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Social and Applied Sciences Center Program of Post-Graduation in Business Administration

ISAAC GEZER SILVA DE OLIVEIRA

ESSAYS OF CORPORATE FINANCE AND ESG

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São Paulo

(2024)

ISAAC GEZER SILVA DE OLIVEIRA

ESSAYS OF CORPORATE FINANCE AND ESG

PhD thesis presented to the Postgraduate Program in Business Administration of Mackenzie Presbyterian University, partially fulfilling the requirement for obtaining a Doctorate Degree in Business Administration.

Advisor: Prof. Dr. Wilson Toshiro Nakamura

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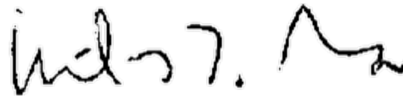

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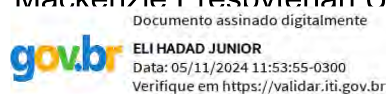

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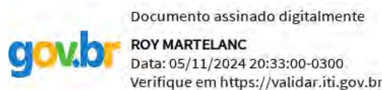

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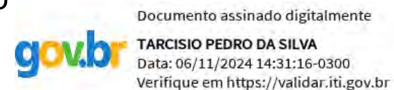

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To the one who inspires poetry in me.

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"In the midst of winter, I found there was, within me, an invincible summer"
Albert Camus (Retour à Tipasa - 1965)

ABSTRACT

In this thesis, I examine the role of environmental, social, and governance (ESG) practices in shaping corporate performance among Latin American companies during the COVID-19 pandemic. Through three interrelated essays, I investigate the influence of ESG metrics on executive compensation, profitability, firm value, and the cost of debt, drawing upon multiple theoretical frameworks in finance, including Agency Theory, Stakeholder Theory, Resource-Based Theory, Institutional Theory, and Signalling Theory. The first essay explores how ESG metrics moderate the relationship between firm performance and executive pay in Brazilian publicly traded firms from 2018 to 2023. The results suggest that higher ESG disclosure strengthens the link between company performance and executive pay, highlighting the importance of sustainable governance practices in executive pay strategies, even during global crises. The second essay analyses the impact of ESG practices on profitability and company value in Latin American markets from 2018 to 2023. The results indicate that companies with robust ESG practices are better positioned to achieve financial stability and growth in times of uncertainty, demonstrating that ESG-orientated strategies provide a competitive advantage to face the challenges brought about by the pandemic. The third essay investigates the relationship between ESG disclosure and the cost of corporate debt, focusing on how the pandemic moderates this dynamic in Latin American countries from 2018 to 2023. The results reveal that companies with better ESG disclosure benefit from lower borrowing costs due to effective governance practices. However, the uncertainty of the pandemic limits the extent of these benefits. I provide new insights into the role of ESG in corporate finance, especially in the context of emerging markets during a global crisis, filling critical gaps in the growing literature on ESG disclosure. I contribute to the academic literature by filling gaps in the growing literature on ESG disclosure in emerging markets and providing new insights into its role in corporate finance during global crises. The findings present practical implications for companies, highlighting the importance of integrating ESG into financial decision-making to increase resilience and align stakeholder interests, thereby supporting long-term value creation. For investors, it reinforces the relevance of ESG metrics as an important signal of corporate resilience, especially in times of uncertainty, and guides policymakers and regulators on the importance of ascertaining authentic ESG practices that can contribute to the economy, society and the environment.

KEYWORDS: Environmental, Social, and Governance (ESG), Corporate Governance, Executive Compensation, Cost of Debt, Firm Performance, Profitability, Latin America, Sustainable Finance, Financial Resilience, Emerging Markets.

JEL Classifications: G30, G32, J33, L22

RESUMO

Esta tese investiga o papel das práticas ambientais, sociais e de governança (ESG) no desempenho corporativo de empresas latino-americanas durante a pandemia de COVID-19. Através de três ensaios inter-relacionados, examino a influência das métricas ESG sobre a remuneração dos executivos, a lucratividade, o valor da empresa e o custo da dívida, integrando diversas estruturas teóricas do campo de finanças, incluindo a Teoria da Agência, a Teoria das Partes Interessadas, a Teoria Baseada em Recursos, a Teoria Institucional e a Teoria da Sinalização. O primeiro ensaio explora como as métricas ESG moderam a relação entre o desempenho da empresa e a remuneração dos executivos em empresas brasileiras de capital aberto, no período de 2018 a 2023. Os resultados sugerem que o desempenho mais elevado em ESG fortalece o vínculo entre o desempenho da empresa e a remuneração dos executivos, destacando a importância de práticas de governança sustentável nas estratégias de remuneração, mesmo durante crises globais. O segundo ensaio analisa o impacto das práticas ESG sobre a lucratividade e o valor da empresa nos mercados latino-americanos no mesmo período. Os resultados indicam que empresas com práticas robustas de ESG estão mais bem posicionadas para alcançar estabilidade financeira e crescimento em tempos de incerteza, demonstrando que estratégias orientadas para ESG proporcionam uma vantagem competitiva ao enfrentar os desafios trazidos pela pandemia. O terceiro ensaio investiga a relação entre o desempenho ESG e o custo da dívida corporativa, focando em como a pandemia modera essa dinâmica em empresas de capital aberto de países latino-americanos entre 2018 e 2023. Os resultados revelam que empresas com melhor desempenho ESG se beneficiam de custos de empréstimo mais baixos, principalmente em função de práticas de governança eficazes, embora a incerteza trazida pela pandemia limite a extensão desses benefícios. Minha pesquisa fornece novos insights sobre o papel do ESG nas finanças corporativas, especialmente no contexto dos mercados emergentes durante uma crise global, preenchendo importantes lacunas na literatura em expansão sobre ESG. Contribuo para a academia ao abordar lacunas na literatura de ESG em mercados emergentes e ao oferecer novas perspectivas sobre seu papel em finanças corporativas em períodos de crise. Os resultados apresentam implicações práticas para as empresas, destacando a importância de integrar o ESG na tomada de decisões financeiras para aumentar a resiliência e alinhar os interesses das partes interessadas, apoiando, assim, a criação de valor no longo prazo. Para os investidores, o estudo reforça a relevância das métricas ESG como um sinal importante de resiliência corporativa, especialmente em tempos de incerteza. Ademais, orienta formuladores de políticas e reguladores sobre a importância de promover práticas ESG autênticas, capazes de contribuir para a economia, a sociedade e o meio ambiente.
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PALAVRAS-CHAVE: ASG (Ambiental, Social e Governança), governança corporativa, remuneração de executivos, custo da dívida, desempenho da empresa, lucratividade, América Latina, finanças sustentáveis, resiliência financeira, mercados emergentes.

Classificação JEL: G30, G32, J33, L22

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LIST OF ABBREVIATION

AB – Arellano and Bond (1991)

CEO - Chief executive officer

CG – Corporate Governance

CMVM – *Comissão do Mercado de Valores Mobiliários*

CSR – Corporate social responsibility

E - Environmental Disclosure

ESG –Environmental, Social, and Governance.

FE – Fixed effects

FP - Firm Performance

G - Governance

GDP – Gross domestic product

GMM – General method of moments

GRI - Global Reporting Initiative

LA – Latin America

LEV - Leverage

LOG – Logarithmic Value

MHP - Managerial Power Hypothesis

OCT - Theory of Optimal Hiring

OLS – Ordinary least squares

PPA – Principal-Agent Model

PPM - Principal-Principal Model

PPS – Pay-For-Performance Sensitivity

RE – Random effects

ROA – Return-on-Assets

ROE – Return-on-Equity

S - Social Disclosure

TQ - Tobin's Q Ratio

WoS – Web of Science

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CHAPTER 1 – INTRODUCTION AND THESIS OVERVIEW

"The only constant in life is change." — Heraclitus, circa 535–475 BC

A comprehensive overview of theoretical frameworks and contextual backgrounds is provided in this chapter, highlighting the relevance of ESG practices and their intersection with the field of corporate finance during the COVID-19 pandemic in the Latin American context.

1.1 Research Background

In recent years, finance researchers have focused on the Latin American region. Its distinctive economic, social, and institutional characteristics create a unique opportunity to identify gaps and develop theory and empirical research in finance and corporate governance (La Porta et al., 1999; Aguinis et al., 2020).

Over the years, finance research has focused on different facets of emerging and Latin American markets; nevertheless, new domains worry researchers about these markets' divergent and unknown nuances (Cuervo-Cazurra, 2008; Crisóstomo, Pinheiro & Nakamura, 2020; Kent Baker et al., 2020). In addition, Companies, markets, governments and society in general have shown an increasing interest in sustainability issues (Lima & Juca, 2023). In recent years, companies have tried to reduce the risks arising from environmental, social and governance matters (Saini et al., 2023). As a result of the pandemic caused by COVID-19, industries have become more aware in terms of disclosing ESG practices (Saini et al., 2023; Ajay et al., 2024)

The number of articles published annually on corporate governance (CG) and environmental, social and governance (ESG) has increased, reflecting the growing academic interest in the topic (Ararat et al., 2021). "Corporate governance" as a keyword appeared in the abstract of 1.012 published articles (Ararat et al., 2021) covered by Scopus in 2022, suggesting an 84-fold increase compared to 1998. When we look at the term ESG, the growth is even more considerable: before 2018, there were no more than a hundred articles on the same characteristics and database, and by 2023, it had reached 1,164. Most of these studies originated not only from economics and finance but also from various other disciplines of the social sciences, including accounting, law and administration, signifying the interdisciplinary nature of corporate governance research (Aguinis et al., 2020; Ararat et al., 2021; Gillan et al., 2021).

This growth in interest in academic literature on the topic goes hand in hand with the context we have experienced in recent years (Gillan et al., 2021). The global scenario has been deeply marked by the COVID-19 pandemic, which has triggered a series of challenges for individuals and companies worldwide (Albuquerque, 2021). As well as causing an unprecedented public health crisis, the pandemic has had substantial economic implications, forcing companies to revisit their strategies and adapt to an environment of uncertainty and volatility (Gao & Geng, 2024). In this context, environmental, social and corporate governance practices have emerged as a central axis for business resilience and survival.

ESG practices, initially seen as a means for companies to differentiate themselves regarding sustainability and market information, are now seen as essential for mitigating risks and guaranteeing business continuity. Some articles show that companies that have adopted robust ESG standards have proved more resilient to the adversities imposed by the pandemic (Lu et al., 2023). However, how these practices influence different aspects of corporate performance - such as executive remuneration, market value, profitability and the cost of debt - is still a topic without consensus and with many gaps in the academic literature, especially in the context of Latin American countries (2023). In addition, ESG antecedents and impacts are very sensitive to the specific contexts of each country and their specific institutional and cultural contexts (Aguilera & Jackson, 2010; Aguinis et al., 2020; Husted et al., 2019).

Therefore, my thesis seeks to contribute to this discussion by investigating the relationship between ESG practices and the financial performance, market value, cost of debt and executive remuneration of Latin American companies during the systemic crisis caused by the COVID-19 pandemic. To this end, I have undertaken three essays that explore different dimensions of this relationship, all in the context of developing markets and considering the impacts of the pandemic on the corporate environment.

Thus, I seek to answer three research questions: RQ1: How do ESG metrics and the systemic crisis caused by the COVID-19 pandemic moderate the relationship between executive compensation and financial performance in Latin America? RQ2: How do ESG practices impact profitability and firm performance in the Latin American market during the COVID-19 pandemic? RQ3: How are ESG disclosure and the cost of debt related in Latin American companies in the context of the COVID-19 pandemic?

