confidence interval of [-0.000, 0.000]. Therefore, H6b is rejected.

In Model 7, the index of moderated mediation unveils that firm age significantly alters the mediation process between health and safety and social performance, with a value of -0.001 and a confidence interval of [-0.002, -0.001]. Therefore, H6c is accepted.

In Model 8, the index of moderated mediation unveils that firm age significantly alters the mediation process between training and development and social performance, with a value of -0.000 and a confidence interval of [-0.001, -0.000]. Therefore, H6d is accepted.

4.5 Discussion

The inferential statistical analysis discussed in the previous section examined whether each workforce practice was effective for achieving environmental and social performances from the perspective of Canadian firms listed in the TSX. The goal of the present study was to assess the influence of workforce practices on the environmental and social performance of firms and to validate the identified practices on a sample of Canadian firms. The Refinitiv database was used to achieve the goals of the study, examining four workforce practices as highly influential in firms' sustainability performance. This section provides an attribute-level discussion of these workforce practices and highlights significant findings from the statistical analyses previously presented.

4.5.1 Diversity and Opportunity

A deep examination of the inferences of diversity and opportunity on the environmental and social performance of firms has led to firms' commitment to operating ethically and responsibly. Diversity practices encompass a broad range of topics, such as environmental sustainability, social responsibility, community engagement, and ethical business practices. Previous studies have shown that diversity can improve sustainability performance by adapting best practices regarding inclusion and enhancing firms' compliance with global trends and sustainability standards (Armstrong et al., 2010; Beji et al., 2021;

Ghaleb et al., 2021; Hansen & Seierstad, 2017). The findings in this paper also suggest that diversity practices can be seen as a component of a firm's sustainability initiatives. The results show that most firms from the data sample considered implementing diversity and inclusion practices, which is consistent with the previous literature, as a firm's environmental and social performance can be enhanced by valuing and leveraging the diversity of its workforce. Additionally, the results of this paper are consistent with the previous literature suggesting that firms can improve their understanding of and service for their diverse customer base through diversity practices, which can also contribute to their sustainability (Alodat et al., 2023).

The relationship between diversity practices and firm sustainability can be explained using various theories. Most studies that investigate the connection between diversity practices and sustainability performance are limited to examining only specific diversity aspects. According to signaling theory, signaling diversity and opportunity can lead to firms incorporating different perspectives (Ruhnke & Gabriel, 2013), and the inclusion of a wide range of views, opinions, and concerns in any sustainability discussion can enhance a firm's sustainability performance.

4.5.2 Employment Quality

In this paper, the relationship between employment quality and sustainability performance is examined. Whereas previous research has mostly relied on one dimensional approach to study this relationship (Sadri & Goveas, 2013), some papers have utilized multiple employment arrangements, which include indicators such as job dissatisfaction (Pang et al., 2023), perception of a negative safety climate (Jain et al., 2018), and inability to stay in employment (Lee & Chen, 2018). Therefore, attention has been given to the distinct and combined relationships between these outcomes and employment quality. Many of these studies focus on only one factor of employment quality; however, the literature on employment quality indicates that employment quality factors occur concurrently in definite configurations and are clustered in specific groups of workers. This paper utilizes an approach that simultaneously considers numerous aspects of employment quality to avoid the possibility of giving only a partial picture of the impact of a specific employment arrangement.

In recent decades, Canada's employment quality has been influenced by more flexibility and de-standardization in various aspects of employment conditions and relationships (Organization for Economic Co-Operation and Development [OECD], 2014). The consequences of these changes are still unclear, but an important topic discussed in this paper is the balance between work quality and

sustainability performance in contemporary labor markets. Not only do this paper's findings indicate that quality of employment is aligned with corporate sustainability objectives, but its results are in line with previous research in this field showing the importance of employment quality in firms' achievement of environmental and social performance (Gallie, 2007; Savitz et al., 2013; Wiengarten et al., 2017). Such a study of the relationship between employment quality and sustainability performance highlights an important fact: workers from the precarious, unsustainable cluster face a problematic situation (Lewchuk et al., 2011) in that precarious jobs cause workers to struggle with environmental and social performance. This paper's results agree with such findings, which suggest that a firm's sustainability performance is often influenced by the combination of favorable employment quality and sustainability initiatives. Thus, in most instances, the relationship between employment quality and sustainability outcomes remains dependent after considering intrinsic work quality.

