

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

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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

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.

2. Theoretical Background and Hypotheses

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, p. 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, p. 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.

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 and 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.

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 (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.

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 - Vilchez 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-focussed 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.

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 (Mehrpouya & Chowdhury, 2018). Therefore, a comprehensive strategy allows a firm to utilize shared value through different CG methods, benefiting 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.

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 1 illustrates the hypotheses.

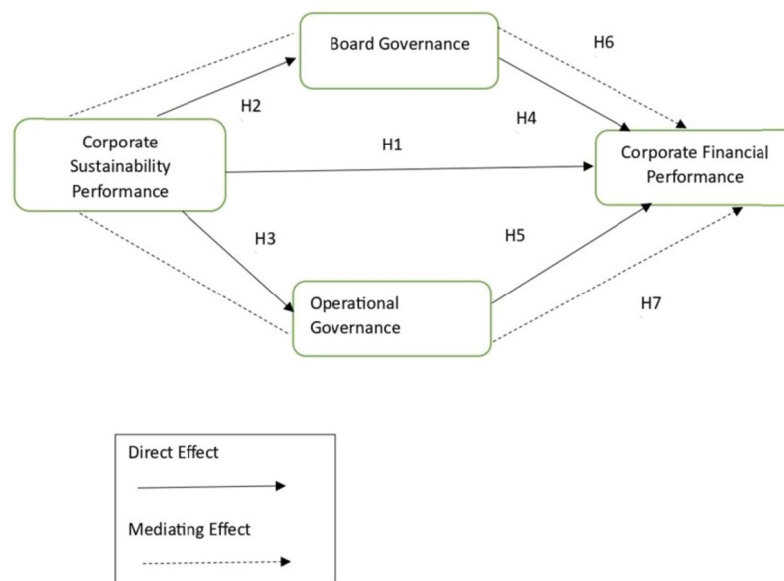


Figure 1. Research Model

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.

3.1 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 1 below.

Table 1. The operationalization of the variables in the study

| Variables Name | Description | Notation |
|---|--|----------|
| Independent Variables | | |
| 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 |
| Mediating Variables | | |
| 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 |
| Dependent Variables | | |
| 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 |
| Control Variables | | |
| 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 |

3.2 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.

4. Findings

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 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 (R²) 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 R² is above 0.7. The R² 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 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 2 presents the cross-factor loadings of all the items, demonstrating that all the factor loadings were greater than their cross-loadings.

Table 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 |

4.2 Hypotheses Testing

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 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 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 |

Note. R Square (Corporate Financial Performance) = 0.27; R Square (Board Governance) = 0.15; R Square (Operational Governance) = 0.54.

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).

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 2 illustrates the PSL-SEM model.

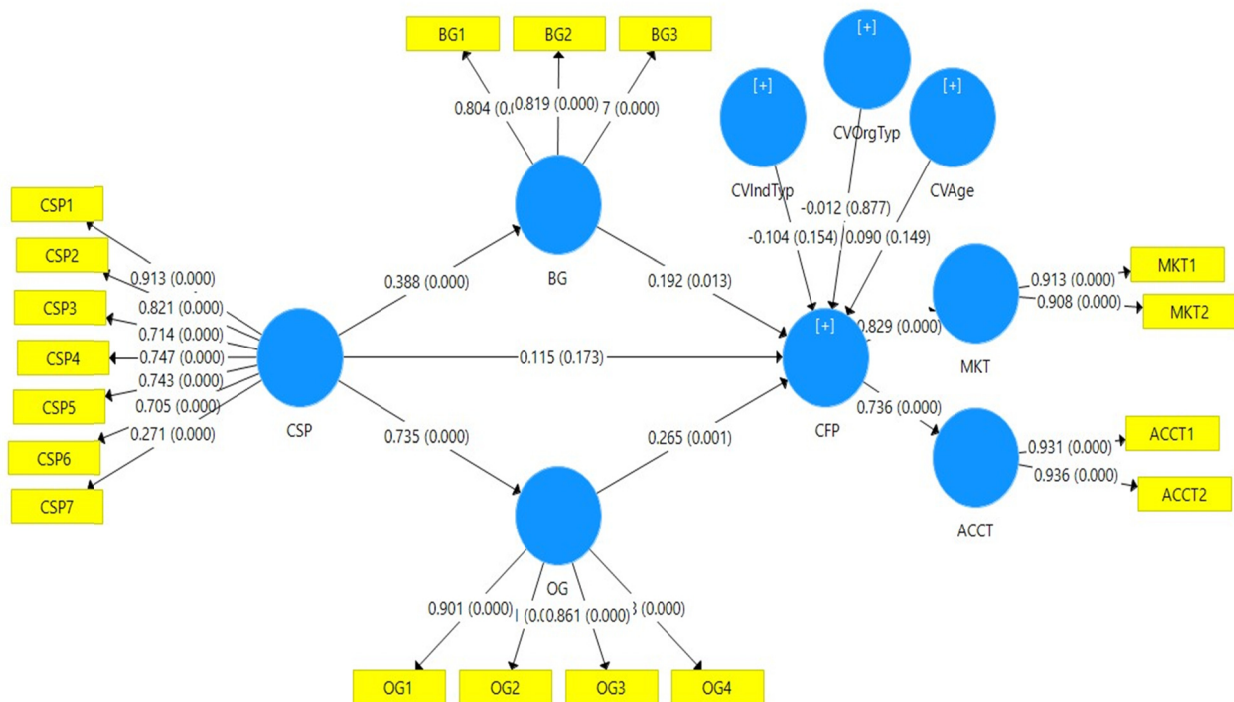


Figure 2. Model (inner and outer) results

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.

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.

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).

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 and 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.

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.

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.

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.

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