The institutional context of the Latin American capital market has traditionally been identified as small, underdeveloped and non-transparent in its institutional relations with companies typically characterised by solid shareholder concentration (Crisóstomo et al., 2020; Borges Júnior, 2022), controlling blockholders (Jara et al., 2019), pyramidal control structures (Brahma, 2023) and the presence of family relationships on the board of directors and a lack of transparency regarding the disclosure of information on executive remuneration.

Ownership structure is a crucial attribute of corporate governance to mitigate agency conflicts between majority and minority shareholders (Aluchna & Kaminski, 2017). However, the seminal study by La Porta, Lopez-de-Silanes and Shleifer (1999) indicates that unlike developed economies, where ownership concentration can represent a governance mechanism, in transition and emerging countries, controlling shareholders can exacerbate the private benefits of control by relying on a weaker corporate governance system, which leads to the expropriation of minority shareholders. For example, in this context, it is common for the board of directors to be composed chiefly of members appointed by the controlling shareholder, who in many cases is the family elite, the state or corporate conglomerates, leading to more significant conflicts between minority and majority shareholders (Claessens & Yurtoglu, 2013; Maranho & Leal, 2019; Crisóstomo & Brandão, 2019).

In addition, the protection of minority shareholders varies worldwide, and the different legal origins partly explain this, as in the case of Latin America. However, legal solid protection can also present conflicting situations, such as management decisions that lead to possible adverse effects for the organisation (Zattoni et al., 2020). In addition, some mechanisms can produce different effects in underdeveloped countries (Zattoni et al., 2020; Husted et al., 2019).

Thus, more studies are needed to understand the Latin American scenario and test theories initially established in developed countries (Aguinis et al., 2020). Studies on corporate governance in the Latin American context are growing and show conflicting results, requiring more comprehensive studies to fill some critical gaps. Despite the perception and theoretical support that investors are willing to pay more for companies with better ESG practices, there are still doubts about how the relationship between corporate governance mechanisms and performance is constructed in Latin America (Ciamp et al., 2015).

1.2 Study Relevance and Research Limitations

My thesis contributes to the corporate governance, ESG and finance literature by expanding the discussion by considering the different institutional contexts of capital markets in emerging countries. Although the lack of transparency and the underdeveloped market have hindered in-depth studies, both in methodological and theoretical terms of these issues and in many cases, ESG dynamics are addressed in studies that investigate the needs of underdeveloped countries in the context of developed countries. In this way, the results converge on the complementarity between agency theory, institutional theory and stakeholder theory in explaining the phenomenon of executive remuneration, firm performance and the cost of debt moderated by ESG metrics and the crisis context in undeveloped economies.

The topics addressed here are of social and economic relevance, as they seek to understand whether ESG practices reduce information asymmetry and agency costs and add value to companies in the Latin American market. Therefore, this thesis aims to fill essential gaps in the field, point to new horizons and perspectives for future research, and contribute to research involving information asymmetry and informational and corporate control, suggesting practical managerial and academic implications. The study's main limitations concern the difficulty of obtaining data on corporate governance and executive remuneration for the countries in the chosen sample, as well as the possible differences between the markets, analysed in terms of size and scope.

Overall, by providing empirical evidence from the context of the Latin American market during the COVID-19 pandemic and by investigating the relationship between ESG and financial performance in different dimensions, the three-essays offer new perspectives on how sustainable practices can be integrated into companies' economic strategies. In addition, the thesis provides practical implications for corporate managers, investors and policymakers by highlighting the importance of ESG practices as a sustainability tool and a strategic factor for financial resilience in times of crisis.

1.3 Overview of Essays

This thesis is organised into three interrelated essays, each focusing on different aspects of ESG practices and their impact on companies during COVID-19. Below is an overview of each essay and its connection to the central theme of the research.

1.3.1 Essay 1: The Relationship Between Corporate Performance and Executive Compensation Moderated by ESG Metrics During the Pandemic

In the first essay, we investigated the influence of ESG metrics on the relationship between corporate performance and executive compensation in publicly traded Brazilian companies from 2018 to 2023. Existing literature already establishes a connection between company performance and executive pay. Still, including ESG metrics as moderators of this relationship adds new perspectives, especially in times of crisis. Our findings indicate that companies with better performance on ESG metrics tend to show greater alignment between pay and performance. In addition, we show that the pandemic. However, it has caused significant shocks in several sectors and has not had a statistically significant direct impact on the relationship between performance and remuneration. We tested moderating aspects that are yet to be explored in the current literature.

1.3.2 Essay 2: Impact of ESG Practices on the Profitability and Value of Latin American Companies

In the second essay, we broaden the scope of the analysis by investigating the impact of ESG practices on the profitability and value of companies in the context of Latin American economies. Here, the focus shifts to the influence of ESG on firm performance, especially during the pandemic period. This study contributes to the emerging literature analysing the effects of the pandemic on corporate finance, particularly in developing economies, where the challenges are different from those faced by companies in more consolidated markets. Our results suggest that companies with good ESG practices were better able to mitigate the negative impacts of the pandemic on market value and profitability, reinforcing the thesis that adopting these practices offers tangible benefits in terms of financial stability.

1.3.3 Essay 3: The ESG-Debt Nexus in Latin American Companies

Finally, in the third essay, we address the impact of ESG practices on the cost of corporate debt in Latin America, offering an additional perspective on the role of these practices in the corporate capital structure. We focus our analysis on how the pandemic influences the relationship between ESG disclosure and the cost of debt, with particular attention to governance as a critical factor in reducing financing costs. Our findings reveal that companies with better ESG disclosure can access credit at lower costs, even though the pandemic has introduced high uncertainty and volatility. However, the interaction between ESG and the pandemic did not significantly reduce debt costs, suggesting that in periods of extreme crisis, the benefits of ESG practices may be limited by unpredictable external factors.

1.3.4 Connections between the essays

The three essays in this thesis are interconnected by a common theme: the relationship between ESG practices and corporate characteristics in times of crisis in the Latin American context. Although each essay examines different dimensions of this relationship - executive remuneration, market value, profitability and cost of debt - they share a similar methodological approach based on panel data. As they approach the issue from multiple perspectives, this thesis offers a comprehensive view of the impacts of ESG practices in a corporate context characterised by uncertainty. The COVID-19 pandemic, while bringing unprecedented challenges, has also provided a unique opportunity to examine how sustainable practices influence companies in times of global systemic crisis.

1.4 Research Philosophy

Ontology refers to the study of reality and existence; in other words, it concerns the nature of the phenomenon being studied (Saunders et al., 2015). So, this thesis assumes that ESG practices have a real and measurable impact on financial performance, executive pay and the cost of debt. The ontological position I develop in the thesis is realist if these relationships exist objectively. In contrast to constructivism, the objectivist view is the most appropriate in this thesis because I use secondary data collected from financial statements, which would not be suitable for a subjective view of reality.

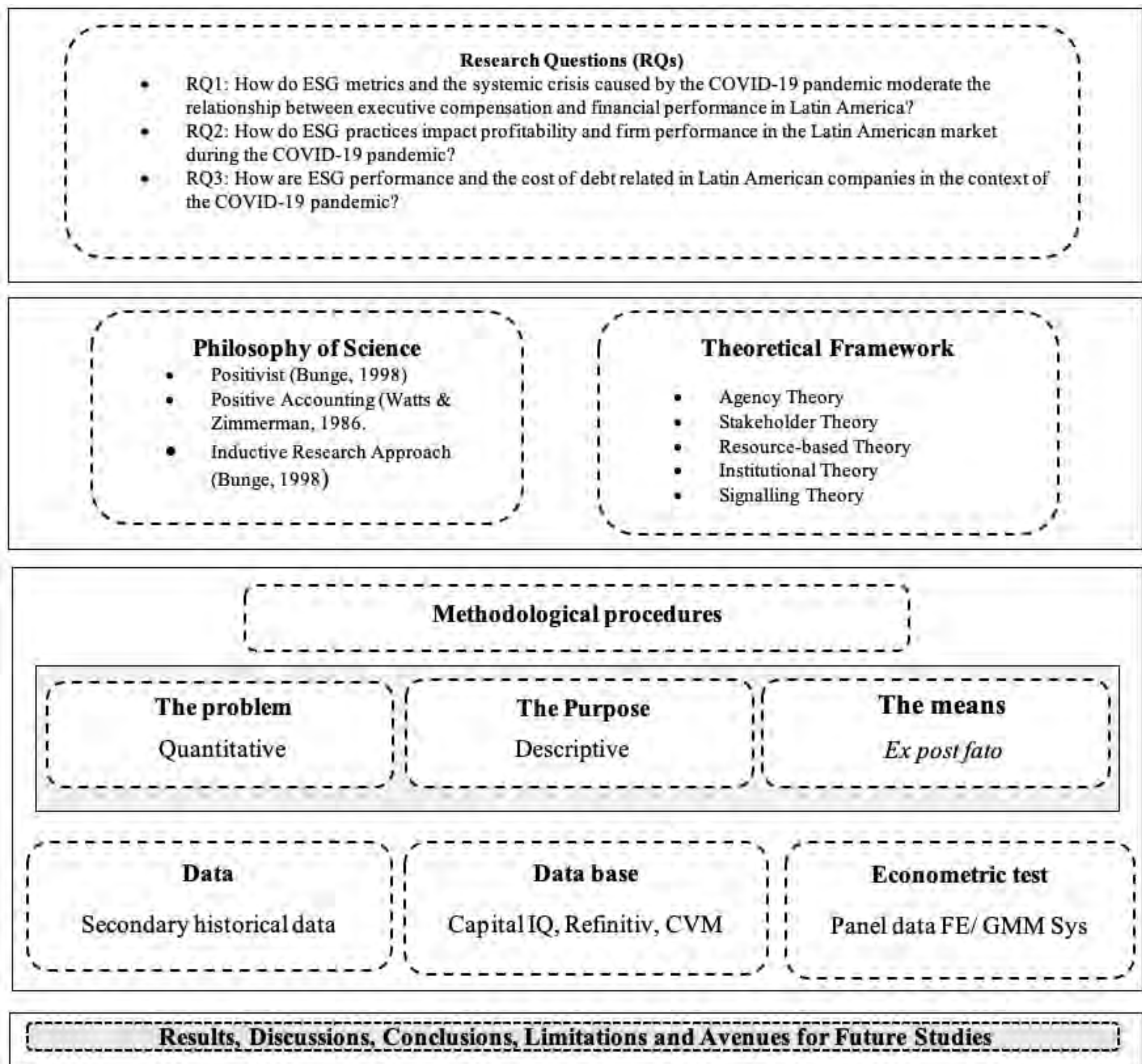
On the other hand, epistemology deals with the theory of knowledge, i.e., the methods and validity of creating knowledge in a specific field (Lim et al., 2023). Therefore, epistemologically, the thesis is based on a positivist framework in which knowledge is obtained through empirical observation and quantitative data analysis (i.e. panel data and regression models). The purpose of the thesis assumes that objective knowledge can be derived from data observation, statistical methods, the testing of hypotheses and aspects that strengthen or weaken the observed phenomenon. From the epistemological point of view, I use an empirical-analytical approach in which the variables, operationalised as dependent and independent, determine functions (Campbell & Stanley, 1963).