4.5.3 Health and Safety Requirements

The challenges of sustainable development goals are related to the workforce's health and safety requirements. Both the environment and citizenry would face danger without healthy workers and safe working places. Unhealthy workers in unsafe conditions cannot maximize efficiency, which would lead to difficult economic conditions for firms and, in turn, impact society and the environment. Along with improving work-life balance, the workforce's health and safety requirements benefit both environmental and social performance (Ali et al., 2021; Johanson et al., 2022). For example, green space coverage at the workplace, as a health indicator, plays a positive role in health-related aspects of sustainability (Kim, 2021).

The importance of demonstrating and justifying the value of health and safety requirements for sustainability is growing. Despite multiple studies showing the positive environmental and social performance of firms that meet their health and safety requirements (Johanson et al., 2022; Vujica-Herzog & Harih, 2020), these estimates are not always straightforward. It can be challenging to determine the accurate costs and benefits of occupational health and safety, as costs are instantaneous while benefits generally accrue over time. Additionally, it can be challenging to quantify the benefits in monetary terms, such as measuring employees' motivation to incorporate safety and environmental stewardship into their daily work routine (de Oliveira Sousa et al., 2021). Despite these challenges, the findings of this paper are consistent with the previous literature, suggesting that firms must significantly

improve occupational health and safety both for their survival and for environmental and social protection.

4.5.4 Training and Development

Previous studies have suggested that training and development are significant factors in building organizational capabilities and skill enhancement. Scheel et al. (2014) asserted that talent development is essential for ecologically acceptable and socially sustainable economies. The development of organizational learning systems is crucial for firms' successful social and environmental performance. Such talent development has the potential to promote sustainability management, encourage employees to engage in green activities and create a pro-environmental culture (Birou et al., 2019; Bluff, 2019). Furthermore, intangible social and environmental knowledge-based processes can be aligned with a firm's strategic objectives. This paper, in accordance with previous research, evaluated sustainability performance after training and found that sustainability and training are positively related.

This paper not only provides new insights into the importance of training and development but also provides empirical findings supporting the positive impact of talent development on sustainability performance, including the environmental and social performance of firms. Signaling theory plays a key role. This paper demonstrates that firms can provide personalized training, coaching, and advisory solutions based on signaling theory and its successful application. Furthermore, the results of our paper agree with the concept of producing tangible environmental and socially driven results and establishing sustainable businesses.

4.6 Conclusion

In accordance with previous theory, our research indicates that a firm's workforce practices have a positive impact on its social and environmental performance. Additionally, the financial performance of firms has a positive correlation with workforce practices and sustainability performance. These results support the findings of Ameer and Othman (2012), Reverte et al. (2016), and Visvizi (2022). The inclusion of organizational diversity, quality of employment, occupational safety and health, and talent development into the model, and creating a reliable and valid scale for measuring social and environmental performance, extends the work done by Alodat et al. (2023), Johanson et al. (2022), Sadri and Goveas (2013) and Scheel et al. (2014). The purpose of this article was to expand the discussion on the concept of the workforce, expressed through the implementation of effective labor

practices to ensure sustainability; and to emphasize the importance of improving the workforce value proposition for the social and environmental performance of firms. Thus, the results of the present study show that “workforce practice” is an important element of a firm’s sustainability performance.