Thus, the orientation of the study is deductive, built from the positivist research paradigm. Thus, the study's orientation is deductive. According to Bunge (2017), the deductive method plays a decisive role in evaluating scientific theories in the light of empirical data. Data collection is based on numerical information and is modelled with the support of multivariate

statistics to verify or not the occurrence of the consequences outlined, which allows hypotheses to be accepted or rejected, even if provisionally (Popper, 1972) i.g., the Agency Theory, to test the relationship between ESG practices and executive remuneration, a hypothesis that can be refuted or validated. Furthermore, Watts and Zimmerman (1986) consider that the positivist approach seeks to explain what is observed and predict unobserved phenomena. In this sense, it considers predicting future events and studying past data to gain a deeper understanding of the phenomena that have occurred.

In this context, the methodological choice of the thesis and research design was naturally quantitative. The quantitative approach uses structured conceptual contributions to form hypotheses. According to Richardson (1989), descriptive studies that seek to identify and classify the relationship between variables use a quantitative approach. As for the research strategy, this study is ex post facto, i.e. it analyses the variables after the facts have occurred. Therefore, the study deals with variables that cannot be manipulated. Figure 1 shows the research design, including the general methodological choice common to the three trials. The methodological choice is discussed individually in each of the papers.

Figure 1 - Research Design



1.5 Theoretical framework

A range of classical theories in finance can offer clues for observing the phenomenon that this thesis supports (Chen & Roberts, 2010; Gillan et al., 2021; and Grewatsch & Kleindienst, 2017). However, I articulate the essays based on agency theory and stakeholder theory. I also use resource-based, institutional, and signalling theories as umbrellas. Table 1 shows the theoretical framework for environmental, social and governance studies. These theories provide a framework for analysing the relationship between ESG practices and corporate financial results (Grewatsch & Kleindienst, 2017).

According to Grewatsch and Kleindienst (2015) and Huang (2021), from the point of view of reducing informational asymmetry, agency theory (Jensen & Meckling, 1976; Fama & Jensen, 1983), signalling theory (Spence, 1973), stakeholder theory (Freeman, 1984; Freeman et al., 2004), ESG factors are seen as quality signals for shareholders and other stakeholders, while in the lens of institutional theory (Morgan et al., 2010) ESG factors are recognised as a company influenced by social institutions and affects them. Finally, ESG practices can represent a resource for competitive advantage through resource-based theory (Barney, 2007).

Table 1 - Theoretical framework applicable to ESG studies

Theory	Agency Theory	Stakeholder Theory	Resource-based Theory	Institutional Theory	Signalling Theory
Precursors	Jensen and Meckling, 1976	Freeman, 1984	Barney, 2007	Morgan et al., 2010	Spence, 1973
Scope of perspective	Principal-agent relationship	Internal and external stakeholder groups	Organisational resources as sources of competitive advantage	External pressures, norms, and rules shaping organisational behaviour	Signaller-receiver relationship
Focal Point	How to address agency problem	How can an organisation satisfy demands of various stakeholders	How resources can lead to sustained competitive advantage	How organisations conform to societal pressures and norms	How to signal an Organisation's performance to gain competitive advantages
Rationale of action	To reduce agency costs and maximise organisation value	To obtain approval from stakeholders	To use and develop unique resources that provide a strategic advantage	To gain legitimacy and align with external expectations	To mitigate information asymmetry and maximise organisation value

Source: Adapted from uniqueChen & Roberts, 2010, Gillan et al., 2021 and Grewatsch & Kleindienst, 2015; Huang et al., 2021.

The agency theory (Jensen & Mackling, 1976) is particularly relevant when exploring the dynamics of executive remuneration and company performance, as it focuses on conflicts of interest between shareholders (principals) and executives (agents). In this context, ESG metrics can be seen as tools to align managerial incentives with the long-term interests of shareholders, mitigating agency problems by promoting sustainable practices that increase company value (Jensen & Murphy, 1990; Machado et al., 2023). Moreover, agency conflicts between shareholders and executives or majority and minority shareholders can be mitigated by linking corporate social performance targets to executive remuneration (Maas, 2018; Ajay et al., 2024; Ye et al., 2023).

Considering the agency problem arising from the separation of ownership and control (Fama & Jensen, 1983), governance mechanisms can mitigate the cost and conflict of agency by reducing asymmetry. Therefore, the higher the level of disclosure of non-financial information, in other words, ESG, the better for the principal's decision-making (Morris, 1987; Panda & Leepsa, 2017; Carnini Pulino et al., 2022).

On the other hand, stakeholder theory (Freeman, 1984) expands the scope of analysis beyond shareholders, considering the interests of a broader set of stakeholders, including employees, customers and the community. From this theoretical lens, we see that ESG disclosure can meet the needs of various stakeholders, establishing a sustainable and resilient corporate structure (Sun et al., 2023). This theoretical approach aligns with the idea that a company's prosperity is intrinsically linked to its ability to serve the multifaceted interests of all stakeholders, thus providing a positive influence on its value that transcends transient financial gains (Liu et al., 2012). We can also support the theory that companies that care about different stakeholders can more strongly mitigate the effects of crises such as the COVID-19 pandemic, reduce information asymmetry and strengthen their long-term viability (Liu et al., 2020; Zhang et al., 2020; Koutoupis et al., 2021).

In addition, the resource-based theory (Barney, 1991) helps to explain how ESG practices can be harnessed as valuable resources that provide a competitive advantage (Huang & Yu, 2024). Companies with good ESG disclosure may be better equipped to manage risks, innovate and create value, thus strengthening their market position and improving financial results. Institutional theory (DiMaggio & Powell, 1983) further contextualises this dynamic, recognising the role of external pressures and norms in shaping corporate behaviour. Companies are often compelled to adopt ESG practices in response to regulatory requirements, societal expectations or industry standards (Sun et al., 2023). Corporations are directly influenced by the rules, regulations and structures that permeate their external environment. Therefore, companies with solid performance are in harmony with established institutional norms, promoting legitimacy and attracting more investors, generating more excellent value for stakeholders (Sun et al., 2023; Bukari et al., 2024). The pandemic has intensified these pressures, forcing companies to adapt to new realities, prioritising sustainability and responsible governance (Jebran et al., 2021).

Finally, signalling theory (Spence, 1973) offers insights into how companies communicate their commitment to ESG principles to the market (Carnini Pulino et al., 2022). Companies with high ESG disclosure send positive signals to investors and other stakeholders, indicating they are well-managed and forward-thinking. This signalling can reduce information asymmetry and increase investor confidence, especially during periods of uncertainty such as the COVID-19 crisis (Ching & Gerab, 2017).

1.6 Thesis Structure

My thesis is organised as follows: Section 1: Introduction, with context, objectives, novelty and contributions; Section 2: First Essay: The relationship between corporate performance and executive compensation moderated by ESG metrics during the pandemic; Section 3: Second Essay: Impact of ESG practices on the profitability and value of Latin American companies; Section 4: Third Essay: The ESG-Debt nexus in Latin American companies; Section 5: Conclusions and insights.

CHAPTER 2 - THE EFFECTS OF FIRM PERFORMANCE ON EXECUTIVE PAY: THE MODERATING INFLUENCE OF ESG METRICS DURING THE COVID-19 PANDEMIC

"Not everything that is faced can be changed, but nothing can be changed until it is faced." — James Baldwin.

Abstract

Our study investigates how ESG metrics moderate the relationship between executive pay and firm performance and the impact of the COVID-19 pandemic on this relationship. Using a panel data approach, we examine how these factors influence remuneration in publicly traded Brazilian companies before, during, and after the pandemic (2018-2023). The results reveal that higher ESG disclosure is positively associated with remuneration, indicating that companies with solid sustainability practices tend to reward their executives more. Similarly, Tobin's Q and sales growth are positively related to remuneration. In addition, ESG disclosure strengthens the relationship between pay and performance (Pay-FP). Interestingly, the COVID pandemic did not have a statistically significant direct impact on the Pay-FP ratio, suggesting that companies may have maintained stable remuneration practices despite the global crisis. To the best of our knowledge, we contribute to the existing literature on executive rewards by expanding the understanding of the moderating effect of ESG metrics and testing, for the first time, the interaction of a systemic crisis on this dynamic. The results provide insights into how companies align remuneration with financial performance and organisational characteristics, with implications for governance and sustainability strategies. Limitations include sample bias and the study's focus on short-term effects, while future research should explore sector-specific trends and long-term impacts.

Keywords: Executive compensation, Firm performance, Corporate Governance, ESG, COVID-19.

JEL: G12, G14, G32

2.1 Introduction

The COVID-19 pandemic has led to sharp economic output falls and triggered major financial market shocks. Brazil's GDP in the second quarter of 2020 fell by 9.7% compared to the immediately preceding quarter; in the United States, the drop was 8.9%, representing the most significant quarterly decline in more than 70 years (Ye et al., 2023; Gao & Geng, 2024). Nevertheless, we see employee salaries stagnating or falling dramatically while the pay gap between CEO pay and average employee income continues to generate growing debate (Pan et al., 2022; Ye et al., 2023).

In addition, executive remuneration influences a company's sustainable business strategy and performance (Adu et al., 2022). In this sense, the concept of ESG (environmental, social and governance) guides and makes transparent stakeholders' investment in responsible practices, demanding that corporations consider the three dimensions of environmental, social and corporate governance while framing investment decisions, striking a balance between economic, social and environmental benefits and maximising shareholder wealth, while actively engaging with society's concerns (Zhu et al., 2024). In this way, the COVID-19 pandemic has attracted more attention from investors, society, governments and regulatory bodies worldwide, culminating in a gradual improvement of evaluation and disclosure systems (Rath & Deo, 2023).

Few empirical studies have analysed the mediating influence of ESG disclosure on the relationship between company performance and executive pay (Rath et al., 2020; Zu et al., 2023; Ajay et al., 2024; Grodt et al., 2024), and the best of our knowledge, this relationship has not yet been investigated in the context of the systemic crisis caused by COVID-19.

Compensation is one of the primary ways in which firms align the interests of executives with those of shareholders (Jensen & Meckling, 1976; Conyon & He, 2011; Blanes et al., 2020; Sheikh et al., 2018). However, the relationship between executive compensation and firm performance (Pay-FP) remains to be determined. Therefore, this study aims to examine whether the characteristics of ESG can moderate the Pay-FP within the context of an emerging country using data from the Brazilian Stock Exchange (B3). We also investigated the impact of COVID-19 on these interactions.

The institutional context of the Brazilian capital market has some typical characteristics, such as being small, underdeveloped and needing more transparency in its institutional relationships (Bortolon & Silva Junior, 2015; Oliveira & Silva Junior, 2021). Companies in the Brazilian capital market are often marked by a high concentration of ownership (Carvalhal, 2014; Leal & Bortolon, 2009; Sarlo Neto et al., 2005; Crisóstomo et al., 2020), familial connections among board members, and a lack of transparency regarding executive compensation (Pinto & Leal, 2012). These characteristics can accentuate the agency problem in such a way that the majority shareholder can use executive compensation to expropriate the minority, while the lack of transparency can draw attention to the poor sensitivity of executive compensation to organisational performance (La Porta, Lopez-de-Silanez & Shleifer, 1999; Silva & Leal, 2006; Oliveira & Silva Junior, 2018). This situation can also change in a crisis context (Ye et al., 2023) or be mitigated in companies with better ESG disclosure (Rath & Deo, 2023).