This study has investigated variables consistent with a firm’s sustainability performance. The social and environmental performance of firms is dependent on organizational workforce practices, which are mediated by the financial performance of firms. The findings of this paper also suggest that firm age significantly alters the mediation process. However, when interpreting the results of this research, it is important to consider several limitations. First, the cross-sectional nature of the data prevents firms from reporting on correlation with financial performance. Specifically, the cross-sectional variation in response rates is an issue when it comes to workforce practices. However, the Refinitiv database’s unique measurement of workforce practices make it the most suitable data source, in our opinion. Second, our research is limited by missing data in the Refinitiv database and the variable degree of relevance of the data. We aim to address the structural effects of each dimension of workforce practices, along with other dimensions of social and environmental performance of firms, separately, in future research. Furthermore, the study predicts that the selected firms see publishing data on workforce practices, as a signaling tool or as part of corporate sustainability activities, as an advantage. However, such published workforce practices are not necessarily indicative of the implementation and development of such practices. Furthermore, firms may choose not to disclose these workforce practices publicly in certain contexts where they are not widely adopted.

Overall, our results provide support for firms in a few regards. Firms embarking on sustainable plans should be motivated by our results to seek better workforce practices to support sustainability performance and should have some confidence in obtaining positive outcomes. Additionally, firms can use these workforce practices in conjunction with their financial performance to measure and monitor their sustainable practices and outcomes. Finally, firms will be able to find additional economic justification for their increased workforce practices and sustainability orientations if further data match the expectations created by this research.

Chapter 5

Conclusion

5.1 Summary of findings

The aim of this dissertation was to utilize sustainability management as an interdisciplinary topic and provide an overview of different governance mechanisms by examining and connecting concepts from the field of environmental studies and business management.

The scoping review was presented in Chapter 2, which examined a sample of 91 studies from 2016 to 2022. The study was able to identify various governance mechanisms using the cluster analysis technique including board-level governance, operational-level governance, and assurance-level governance. This study, being the first of its kind to systematically document the mediating role of governance on the relationship between sustainability and the financial performance of firms. The research resulted in three key findings. First, three main governance mechanisms were identified that influenced sustainability and financial performance of firms: Board, Operations, and Assurance. Second, there were three sustainability performance indicators that influenced the financial performance of firms: Environmental and Social combined, Environmental, and Social. Third, this study demonstrated the extent to which these governance mechanisms had mediated sustainability and financial performance of firms. Board governance had the most impact, followed by operational governance and then assurance governance.

The empirical research in chapter 3, further explored the governance mechanisms. The study used a sample of 224 large and actively traded Canadian firms listed on the Toronto Stock Exchange and used the partial least squares-structural equation modeling. The results showed a good fit between the data for both the measurement and structural equation models. The research resulted in three key findings. First, corporate governance mechanisms had a wide range of attributes for assessing sustainability in firms. Second, this study revealed partial mediation effects of board governance and operational governance singly and jointly as full mediation in the relationship between sustainability and financial performance of firms. Third, corporate governance factors could motivate firms to include sustainability considerations in their business operations.

Lastly, chapter 4 differentiated workforce practices into separate yet related bundles to empirically investigate the contextual aspects that affect the association between various workforce practices and

sustainability performances of firms. The study used a sample of 224 large and actively traded Canadian firms listed on the Toronto Stock Exchange and conducted linear regression analysis. There were three key findings in this study. First, a firm's sustainability performance may be hindered by a lack of information about unobservable workforce practices. Second, this study provided an attribute-level discussion of distinct workforce practices and highlighted significant findings from the statistical analyses presented. This included: workforce practices had a significant impact on the sustainability performance of firms; financial performance of firms acted as a mediator in the relationship between workforce practices and sustainability performance; and firm age moderated the mediation process in this relationship. Third, the selected workforce practices could guide firms to select the right mix of workforce practices for firms' sustainability performance.

5.2 Research Contributions

The research contributes to sustainability literature by using a governance perspective to pursue corporate sustainability. Since corporate governance can have a significant impact on firm performance, firms must understand how different governance mechanisms can enhance their business strategy and apply these principles accordingly. The research establishes a foundation for adopting a normative and functional approach to address contextual challenges while pursuing sustainability at a firm level. The resolution of conceptual fuzziness in qualitative research can be facilitated by separating realism and methodological bias, which is crucial for the normative basis of sustainability. The scoping review that took place during the initial phase of the research was instrumental in determining a path to incorporate sustainability into business operations through various governance mechanisms. The dissertation's empirical contributions highlighted the effectiveness of various governance and organizational mechanisms in relation to firm sustainability and financial performance. Hence, the dissertation's empirical contributions highlighted the effectiveness of various governance and organizational mechanisms in relation to firm sustainability and financial performance. Most of the previous research is focused on sustainability-financial performance relationship, which is rooted in an antecedent role that assists firms in carrying out organizational practices that generate competitive advantages (e.g., Duppati et al., 2019; Hormati et al., 2022; Pasko et al., 2022). This dissertation contributes to the existing literature by focusing on both exploratory factors that were helpful in generating a governance model and hypotheses, and contributory factors that tested those hypotheses and assessed how well the governance model matched the data. A field like corporate sustainability