Furthermore, some studies argue that high executive salaries incentivise them to perform better; on the other hand, others say that this can lead to a focus on short-term gains rather than long-term growth (Aguiar et al., 2017; Dias et al., 2020). In Brazil, we need more studies to support both sides solidly. Some previous work exploring the link between pay and core performance has found a positive but weak sensitivity to the performance of pay, while others have found no correlation between executive pay and company performance (Ntim et al., 2019; Brandão et al., 2019; Iglesias et al., 2022). Previous research on executive remuneration in the Latin American context has two distinct characteristics: firstly, the results of these studies are inconclusive; secondly, the most robust results have been carried out in developed countries, with samples of British and American companies (Ntim et al., 2019). While examining these companies has been relevant to understanding the dynamics between pay and performance, it is essential to consider that the context may differ in developing countries. Therefore, we must undertake further studies in companies from emerging countries to establish a theoretical understanding of the pay-performance relationship in different markets.

In other words, previous research has focused on developed economies, with little attention paid to the unique institutional contexts of developing countries (Koutoupis et al., 2021). Husted et al. (2019) argue that there is little understanding of corporate governance and its influence on ESG reporting in Latin America (Chong & López-de-Silanes, 2007; Husted et

al., 2019; Gillan et al., 2021). This gap is further exacerbated by the lack of transparency and the high concentration of ownership in the Brazilian capital market, which can distort the true impact of executive pay on company performance. The pandemic has also introduced new dynamics, creating an urgent need to explore how these factors interact in a crisis environment, and the increased attention to ESG metrics instigates research into how companies with a greater commitment to transparency of sustainable actions measure this relationship.

Our study addresses these gaps by examining the moderating effect of ESG disclosure and the Covid-19 pandemic on the relationship between executive pay and firm performance (Pay-FP). Moreover, our contribution is threefold: Firstly, we provide an in-depth analysis of the relationship between pay and FP in an emerging market, offering specific insights into Brazil's institutional and economic conditions. This is particularly important given the high concentration of ownership and family connections among board members in the Brazilian market. Secondly, we explore how ESG disclosure can mitigate the agency problem and increase the sensitivity of executive pay to company performance. This is key to understanding whether ESG practices can align the interests of executives with those of shareholders, especially in an emerging market. Thirdly, by examining the period during and after the COVID-19 pandemic, this research contributes to understanding how systemic crises influence executive remuneration strategies and their effectiveness in promoting long-term company performance.

For this purpose, we formulated the following research questions: How does ESG disclosure moderate the relationship between executive compensation and company performance in companies listed on the Brazilian Stock Exchange? What is the impact of the COVID-19 pandemic on this relationship?

This article is divided into five sections, along with the introduction. The next section addresses the theoretical framework and research hypotheses. The third section details the methodology used to collect and analyse the data. The fourth section presents and discusses the results; finally, the fifth section presents the conclusions and offers insights for future research.

2.2 Literature Review

2.2.1 Executive Compensation and Corporate Governance

We articulated corporate governance (Blair, 1995) and executive compensation (Conyon & He, 2011) and performance corporate, based on institutional theory (Tolbert & Zucker, 1996; DiMaggio & Powell, 1983; Meyer & Rowan, 1977) and agency theory (Young et al., 2008; Jensen & Meckling, 1976), and Stakeholders Theory (Freeman, 1984), which broadens the focus from the principal shareholders to include other involved parties such as employees, customers, suppliers, minority shareholders and the community in general.

Compensation is one of the primary ways in which firms align the interests of executives with those of shareholders (Jensen & Meckling, 1976; Conyon & He, 2011; Blanes et al., 2020; Sheikh et al., 2018) and is considered an internal corporate governance mechanism.

The Corporate Governance (CG) literature demonstrates that the legal system, the protection of the rights of creditors and minority and majority shareholders, the level of corruption, and the disclosure and transparency system related to corporate governance reveal apparent differences between developed economies and emerging. Furthermore, based on the seminal studies by La Porta et al. (1997, 2000, 2008), several studies document institutional differences (and their dimensions) between countries (Aguilera et al., 2008; Aguilera & Jackson, 2010; Schiehll & Martins, 2016; Kumar & Zattoni, 2019; Jara et al., 2019; Zattoni et al., 2020).

Additionally, some studies argue that high executive salaries encourage them to perform better; others say this can lead to focusing on short-term gains rather than long-term growth. In Brazil, we need more studies to support both sides robustly. Some previous papers exploring the link between compensation and principal performance found a positive but weak pay-performance sensitivity (PPS), while others found no correlation between executive compensation and company performance (Ntim et al., 2019; Brandão et al., 2019; Iglesias et al., 2022). Previous research on PPS has two distinct characteristics: first, the results of these studies are inconclusive; second, the most robust results were conducted in developed countries, mainly in British and American companies (Ntim et al., 2019). While examining these companies has been relevant to understanding the PPS concept, it is essential to remember that the context may differ in developing countries. Therefore, it is imperative to conduct further studies in companies in developing countries to establish the feasibility and effectiveness of PPS in these unique contexts.

Some studies have suggested that effective corporate governance can mitigate some of the adverse effects of PFP (Brandão et al., 2019; Ntim et al., 2019; Iglesias et al., 2022), such as the independence of the board of directors from the controlling shareholder and the executive board (Brandão et al., 2019). Thus, companies with more robust corporate governance practices tend to outperform those with weaker governance practices regarding market value and financial performance (Sheick et al., 2018). Likewise, companies implementing effective PFP schemes tend to have higher shareholder returns and better financial performance (Blanes et al., 2020).

However, the relationship between PFP and corporate governance is complex and can vary depending on several factors. For example, a company's size and ownership structure, the sector in which it operates, and the regulatory environment can influence the effectiveness of PFP and corporate governance practices (Ntim et al., 2019).

Executive compensation is a crucial aspect of corporate governance and has been the subject of much research in Brazil (Leal et al., 2015). One aspect of executive compensation that has received significant attention is pay-for-performance sensitivity (Brandão et al., 2019), which refers to the degree to which executive compensation is tied to firm performance. Some recent studies have examined pay-for-performance sensitivity in Brazil, revealing exciting findings.

Some studies have suggested that effective corporate governance can mitigate some of the adverse effects of PFP (Brandão et al., 2019; Ntim et al., 2019; Iglesias et al., 2022), such as the independence of the board of directors from the controlling shareholder and the executive board (Brandão et al., 2019). Thus, companies with more robust corporate governance practices tend to outperform those with weaker governance practices regarding market value and financial performance (Sheick et al., 2018). Likewise, companies implementing effective PFP schemes tend to have higher shareholder returns and better financial performance (Blanes et al., 2020).

Abraham and Singh (2016) analysed the influence of majority and minority shareholders on executive compensation under conditions of CEO duality. The authors found that although executives are incentivised to meet the majority shareholders' objectives, minority shareholders' influences potentially disincentivise them.

Brandão et al. (2019) investigated the effect of board composition on executives' sensitivity to market performance. The research results demonstrate that the relationship between the monitoring carried out by the board of directors and the managers' compensation is a condition for its effectiveness as a governance mechanism in the Brazilian market.

Iglesias et al. (2022) analysed whether corporate governance characteristics influence PPS in the Brazilian capital market. The study results show that the board's composition increases executive compensation's sensitivity to performance while ownership concentration reduces it.

2.2.2 Executive Compensation and ESG

Malik and Shim (2022) examine the moderating role of CSR in the association between executive remuneration and the accounting and stock market performance of companies and reveal, concerning the direct role of CSR, that CEO remuneration is positively related to CSR performance, as well as playing a positive moderating role of CSR in the relationship between CEO remuneration and the performance of company shares, but not in accounting performance.

Nevertheless, Rath et al. (2020) investigate the role of ESG transparency in strengthening the impact of company performance on total CEO pay in ESG companies, finding that ESG metrics have the potential to intensify the negative relationship between company performance and CEO pay, while social disclosure scores do not.

Lee et al. (2024) assess the empirical association between environmental, social and corporate governance (ESG) performance and the remuneration of top executives in the US financial services sector and find that lagged ESG ratings are strongly associated with all forms of remuneration, showing persistent and significant associations with short- and long-term executive remuneration, and document the significant moderating effects of ESG on the relationships between company performance, size, leverage, ownership and executive remuneration, identifying how ESG is associated with remuneration.

Ajay et al. (2024) examine the impact of ESG disclosure metrics on executive pay in India, using a sample of top listed companies from 2007 to 2021 on executive pay in India, using a sample of major listed companies from 2007 to 2021. The study results show that a higher ESG score is associated with higher executive pay and that high ESG scores and executive pay are associated with better company performance.

Along the same perspective, Grodt et al. (2024) investigated the moderating effect of ESG disclosure on the sensitivity of executive pay-to-market performance in Brazilian companies listed on the B3 IBrX-100 index. They found that ESG disclosure maximises the sensitivity of executive pay-to-market performance.

Companies with strong ESG disclosure are likely to have better alignment between executive pay and the company's long-term performance since ESG practices encourage a focus on sustainable value creation and stakeholder engagement. Our first study hypothesis is that *ESG* disclosure *positively moderates the relationship between executive compensation and firm performance (Pay-FP)*. Table 1 summarises the main articles on this topic.

Table 2 - Summaries of critical articles on the subject

Study	Sample	Dependent Variable	Independent Variable	Moderating Variable	Mains Findings
Malik and Shim, 2022	4,193 firm-year observations for 1,318 US public firms for the period 2009–2013.	CEO Compensation	CSR ROA, Stock, Size, Levarage	Sotck/CSR, ROA/CSR Size/CSR	They find a positive moderating role for CSR in the relationship between CEO remuneration and company stock performance. However, the authors do not identify any role for CSR in the relationship between CEO remuneration and accounting performance. (“Empirical Examination of the Direct and Moderating Role of Corporate ...”)
Rath et al (2020)	67 firms in NSE NIFTY for the period of 2014–2019	Compensation	ESG, Q, ROA, ROE, Size, Lev, Ownership, CEO Specific Controls, Board Specific Controls	n/a	The results reveal that environmental and governance disclosure scores have the potential to intensify the negative relationship between company performance and CEO pay, while social disclosure scores do not.
Abudy et al .(2023)	48 banks (600 bank-years) from 14 developed countries for the period 2003-2017.	Compensation, CEo compensation, TOP5 Compensation	ESG Adoption, Post (dummy variable equal to one for the post-adoption period), Size, ROE, Crise 2008/2009, Board Controls	Adoption*Post, Adoption*Crisis, Post*Crisis, Adoption*Post*Crisis	Total remuneration increased significantly at banks that adopted ESG metrics*. This effect of EP adoption on executive remuneration does

					not depend on the bank's risk management structure or the timing of adoption. They found no evidence of a change in the performance of adopting banks.
Ajay et al. (2024)	293 Indian companies for the period 2007–2021.	Compensation (Main Model; Tobin's Q (Robustness Model)	ESG, Size, age, roa, grow, lev, cash, ownership (Main Model; High ESG. High Compensation, Size, age, roa, grow, lev, cash, ownership (Robustness Model)	Low ESG*Low Compensation, Hig ESG*Low Compensation, High ESG*High Compensation	Environmentally sensitive companies with higher scores in the governance pillars, which represent better governance practices, have higher executive remuneration. In addition, higher ESG scores and executive remuneration are associated with better company performance.
Grodt et al., 2024	81 Brazilian Companies from 2016-2019	Compensation Variation	Market Value, ESG, Corporate Governance Controls, Firm Controls	MV*ESG	ESG disclosure maximises the sensitivity of executive remuneration to market performance.

Note: * the authors evaluate ESG metrics using the Equator Principles (EP).