that uses an interdisciplinary lens, using both exploratory and contributory factors, brings deeper insights to firms that are still doubtful about the business case for sustainability.

For academic contribution, the dissertation stresses the need to evaluate the capacity of governance practices that can bridge the gap between a firm's financial success and its two antecedents, the social and environmental performance of firms. The dissertation adds to the existing literature by using various governance mechanisms mediating both antecedent variables and financial success, thus defining a crucial enabler. There is not much research on corporate governance as a mediating factor in a firm's sustainability and financial performance. Most of the previous research has focused on moderating variables, such as firm characteristics, industry characteristics, business environment, and others (e.g., Cui et al., 2020; Grewatsch & Kleindienst, 2017; Haladu & Salim, 2016; Latip et al., 2022). This dissertation shows how firms can improve their decision-making process by making different governance choices that mediate their sustainability-financial performance relationships.

This dissertation is also among the first studies to segment governance practices and their specific characteristics, in addition to bridging the gap between sustainability and financial performance of firms. It is crucial to recognize the role of various governance mechanisms in mediating the multitude of sustainability-financial performance issues, which can facilitate firms' overall performance. This dissertation's main findings should be seen as a starting point for considering how governance mechanisms can be mediated towards this end. This remains one of the key academic contributions of this dissertation. Building on this notion, the study provides reasoning as to why the relationship between firms' sustainability and financial performance has produced inconclusive results. The dissertation makes a valuable contribution to the literature on the role of governance mechanisms as a crucial enabler in establishing this relationship. There are only a handful of studies that discuss causal explanations for sustainability and financial performance of firms (e.g., Dal Maso et al., 2020; Triwacananingrum, 2018; Wen et al., 2022; Wendry et al., 2023). Instead, most studies focus on what alleviates or reinforces sustainability and financial performance relationships. This research contributes to the existing literature by examining causal explanations for the sustainability and financial performance of firms.

This dissertation is also the first to look at workforce practices of Canadian firms and examine how these practices affect their social and environmental performance. The dissertation expands on the literature on workforce practices and corporate sustainability, employing the signaling perspective as a

lens (e.g., McCarty, 2011; Nisar et al., 2022). This makes it possible to comprehend the objectives of signaling perspective in a manner that provides insight into workforce practices, such that facilitating these practices can be important for ensuring the sustainability performance of firms. Furthermore, the past literature has largely concentrated on the impact of workforce practices on sustainability frameworks or reporting (e.g., Aladwey et al., 2022; Albertini, 2019; Aureli et al., 2020; Braam et al., 2016; Domingues et al., 2017; Girón et al., 2021; Hahn et al., 2015). While previous studies are insufficient in providing the normative premises needed to ensure firm longevity on a sustainable basis that is informed by effective workforce practices, this dissertation demonstrates that firms' capacity to commit to resilience and ensure sustainability performance may be diminished by the absence of effective workforce practices. Therefore, this dissertation's contribution to the literature is its ability to test the impact of workforce practices on the firm's sustainability performance beyond just reporting on sustainability related issues.

For theoretical contribution, the research primarily relies upon an integrated theoretical framework and analyzes the effect of corporate governance in the relationship between sustainability and financial performance of firms. Multiple theoretical bases are utilized to explain the various hypotheses tested in the study and evaluate the impact of governance on sustainability-financial performance relationships. Since no single theory can fully explain the hypothesized links, the study emphasizes how various theories complement one another in the construction of study hypotheses. This is one of the primary theoretical contributions in this dissertation. Academics and practitioners who are interested in comprehending the concepts and potential applications of each distinct theory, as well as their connections and relationships in the context of governance mediating sustainability and financial performance relationships, may find this research a useful reference.