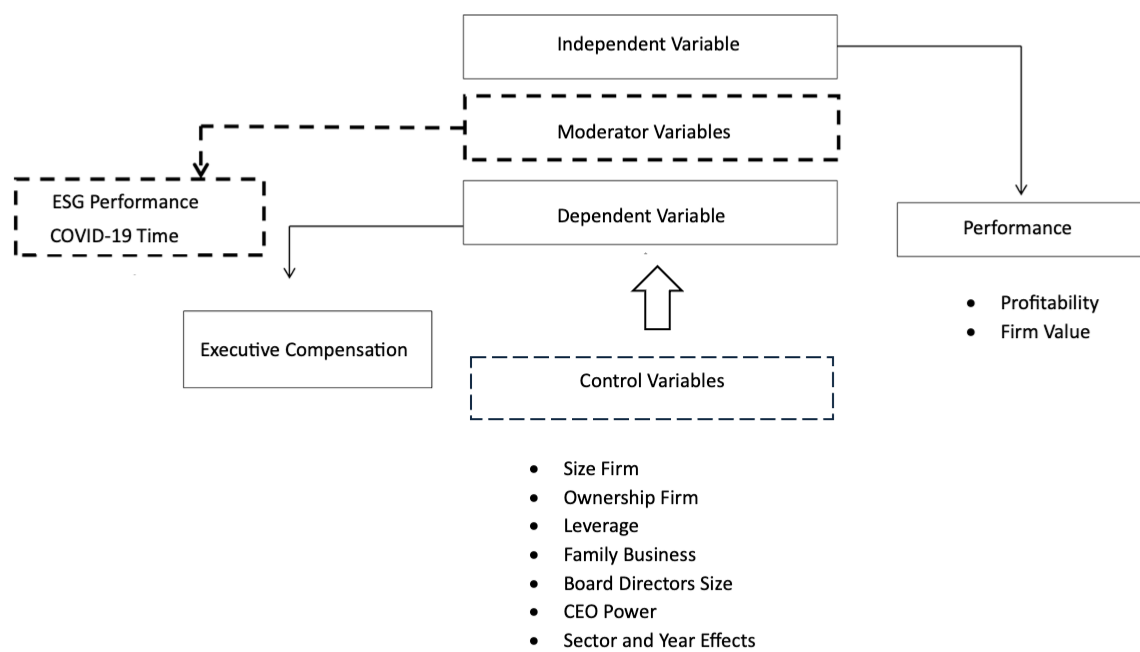
The pandemic has raised awareness of corporate responsibility and sustainability issues, potentially increasing the importance of ESG factors in executive compensation decisions and their influence on company performance. However, there needs to be more literature about how the interaction between ESG and the COVID-19 pandemic affects the relationship between pay and performance.

Regarding executive pay and the COVID-19 pandemic, Bedford et al. (2023) suggest that announcements of pay cuts were symbolic, with pay cuts being replaced by increases in cash bonuses. Ye et al. (2023) investigate the effects of firm performance on CEO pay before and during the COVID-19 pandemic. Using a sample of 4,410 observations of S&P 1500 firms from 2018 to 2021, they find that firm performance, as measured by return on assets and the log term of firm sales, positively affects CEO pay and the CEO pay index. However, the effects are the same before and during the COVID-19 pandemic.

It is considered that companies with higher ESG scores tend to have executive remuneration structures that are sensitive to performance measures, even during a systemic crisis. Hence, the pandemic may have catalysed ESG in remuneration structures, leading to a

more pronounced and significant relationship between executive remuneration and company results. Thus, our second hypothesis is that *the impact of the COVID-19 pandemic has led to a more pronounced relationship between ESG* disclosure *and the Pay-FP link.* Figure 1 shows our research design.

Figure 2 - Research Model



2.3 Methods

2.3.1 Data and Research Sample

This study uses a quantitative approach with an empirical-analytical approach. The research universe consists of publicly traded Brazilian companies listed on B3. The purposive sample is companies listed on B3 with ESG metrics available on the Refinitiv database from 2018 to 2023, including before, during and after the pandemic. According to the COVID-19 timeline (AJMC Team, 2021), we set its value to 1 if the information is disclosed in fiscal years 2020 and 2021 and 0 for the years before and after the pandemic (Ye et al., 2023). Furthermore, we excluded non-financial companies from the sample due to their business nature and unique regulatory system, which may influence the results (Crisóstomo et al., 2014). Data for this study

will be collected from various sources, including Thomson Reuters®, Capital IQ® and section 13 of the companies' Reference Forms available on the Securities Commission (CVM) website.

2.3.2 Empirical Models and Variance Design

The literature needs to reach a greater consensus on how to model the relationship between executives and performance. However, executive compensation is typically attributed to several factors related to the characteristics of companies and their executives and performance indicators derived from a time series (Carvalho & Devidé Junior, 2012). Data from this research will be submitted to multivariate linear regression analysis, which uses a statistical technique to examine the correlation between a dependent variable and multiple explanatory variables (Hair et al., 2009).

The panel data technique will be utilised to estimate the models by integrating cross-sectional and time-series data. This approach permits the investigation of the same companies across multiple periods, providing a dynamic analysis of the relationships among variables. This technique is highly suitable for this study, as it enhances estimators, controls unobserved differences, and minimises multicollinearity issues and bias of omitted variables (Wooldridge, 2010), thereby ensuring higher reliability in the econometric modelling.

In addition, we consider the possible impacts of endogeneity and reverse causality, adopting the generalised moment method (GMM) in estimating panel data and incorporating multiple observations of everyone in the long term.

Thus, our econometric analysis uses the dynamic GMM method (Bond, 2002), incorporating a lagged endogenous variable as an explanatory variable in the model. The models are validated using the Arellano and Bond (1991) tests to determine the presence of first and second-order serial correlation and the Hansen overidentification test to assess the validity of the instruments used in the model specification. Three econometric models will be used in this analysis.

$$Pay_{it} = \alpha_0 + \beta_1 pFP_{it-1} + \sum_{j=1}^{k} \delta_j Control_{ji} + \varepsilon_i \quad (1)$$

$$Pay_{it} = \alpha_0 + \beta_1 pFP_{it-1} + \beta_2 ESG_{it} \beta_2 + Covid_{it} \sum_{j=1}^{k} \delta_j Moderator\ Interactions_{ji} +$$

$$\varepsilon_i + \sum_{j=1}^{k} \delta_j Control_{ji} + \varepsilon_i \ (2)$$

$$Pay_{it} = \alpha_0 + \beta_1 pFP_{it-1} + \beta_2 ESG_{it}\beta_2 + Covid_{it} + \sum_{j=1}^{k} \delta_j Trhe_WayInteractions_{ji} + \varepsilon_i + \sum_{j=1}^{k} \delta_j Control_{ji} + \varepsilon_i \ (3)$$

Note: Compensation refers to the dependent variable. β1 Firm Performance (FP) refers to the financial or operational performance of the i-th company, as indicated by the following indicators: ROAit (net income divided by the i-th company's total assets), Q(TB) is (the value of the ITH company, represented by Tobin's Q and market value). $\sum_{j=1}^{k} \delta_j ESG$ Refers to the variable that measures ESG Score from Refinitiv Data Base.. $\sum_{j=1}^{k} Covid$ refers to the COVID-19 period (namely, 2022 and 2021). $\sum_{j=1}^{k} \delta_j Interactions_{ji}$ represents the interactions terms ESG*COVID. $\sum_{j=1}^{k} \delta_j Thee_Way_Interactions_{ji}$ represents the triple interaction between ESG*COVID*ROA and ESG*COVID*Q. $\sum_{j=1}^{k} \delta_j Control_{ji} + \varepsilon_i$ serves in a reduced form for several other explanatory variables, exercising a control function in the model, as described in Table 1. Finally, ε_i It represents the error term that captures the unsystematic component or the portion of variables not explained by the model.

In addition to including the interaction terms between ESG and COVID-19, we used a three-way interaction between ESG disclosure and the COVID-19 indicator. We also used the independent variable performance (Tobin's Q and ROA) according to the research model shown in Figure 2. The three-way interaction, otherwise known as the moderated moderation model, tests whether the influence of ESG on executive pay on performance is conditional on the temporal effect of COVID-19.

Figure 3 - Three-Way Interaction between ESG, COVID-19 and Q/ROA.

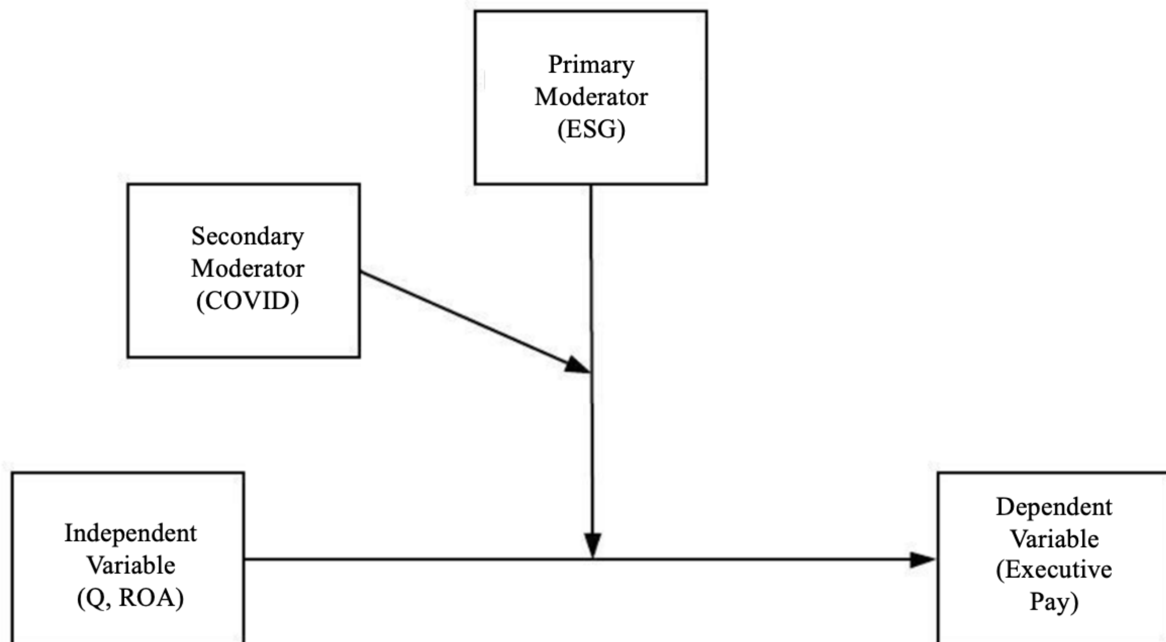


Table 1 contains the operational definitions of the explanatory variables and their expected relationships with executive compensation, together with the respective hypotheses.