The dissertation supports the arguments in the literature about the potential importance of an integrative theoretical perspective in promoting or contributing to firms' sustainability performance. Taking into consideration the firms' governance capacity to incorporate sustainability practices that result in improved financial performance, this dissertation's aim is to contribute to the theory that backs up this view by demonstrating how diverse governance mechanisms play a role in the development of corporate sustainability (Cui et al., 2020; Disli et al., 2022; Hussain et al., 2018; Naciti, 2019; Omran et al., 2021). Furthermore, it intends to contribute to the theory that acknowledges the need to safeguard the objectives of stakeholders and agencies by considering the governance of firms' practices as a matter that should transcend the confines of a single governance viewpoint. Previous literature has mainly

investigated a single governance viewpoint that has a beneficial ripple effect on firms' performance. For instance, a more diverse board can lead to better sustainability performance (Bristy et al., 2021; Pant & Nidugala, 2022). By introducing an integrative theoretical framework, this dissertation enhances literature by influencing firms to align their sustainability initiatives through various governance mechanisms.

For practical implications, results from this research help with the implementation of sustainability initiatives leading into firms' better financial performance as follows: First, the research identifies organizational rules and control mechanisms that guide managers to fulfill the interests of shareholders and other stakeholders. The research construes corporate governance as a governing code intended to safeguard shareholders' investments from opportunistic managers. More specifically, corporate governance is considered as a business tool which looks after diverse stakeholder interests and is often developed in response to the relationships between shareholders and other firm stakeholders and the rights and responsibilities among these stakeholders. In this regard, the research highlights potential disputes between shareholders and managers due to differing interests and information asymmetry. Hence, this research uses governance as a tool to alleviate managerial opportunism and align manager-shareholders' interests. In terms of sustainability initiatives being driven through governance mechanisms, the research diverges from a narrower approach to capitalism. Instead, it provides instruments which could help firms to partially integrate sustainability into their business strategy. Yet, the research remains critical to agency conflicts on sustainability issues. As a result, firms may be challenged to fully integrate sustainability into their business strategy.

Second, the research discusses business process improvements which could strongly influence sustainability and the financial performance of firms. The research suggests that business process improvements can be carried out due to various stakeholder governance requirements. Firms which are aligned with the business process development may become influenced by environmental and social issues, and eventually adopt sustainable business processes, deviating from their traditional business processes.

Third, the research suggests that information asymmetry is caused by managers who have an information advantage over investors and external stakeholders. The information asymmetry can lead to environmental hazards (also known as hidden costs) that may exacerbate agency problems. The research contributes practically by highlighting various governance and organizational mechanisms

that can encourage managers to monitor and reward sustainability initiatives which could potentially minimize the effect of information asymmetry.

Fourth, this research provides guidance to managers on designing and implementing different governance interventions that are aimed at improving corporate governance literacy and promoting sustainability behavior. For instance, this research discusses IT governance interventions that can reduce the risks and losses for firms caused by unethical or improper management of data, technology, and business operations.

5.3 Research Limitations and Future Research

This dissertation has specifically focused on board and operational governance mechanisms and their impact on the sustainability and financial performance of firms. There is a need to examine other key governance aspects related to firms' sustainability and financial performance. One of the areas of attention for future research could be examining in depth how assurance governance affects the sustainability and financial performance of firms. This area is understudied, but it has much potential. It focuses on third-party verification of a firm's sustainability information. Canada primarily relies on voluntary assurance over sustainability information, but third-party assurance engagements are becoming more common to strengthen data credibility and increase stakeholder confidence. Further research could also be greatly enriched by exploring the influence of different sustainability reporting frameworks, such as Integrated Reporting Framework (IRF) or Sustainability Accounting Standards Board (SASB), on sustainability and financial performance of firms. Future research could also examine sustainability ranking tools to assess their consistency and whether they have any effect on firms' sustainability and financial performance. The external context of the firm is also an important factor in the development and execution of governance mechanisms. Particularly, the development and execution of governance mechanisms hinges heavily on a firm's legal, monetary, and ownership constructions (e.g., Abukari et al., 2023; Pulka et al., 2021; Vallaster & Lindgreen, 2013). External factors play a role in a firm's decision-making process, ensuring that these decisions have an impact on the sustainability and financial performance of firms. Hence, a systematic examination of governance mechanisms that incorporates external dynamics may be necessary for a firm's sustainability and financial performance and suggest potential areas for future research.