Table 3 - Variables used in the research

Dependent Variable		Measurement Mode	Data Base	ES	Type	Theoretical Background
Total Compensation (TPAY)		Executive compensation for firm *i* at time *t*. Includes salary, bonuses, stock options. with a natural logarithm.	1		Continuous (log of total executive pay)	Jensen & Meckling (1976); Jensen & Murphy (1990); Conyon & He (2012); Ntim (2019)
Independent Variables		**Measurement Mode**			**Type**	**Theoretical Background**
Performance	Return on Assets (ROA)	Net income on total assets	2	+	Continuous (%)	Jensen & Meckling (1976); Conyon & He (2012); Ntim (2019)
	Return on Equity (ROE)	Net income on equity	2	+	Continuous (%)	Jensen & Meckling (1976); Conyon & He (2012); Ntim (2019)
	Tobin's Q (TQ)	A market-based measure of firm performance, calculated as market value divided by asset replacement cost.	2	+	Continuous (ratio)	Jensen & Meckling (1976); Conyon & He (2012); Ntim (2019)
ESG Score	ESG	ESG disclosure score for firm i at time t. Reflects environmental, social, and governance practices.	3	+	Continuous (ESG score)	Conyon (2016); Abraham & Singh (2016);

					Brandão et al. (2019)
	GOV	Percentage of ordinary stock owned by a CEO of a company	3	+	Continuous (ESG score)	Ntim et al. (2019)
	SOC	Dummy variable, 1, if the current CEO of a company is its founder, otherwise zero.	3	+	Continuous (ESG score)	Ntim et al. (2019)
	ENV	The maximum salary ratio (CEO) in relation to other executives.	3	+	Continuous (ESG score)	Ntim et al. (2019)
Covid	Covid Years	Total number of directors on the board of a firm with natural log	n/a	+/-	Binary (1 = Pandemic period, 0 = Pre and pós-pandemic)	Brandão et al. (2019)
Control Variables	Total Assets (SIZE)	Natural logarithm of assets	2	+	Continuous (logarithm of total assets)	Brandão et al. (2019); Ntim et al. (2019)
	Ownership concentration (OWC)	Percentage of ordinary shares (shares with votes) held by the largest (SVR1), the two largest (SVR2), the trhee (SRV3) largest, the four largest (SRV 4) and the five largest shareholders (SRV5).	2	-	Continuous (%)	Claessens et al. (2002); Ntim (2019).
	Capital Structure (LEV)	Total debs divided by total assets (LEV).	2	-	Continuous (ratio)	Jensen (1990); Ntim et al. (2015); Liu (2020).
	Board's Size	Total number of directors on the board of a firm with natural log	1	+	Continuous (logarithm)	Brandão et al. (2019)
	CEO Power	Percentage of ordinary stock owned by a CEO of a company	2	+	Continuous (%)	Ntim et al. (2019)
	Family Business	A dummy variable for family-owned firms is a binary variable that indicates whether a firm is classified as family-owned or not. It is coded as either 0 or 1.	2	+/-	Binary	
	Sector (SECT)	Dummy variable for each of the sectors of the sample.	2	+/-	Binary	Brandão et al. (2019); Ntim et al. (2019)
	Year (YEAR)	Dummy variable for each year of analysis from 2010 to 2022.	2	+/-	Binary	Brandão et al. (2019); Ntim et al. (2019)

Source: Research data.
Note: (i) * Dependent variable of the general research model; (ii) ** Expected Value: “+” in the case of a positive relationship; “-” in the case of a negative relationship; (iii)***: Expected Signal; Data Base: 1- CVM; 2 – Capital IQ; 3 – Refinitiv

2.4 Results and Discussion

Table 2 shows the results of the panel regression models estimated using the GMM-Sys tactic with the dependent variable lagged to control endogeneity and the model validation tests. In addition to mitigating problems of dynamic endogeneity, panel data estimation with dynamic effects aims to reduce problems arising from omitted variables, measurement errors, and simultaneity between dependent and independent variables. (Barros et al., 2020). Table 2 shows the principal coefficients, their robust standard errors, and significance levels.

All the models were validated using Hansen's J-test of overidentification restrictions, which checks that the instruments used are valid, i.e. that they are not correlated with the error

term. In other words, we did not reject the test's null hypothesis (P-value > 0.05), which suggests that the instruments are valid. We also performed the Sargan test, an alternative test for overidentification restrictions usually used with the Hansen test. The Sargan test's p-value (> 0.05) suggests adequate instruments in all the estimated models.

Furthermore, in the Arellano-Bond test for autocorrelation, the presence of first-order autocorrelation (expected) but the absence of second-order autocorrelation (AR(2)) indicates that the models are correctly specified. The appendix of our study deals with descriptive statistics and other model validation tests.

Table 4 - Regression Results

Variable	(1) lnPay	(2) lnPay	(3) lnPay	(4) lnPay	(5) lnPay	(6) lnPay
lnPay_it-1	.04272*** .04174	.06402*** .04103	.0636** .0411045	.04250*** .01453	04201*** .01366	.05390** .04055
ESG	.18612*** .03538			.19628 .03609		
COVID	-.1034* .08152			-.08326 .08319	-9.1957** 5.175391	
Q	.18693*** .04625	.10754* .09817	-.10860 .09863			
ROA				-.01547 .01062	-.08390 .00448	-.08390 .00448
SIZE	.28320*** .06323	.35031** .06240	.35063*** .06252	.19586*** .06009	.20801*** .0411	.27495*** .02020
LEV	.00033 .00227	-.00071 .00232	-.00070 .00232	.00025 .00231	.00046*** .00236	-.00004 .00120
OWN	-.0126 .00968	-.01308 .00987	-.0340 2.3598	.00297 .00907	.00288 .00707	1.032857 2.292977
CEOPOWER	.00288 .01480	.00555 .01517	-4.0340** 2.35982	.01211 .01486	.00120*** .01545	.01250*** .0015553
NBOARD	.06938*** .01608	.06119*** .01634	1.986053 9.592468	.0686** .01633	.0678*** .01722	.055815*** .01574
FAM	.5224*** .15216	6.57015*** 3.712292	.61232*** .154574	.67134*** .15469	.46241*** .15544	58608*** .07107
GROW	.00728*** .00196	.00768*** .00198	-0.98*** .27631	.00857*** .00200	006237*** .00201	.00926*** .00060
CoD	.00459 .00297	.08773 .02386	.00357 .00302	.0043878 .0030263	1.114** .2745849	.00356 .0028646
Q_ESG		.08623*** .02300	.08773*** .02386			0.465819* .2156838
ROA_ESG					.00447** .00337	.00075*** .00184
Q_COVID		-.01255 .05353	-.0079*** .07425			
ROA_COVID					-.10628*** .0116951	-.10628*** .01169
Q_ESG_COVID			-.0013207 .0040959			
ROA_ESG_COVID						.02174*** .00329
Intercept	13.309*** .45230	13.583** .4720369	13.566*** .47080	13.487*** .44426	.10628*** .0116951	13.206*** .24231
YEAR	Yes	Yes	Yes	Yes	Yes	Yes
SECTOR	Yes	Yes	Yes	Yes	Yes	Yes
N	441	441	441	441	441	441
AR1	0.018	0.032	0.033	0.034	0.036	0.04
AR2	0.190	0.170	0.171	0.24	0.21	0.173

Hansen (J)	0.630	0.592	0.598	0.48	0.51	0.47
Sargan	0.498	0.386	0.394	0.41	0.39	0.421
VIF Mean	1.44	1.44	1.44	1.44	1.44	1.44

Source: Research data.

Note*: (i) ***, **, and * represent significance at 1%, 5%, and 10%, respectively.*
(ii) Standard robust errors are reported in parentheses.

Our results for the direct effects reveal a positive and statistically significant ESG coefficient, indicating that ESG disclosure has a direct impact on remuneration, suggesting that companies that prioritise sustainability and social responsibility may also be more inclined to reward their leaders for aligning with these values, in line with agency and shareholder theory. Similarly, the statistically significant Tobin's Q coefficient suggests that market performance directly influences remuneration, suggesting that companies with good market performance may link remuneration closely to market results. Furthermore, the lack of statistical significance for the COVID variable indicates that the COVID pandemic has not had a direct and measurable impact on remuneration as other factors such as ESG, Tobin's Q, company size, number of executives, sales growth and family ownership are considered. Our results are in line with the work of Makik and Shhin, 2022, Lee et al., 2024, Ajay et al., 2024 and Grodt et al., 2024, which show that ESG disclosure maximises the sensitivity of executive remuneration to market performance.

Regarding the inclusion of moderating variables, our results suggest that the relationship between Tobin's Q and executive pay is positively moderated by ESG disclosure. In other words, as ESG disclosure improves, the positive effect of Tobin's Q on pay becomes stronger. In this sense, companies with higher ESG scores may be more likely to reward their executives or employees when they achieve better market performance, as Tobin's Q reflects.

In addition, the statistically positive and significant result of the interaction terms Q*Covid and Comp indicates that the relationship between Tobin's Q and remuneration is also positively moderated by the COVID-19 pandemic. During the pandemic, better market performance (higher Tobin's Q) is associated with a more substantial positive impact on remuneration. Despite the challenges imposed by COVID, companies that maintained or improved their market performance may have increased executive pay.

Our third interaction term, Tobin's Q * ESG * COVID, showed a negative and significant relationship with the dependent variable. The negative and significant three-way interaction term suggests that the positive effects observed in the two-way interactions (Tobin's Q * ESG and Tobin's Q * COVID) are weakened when ESG disclosure and COVID are

considered together. Specifically, the combination of high ESG disclosure and the presence of COVID decreases the strength of the positive relationship between Tobin's Q and Compensation. Our results suggest that while ESG and COVID-19 independently strengthen the link between Tobin's Q and Compensation, the simultaneous pressure to maintain high ESG standards during the pandemic may lead to a situation where market performance (Tobin's Q) does not translate as strongly into higher Compensation. This suggests a complex balancing act in which companies try to manage ESG commitments and pandemic-related challenges, leading to more cautious or restricted remuneration policies.

The results suggest that both ESG disclosure and the COVID pandemic independently increase the positive impact of market performance (Tobin's Q) on remuneration. However, when combined, the challenges of maintaining ESG standards during the pandemic may lead to a reduced emphasis on translating market performance into higher pay. This may reflect companies' difficulty in simultaneously prioritising long-term sustainability goals (ESG) and immediate crisis management (COVID), which can lead to more conservative remuneration strategies. In line with the work of Ye et al. (2023), although we found a positive relationship between executive pay and performance, we found no differences for the period of the Covid-19 pandemic.

Apart from the results stated above, our study can contribute to understanding how governance practices (reflected in ESG scores) interact with financial performance and external shocks (such as COVID) to influence decision-making on remuneration, as an instrument for aligning interests as advocated by Agency Theory (Jensen & Meckling, 1976). Furthermore, from the perspective of the Stakeholder Theory (Freeman, 1979), our results may reveal how companies that prioritise stakeholder interests (high ESG scores) balance firm performance and external challenges in the remuneration of their executives, supplementing the results of recent studies (Alshehhi et al., 2018; Alareeni & Hamdan, 2020; Zhou et al., 2022; Rahman & Zahid, 2021). As a result, the executive remuneration plan combined with better ESG disclosure can reduce information asymmetry and executives' moral hazard (Kong et al., 2023; Zhang et al., 2024).

2.5 Conclusion

Our study explains how a company's structures, performance, and governance influence its remuneration policies. These findings suggest that Remuneration is multifaceted, influenced

by both financial performance (Tobin's Q, sales growth) and organisational characteristics (company size, number of executives, family ownership), as well as the company's commitment to ESG principles. It was not impacted by the COVID-19 pandemic.

As ESG continues to be prominent, companies increasingly link remuneration to ESG disclosure, aligning executive incentives with broader corporate sustainability goals. This trend may reflect a growing recognition of the long-term value that good ESG disclosure can bring to a company.

The results of our study also suggest that both ESG disclosure and the COVID-19 pandemic independently increase the positive impact of market performance (Tobin's Q) on remuneration. However, when combined, the challenges of maintaining ESG standards during the pandemic may lead to a reduced emphasis on translating market performance into higher pay. This may reflect companies' difficulty in simultaneously prioritising long-term sustainability goals (ESG) and immediate crisis management (COVID), which can lead to more conservative remuneration strategies.

Our study has some limitations: 1. Sample bias: the study may be limited by the sample of companies selected, which may not fully capture the diversity of companies from different sectors, geographical regions and sizes. The results may only be generalisable to some companies, significantly smaller or privately held ones. Therefore, we suggest that future studies explore different samples; 2. Period: The period of the study may be limited in its ability to capture long-term effects, especially those related to the COVID pandemic, which may have longer-lasting consequences on Compensation that were not fully observed during the period studied. Future studies could use a more extended time to examine the long-term effects of ESG disclosure, market dynamics and external shocks, such as COVID, on compensation. 3. ESG measurement: ESG measurement can vary between companies and datasets, introducing inconsistencies in assessing ESG disclosure. The study may only partially capture all ESG dimensions or consider variations in how companies report their sustainability efforts. 4. omitted variables: There may be other factors that influence Compensation that were not included in the model, such as leadership style, sector-specific effects or regulatory changes, which may influence the results. We suggest working with new variables and interactions to increase our understanding of the moderating effects of the relationship between compensation and fixed remuneration.

CHAPTER 3 - ASSESSING THE IMPACT OF ESG PRACTICES ON PROFITABILITY AND FIRM VALUE IN LATIN AMERICAN COMPANIES DURING THE COVID-19 PANDEMIC.

'If the business community does not come together to define its social and environmental responsibility and then act on that definition, I fear we will not achieve a (that) better society - Courtney Pratt.

Abstract

In addition to claiming thousands of lives, the COVID-19 epidemic has had an impact on countries' economies and jeopardised companies' ability to survive. However, is it possible for companies to mitigate the adverse effects of the pandemic? The turning point that the pandemic represented for companies is still unknown. However, this health crisis has challenged the central assumptions of several theoretical foundations of finance, boosting essential implications for the future. Thus, this study aims to analyse the influence of governance practices in Latin American publicly traded companies on the value and volatility of shares in the context of the COVID-19 pandemic, seeking to contribute to the emerging literature on COVID-19 and market financial resources, considering the context of a developing country.

Keywords: Corporate Governance, COVID-19, Performance, Capital Markets.

JEL: G12, G14, G32

3.1 Introduction

Academic research has recently focused on disclosing Environmental, Social, and Governance (ESG) practices (Paoleoni, 2023). ESG disclosure refers to companies reporting their activities and impacts related to environmental sustainability, social responsibility, and corporate governance. This trend reflects a growing demand from investors, regulators, and other stakeholders for greater transparency and accountability in corporate practices (Gao & Geng., 2024).

One of the aspects that permeates the dynamics of the ESG agenda globally is systemic crises. From time to time, the world goes through various upheavals, such as wars and economic and health crises, which change the course of human life and have disastrous economic, social and political consequences (Almosh & Kathib, 2023). The world recently witnessed a crisis caused by the coronavirus (COVID-19) spread, which revealed significant imbalances in the economic and health governance systems, supply chains and even the political systems of many countries (Almosh & Kathib, 2023).

The health and economic context caused by the coronavirus pandemic, called Sars-Cov-2, has impacted the behaviour of the global financial market (Hsu & Liao, 2022). Over the days, we have seen an exponential increase in the number of cases of COVID-19, the disease caused by the virus, and as the virus has spread around the world, markets have been affected globally. Zhang, Hu, and Ji (2020) point out that the COVID-19 pandemic significantly impacts global markets, with significant increases in volatility and different and clear patterns before and after the announcement of the pandemic. In addition, the political response to the pandemic has often generated more uncertainty in global financial markets. According to Baker et al. (2020), no previous infectious disease outbreak, including the Spanish flu, has affected the stock market as strongly as the COVID-19 pandemic.

Consequently, the coronavirus pandemic has triggered an exogenous crisis and an unparalleled fall in stock markets (Albuquerque et al., 2020), as well as in economic systems (Zang et al., 2022), offering a unique opportunity to empirically test agency theories, stakeholder theory, signalling theory and the growing environmental, social, and corporate governance (ESG) approach.

Koutopis et al. (2021) analyse articles on governance in the context of Covid-19. The authors conclude that accounting data needs to be more comprehensive, requiring more research

in all countries (developed, emerging and others). Furthermore, even with the increase in the approach to the subject due to the improvement in the quality of disclosure, there are no conclusive results on the relevance of corporate governance or ESG metrics to financial performance. Thus, Koutopis et al. (2021) recommend that future research use additional methodologies and data sources to fully explain governance in this crisis context.

Aguinis (2020) emphasises the importance of analysing the Latin American context, which significantly differs from developed countries. As most theories of corporate governance, finance and accounting originated in developed countries, the time is ripe to test these theories in markets in different regions worldwide.

Furthermore, from the perspective of emerging economies, global crises reflect a particular context that makes these countries more susceptible as a result of the multiple relationships of interdependence between emerging countries and advanced economy countries, involving, for example, a decrease in global demand, a drastic reduction in prices of commodities, direct and portfolio investment outflows, weaknesses in the financial system and lack of protection for investors, elements that increase uncertainties, as well as transaction costs (Koutoupis et al., 2021; Tanjung et al., 2023).

The discussion on governance starts from the hypothesis that CG mechanisms positively impact the performance and value of companies (Jensen & Meckling, 1976; Conyon & He, 2014). However, the results of the studies are conflicting, and there are gaps in how this relationship occurs, especially in undeveloped or emerging economies (Conyon & He, 2014; Maranho & Leal, 2019).

The relationship between sustainable and financial performance is analysed through two theoretical lenses: stakeholder theory and resource-based theory (Grewatsch & Kleindienst, 2017; Lu & Khan, 2023). Stakeholders refer to any group or individual that can affect or is affected by achieving the organisation's objectives (Freeman, 1984; Vasconcelos et al., 2022). Waddock and Graves (1997) argue that SP concerns the relationship between a firm and its key stakeholders, and the quality of the relationship affects the quality of SP. The resource-based theory suggests that engaging in sustainability activities creates sustainable competitive advantages internally and externally. Thus, both theoretical perspectives expect a positive relationship between sustainability and financial performance.

Companies with good ESG practices tend to achieve more successful results in times of crisis (Shleifer & Vishny, 1997; Lemmon, 2013; Lu & Khan, 2023), as adequate corporate governance, sustainability and sustainability practices can reduce the vulnerability of companies in crises, as well as increasing access to capital, curbing corruption, reducing investment risks and reducing capital costs (Shleifer & Vishny, 1997). In addition, the voluntary adoption of ESG best practices can partially compensate investors and other stakeholders in a weak institutional environment (Maranho & Leal, 2019).

From this perspective, we seek to answer the following research question: How does ESG disclosure affect Latin American companies' profitability and firm value during a systemic crisis such as the COVID-19 pandemic?

The contributions of this study stem from the analysis of a recent crisis with a significant impact on financial markets. We highlight three main theoretical contributions: 1. This study extends the existing literature on ESG by focusing on an understudied context - Latin America - during a global crisis. It provides new insights into how ESG practices affect firm performance in emerging markets. 2. It provides insights for comparing the impact of the COVID-19 health crisis with other crises that markets have experienced. 3. The study examines individual ESG factors and their combined effect, providing a more comprehensive understanding of how integrated ESG practices affect firm performance. In addition, the research brings practical applicability to understanding the potential impact of good corporate governance practices, thereby increasing the managerial and societal impact of an issue with broad implications in the context of the pandemic. Future research findings can help regulators, policymakers, and companies prioritise stakeholder decision-making during the COVID-19 crisis and formulate future emergency preparedness and response strategies.

3.2 Literature Review

This section presents the theoretical support for the research development, explaining corporate governance through the theoretical lenses of agency, institutional, and stakeholder theories. Next, we present the nuances of corporate governance in the context of a crisis.

3.2.1 Corporate Governance and Theory Agency

The conflict of interests between corporate insiders (controlling and executive shareholders) and outside investors is at the heart of analysing modern corporations (Jensen & Meckling, 1976). This conflict occurs because each party tends to maximise its *Self-Interest*, thus generating the so-called agency conflict or agency problem (Shleifer & Vishny, 1997). According to Lin et al. (2006), crises represent critical challenges for organisational performance, both in internal and external dimensions, with no guarantees that high-performing organisations will continue to perform well during a crisis. Johnson et al. (2000) argues that if expropriation by managers increases when the expected rate of return on investment falls, an adverse shock to investor confidence will lead to greater expropriation, lower capital inflows and more significant attempts to move capital out of the country, which represents lower share prices and a depreciated exchange rate.

Several studies measure the influence of the COVID-19 pandemic on various dimensions, such as the stock market (Ashraf, 2020), the market (Mayhew & Anand, 2020), business modelling (Yahaya et al, 2020), the financial sector (Baicu et al., 2020), abnormal stock returns (Liu et al., 2020), corporate solvency (Mirza et al., 2020), liquidity (Qin et al., 2020), company performance (Mirza et al., 2020; Qin et al., 2020; Shen et al., 2020), among others.

Albuquerque et al. (2020) highlights three dimensions to analyse the current context of the crisis caused by the COVID-19 pandemic. Firstly, the authors argue that the COVID-19 crisis and subsequent economic lockdown is an unexpected shock to global stock markets. Therefore, it is an exogenous shock stemming from public health concerns and not due to intrinsic economic conditions (Kong, 2023). Finally, the pandemic has resulted in a stock market crash, observed in developed markets such as the United States and emerging countries such as Brazil and other Latin American countries.

Agency theory offers insights into predicting which companies with higher corporate governance scores are more resilient than others during stock market selloffs. Several studies have examined the effect of corporate governance on companies during financial crises, corroborating the hypothesis that corporate governance mitigates the impact of the agency problem and can be essential for company survival (Lemmon, 2003; Iwasaki, 2014; Aloui et al., 2019).

Mazur et al. 2020 investigated the performance of the US stock market during the March 2020 crash triggered by COVID-19. The authors found that natural gas, food, healthcare and software stocks had high positive returns. In contrast, the values of stocks in the oil, real estate, entertainment and hospitality sectors fell sharply. The authors also found that companies react in various ways to the COVID-19 revenue shock, revealing senior executive departures, pay cuts and (most surprisingly) cash bonuses and newly approved pay rises. In this sense, the behaviour may signal poor corporate governance and indicate a fruitful area for future research (Mazur et al., 2020).

3.2.1 ESG and theory framework

Stakeholder Theory, developed by Freeman (1984), posits that organisations should create value for shareholders and a wide range of stakeholders, including employees, customers, suppliers, communities and the environment (Carmo et al., 2023). The theory challenges the traditional shareholder-centred view of agency theory, advocating a more inclusive approach to corporate governance and decision-making (Parmar et al., 2010). Stakeholder refers to "any group or individual who can affect or is affected by the achievement of the organisation's objectives" (Freeman, 1984). Stakeholder Theory argues that value is created for the company when value is created for the various stakeholders (Parmar et al., 2010). In this sense, companies with solid ESG practices are more committed to involving shareholders and other company stakeholders and creating value.

Several studies have shown how ESG impacts firm value and profitability. The meta-analysis of 132 articles published in reputable journals found that journals found that 78 per cent found a positive relationship between sustainability and company financial performance (Alshehhi et al., 2018). In another meta-analysis, Whelan et al. (2021) reviewed more than 1,000 articles published between 2015 and 2020 that focused on the relationship between ESG and financial performance. The analysis found that 58% of the articles found a positive relationship between ESG and financial performance, 8% a negative relationship, 13% no relationship and 21% mixed results. No relationship, and 21% mixed results. They conclude that, Although the majority are positive, the results indicate that there is still disagreement on the issue Aydoğmuş et al. (2022)

Khalil et al. (2022) state that effective management of stakeholder relationships improves environmental outcomes and business performance. According to the natural

resource-based view, better environmental performance gives the firm a competitive advantage. The firm's natural resource-based view (NRBV) is a theory of the competitive advantage that the firm derives from its relationship with the natural world environment (Hart, 1995).