Moreover, it can be extremely complicated to align the firm's approach to handling its governance mechanisms because the approach needs to be both internally aligned and able to respond to external

conditions (Mishra, 2013). By aligning, the firm's sustainability practices can have a greater chance of being engaged and integrated in a firm's core operations (e.g., Bonn & Fisher, 2011; Domingues et al., 2017). Thus, an integrated sustainability model improves harmonization among various business departments and staff, which enables the execution of sustainability-driven governance mechanisms. However, the positive influences of corporate governance mechanisms on sustainability performance are possibly affected by contextual factors. For instance, the regulatory policies of a particular country have a role in determining the ability of various governance mechanisms to generate higher sustainability performance. The integration of sustainability into a firm's operations or gauging its performance is crucial for an effective governance approach. The understanding of how contextual factors affect a firm's sustainability performance is still lacking, which could potentially be explored in future research.

Furthermore, the particulars of sustainability performance narratives are being investigated by a small but expanding stream of sustainability research (e.g., Cadbury, 1993; Duppati et al., 2019; Hormati et al., 2022; Pasko et al., 2022). While sustainability performance narratives are a key component of integrated reporting (Albertini, 2019), firms typically prioritize financial data, and thus, firms have a wide range of choices when it comes to emphasizing sustainability performance in a quantitative manner. Firms that implement effective governance mechanisms could have better sustainability performance narratives. Thus, it is necessary to conduct future research that examines how sustainability performance narratives are used, as well as research that examines the relationship between sustainability and financial performance of firms.

The research is designed to construct relationships between selected sustainability and financial performance indicators. The definitions of these performance indicators are inconsistent across different papers while conducting the scoping review, which could hamper the accurate measurement of firms' sustainability and financial performance. It could be advisable to use non-bibliometric approaches to analyze sustainability and financial relationships.

This research has generally overlooked the possibility of endogeneity while emphasizing the link between sustainability and financial performance of firms. The excluded variables, measurement error, and reverse causality that set off endogeneity may likely affect the accuracy of this research. There is a need to focus on endogeneity problems for future research purposes.

The structural relationships suggested in this model are the main focus of the empirical testing in this research and the exploratory investigation is the basis for its conclusions. Confirmatory factor analysis can be used in future research to investigate the connections between better financial performance and better governance practices.

The body of knowledge can be improved by considering mediation mechanisms in the structural links suggested in this work. The focus of this research's empirical testing was on the relationship between board and operational components and sustainability and financial performance. Further empirical investigation can be done to comprehend the function of other governance elements that are more heavily influenced by sustainability practices.

Corporate sustainability performance was determined by an aggregate index of social and environmental ratings through Refinitiv database. Future research may consider using databases such as Sustainalytics and Corporate Knights to compare this research's results with those of other databases. There is also an opportunity to perform a longitudinal study, to assess how governance mechanisms for sustainability and financial performance of firms change over the years.

This research focuses on large and actively traded firms in Canada, who might have distinct governance and sustainability characteristics and the study's findings may not be applicable to other countries. However, it could be a starting point and a guide for future research that aims to study the sustainability performance of Canadian firms. Future research can go beyond Canada and examine how governance mechanisms may affect the sustainability and financial performance relationship.

Lastly, it should be noted that this research has low generalizability. Data was only accessible for the actively traded firms listed on the TSX that have a strong commitment to corporate sustainability. The research's findings may not be applicable to small and medium-sized firms (SMEs). Future research can utilize results from the current study to evaluate governance-specific interventions in small and medium enterprises.

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