Thus, while the RBV posits that a company's resources and capabilities are crucial to obtaining and maintaining competitive advantage, the NRBV extends the perspective by acting that the natural environment can be a critical source of competitive advantage for companies that develop capabilities and resources geared towards sustainability (Hart, 1995).

3.2.3 Hypothesis development

Academic research has recently focused on disclosing Environmental, Social, and Governance (ESG) practices. ESG disclosure refers to companies reporting their activities and impacts related to environmental sustainability, social responsibility, and corporate governance (Li et al., 2021; Paolene, 2023). This trend reflects a growing demand from investors, regulators, and other stakeholders for greater transparency and accountability in corporate practices (Srivastava et al., 2022).

The impact of ESG disclosure can vary by region due to differences in regulatory environments, market maturity, and cultural attitudes towards sustainability. For instance, European companies operating in a region with stringent ESG regulations might see more pronounced effects of ESG disclosure on firm performance than firms in emerging markets. The influence of ESG disclosure also varies across industries. Sectors with significant environmental impacts, like energy and manufacturing, may experience stronger correlations between ESG practices and financial performance than service-oriented industries (Zhang et al., 2020; Srivastava et al., 2022).

Many companies in Latin America need more comprehensive and reliable ESG data, making it difficult for researchers to conduct thorough and accurate studies (Husted et al., 2019). Companies in Latin America often use different reporting standards and frameworks, leading to consistency in the available data. Many regional companies must disclose their ESG practices voluntarily, and there is limited regulatory pressure (Aguinis et al., 2020; Maranho et al., 2018).

Although ESG studies have increased in recent years, including in emerging countries, more research is needed to understand how local socioeconomic conditions, environmental

challenges and governance issues influence the relationship between ESG disclosure and company performance in Latin America (Aguinis et al., 2020; Gillan et al., 2021).

According to stakeholder theory, companies that excel in ESG disclosure effectively engage and create value for various stakeholders, including employees, customers, suppliers, communities and the environment. This engagement leads to greater stakeholder trust, loyalty and cooperation, which can translate into better financial performance.

In addition, companies with strong ESG practices can better identify and mitigate risks related to environmental, social and governance issues. This proactive risk management can reduce the likelihood of costly incidents such as environmental fines, social unrest or governance scandals, thereby protecting profitability. The VBRN theory suggests that these companies are better placed to adapt and find new growth paths, protecting and increasing profitability during systemic crises.

Agency theory also supports the relationship between ESG disclosure and firm value based on the idea that strong ESG can reduce agency costs, improve monitoring and governance, align incentives and mitigate risks (Conyon & He, 2014). Empirical studies have shown that companies with strong governance practices, a key component of ESG disclosure, tend to have better financial performance (Jensen & Meckling, 1976; Conyon & He, 2014; Mazur et al., 2020; Koutopis, 2021; Tettamanzi, 2021). Other studies have shown that companies with high ESG scores are better able to manage risk and cope with crises (Al Amosh & Kathib, 2023; Eliwas et al., 2021; Veeravel, 2024; Johnson et al., 2000; Lemmon & Lins, 2003; Srour, 2005; Mazur et al., 2020). This ability increases their resilience and profitability in the face of systemic challenges.

Conversely, a review of the literature reveals that studies examining the relationship between ESG disclosure and company performance in the context of the global pandemic of 2019-2021 have yielded disparate or contradictory conclusions (Sávio et al., 2020; Koutoupis et al., 2021; Tettamanzi et al., 2022; Gao & Geng, 2024). Sávio et al. (2020) highlight the necessity for further research into the ESG/COVID-19 combination to gain a deeper understanding of the various dimensions of this context. Koutoupis et al. (2021) posit that corporate governance (CG) in the context of the Coronavirus Disease 2019 (COVID-19) pandemic has been predominantly studied in developed countries and within a theoretical framework (Takahashi & Yamada, ,2021). Moreover, the existing literature does not provide

definitive conclusions on the relevance of ESG and CSR to financial performance. In a comprehensive review, Mari et al. (2024) provides a basis for future research on ESG disclosure, encouraging a balanced approach that integrates the perspectives of developed and emerging economies in the post-pandemic era.

Duque-Grisales and Aguilera-Caracuel (2021) analysed 104 multinational corporations in Latin America from 2011 to 2015, finding a complex relationship between ESG scores and financial performance. The study found a negative relationship between ESG and FP but a moderating effect of financial slack and international geographical diversification on the relationship between ESG dimensions and companies' FP (Duque-Grisales & Aguilera-Caracuel, 2021).

Based on empirical studies on the relevance of ESG for profitability and company value, on Agency Theory, which provides support for monitoring and governance, and Stakeholder Theory, according to which managers show information to generate long-term value. We formulated two hypotheses for our study: Hypothesis (H1): Taking other conditions into account, the better the ESG disclosure, the better the profitability performance and the stronger the company's ability to respond to systemic crises; Hypothesis* (H2): Taking other conditions into account, the better the ESG disclosure, the better the company's value and the greater its ability to respond to systemic crises.

3.3 Research design

This research uses a quantitative approach, starting from structured conceptual contributions for the formation of hypotheses. This research uses a quantitative approach, starting from structured conceptual contributions for the formation of hypotheses. According to Richardson (1989), descriptive studies that seek to identify and classify the relationship between variables apply the quantitative approach. Regarding the research strategy, this study is ex post facto and analyses variables after the occurrence of the facts. Therefore, the study deals with variables that are not manipulable. At the epistemological pole, the project seeks an empirical-analytical approach in which variables, operationalised as dependent and independent, determine functions (Campbell & Stanley, 1963).

3.1 Sample, Time Frame & Data Source

Our sample consists of all the companies listed on the stock exchange: Argentina, Brazil, Chile, Colombia, Mexico, and Latin American countries, with the primary capital markets in terms of volume in the region. We employed purposive sampling with the following criteria: 1. All companies listed on the Stock Exchange of Argentina, Brazil, Chile, Colombia, and Ecuador for 2018-2023. The period was selected due to the context of the pandemic, which covers the years 2020 and 2021, so two years before and two years after the period affected by the COVID-19 pandemic were considered; in addition, the number of companies reporting ESG scores before 2017 is significantly lower than in 2018 compared to 2018 (Refinitiv, 2023) and the nature of this study assumes that the company has reported its ESG score before, during and after the Covid-19 pandemic; 2. All companies that publish annual reports during the period 2018-2023. All companies that have ESG scores during the 2018-2023 period, whose information is available in the Refinitiv ESG Scores system. Financial and market results have been normalised in dollar currency for the analysis.

We combined the data from the Capital IQ and Refinitiv Workspace databases to collect information on financial data and the ESG indicators Thomson Reuters Refinitiv Eikon, and we operationalised our analysis in the *software* Stata®18.

3.3.2 Variables and Measurement

To measure profitability, we used two indicators: Return on Assets - ROA and Return on Equity – ROE (Eliwa et al., 2021; Houqe et al., 2020; Hamrouni et al., 2019). ROA indicates how efficiently a company is using its assets to generate profits. It is calculated as net profit divided by total assets. While ROE measures the return generated on equity, it is calculated as net profit divided by equity. To measure the value of the company, we use Tobin's Q, which is the ratio between a company's market value and its assets' replacement cost. It is calculated as the company's market value divided by the replacement cost of the assets.

The ESG score evaluates a company's performance based on environmental, social, and governance criteria. It is usually provided by Refinivit (2023) and has the following components: Environmental (E): measures a company's environmental impact, including carbon footprint, resource use, waste management and environmental innovation.; Social (S): Evaluates a company's social practices, including labour standards, community relations, diversity and human rights. Governance (G): Evaluates the company's governance structures, including board composition, executive remuneration, transparency and shareholder rights.

Several studies have also used this database to analyse the ESG-performance relationship. (Duque-Grisales & Aguilera-Caracuel, 2021; Chairani & Siregar, 2021; Giannopoulos et al., 2022; Naeem et al., 2022).

Furthermore, we used the mediator variable covid, control variables for differences between companies and countries, and dummies for the different sectors and years of the study. See Table 1 for definitions and measurements of the variables included in this study.

Table 5 - Variables used in the research

Dependent Variable *		**Measurement Mode**		
Return on Assets (ROA)		Net income on total assets		Naeem et al., 2022; Saygili et al., 2021; Giannopoulos et al., 2022, Malik & Kashiramka, 2024
Return on Equity (ROE)		Net income divided by shareholders' equity		Naeem et al., 2022; Saygili et al., 2021; Giannopoulos et al., 2022
Tobin's Q (TQ)		A market-based measure of firm performance, calculated as market value divided by asset replacement cost.		Atan et al., 2019; Dalal & Thaker, 2019; Saygili et al., 2021; Giannopoulos et al., 2022; Naeem et al., 2022, Malik & Kashiramka, 2024
Independent Variables		**Measurement Mode**	**SE**	**References**
ESG Metrics	ESG Score	ESG disclosure scores	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Env Score	The environmental dimension of the ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Soc Score	The social dimension of ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Gov Score	The governance dimension of ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
COVID	COVID-19	This time dummy variable takes on the value 1 for the years 2020 or 2021, 0 if not	-	Sandberg et al. (2023); Lu and Khan (2023); Tanjung (2023), Malik & Kashiramka, 2024
Moderating Variable		**Measurement Mode**	**SE**	**References**
ESG*COVID		Interaction between ESG and COVID variables		Lu & Kahn, 2023, Al Amosh & Khatib (2023)
Control Variable		**Measurement Mode**	**SE**	**References**

Firm Control	Size	Natural logarithm of total assets	+	Veeravel (2024) Lee et al (2024)
	Leverage	The ratio of total liabilities to total assets	-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)
	Cost of Debt	The ratio of interest expenses of a firm to its average debt.	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)
	Ownership	Percentage of stock ownership of the three largest shareholders	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023), Malik & Kashiramka, 2024
	Sales Growth	Annual changes in sales	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)
Country Control	GDP	Log of Gross Domestic Product	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)

Source: Research data.

Note: (i) * Dependent variable of the general research model; ** Expected Value: "+" in the case of a positive relationship; "-" in the case of a negative relationship; *** Related hypothesis according to section 2.2, whereas control variables do not have specific hypotheses. (ii) CV: control variable.

3.3.3 Empirical Design & Model Setting

To test the hypotheses, we intend to use time series with linear regression models estimation of panel data by fixed and random effects methods. In addition, we will perform robustness tests to validate the models. The intention is to compare the results with the use of the dynamic generalised method of moments (GMM) to mitigate the possible effects of endogeneity (reverse causality and simultaneity), common studies that involve the verification of the executive pay sensitivity and performance (Barros et al., 2010). Furthermore, the research uses accounting indicators to measure performance and value proxies, such as Tobim's q, and control variables. Model 01 consists of a projection of the primary model to perform empirical tests.

$$performance = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + Year\&Industry\ Fixed\ Effects + \varepsilon_i$$

We also tested the moderating impact of COVID-19 on ESG and company value and profitability (Lu & Kahn, 2023). We constructed a COVID dummy equal to one for 2020 and 2021 and zero for the remaining years from model 2.

$$performance = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \beta_2 ESGScore * covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + \sum_{j=1}^{k} \delta_j \, Year\&Industry \, Fixed \, Effects \, + \, \varepsilon_i$$

Where each company's performance is a dependent variable concerning profitability(ROA, ROE) and firm value (Tobin's Q).

ESG of ith company's consists of the ESG index from Refinitiv Eikon® Platform. Involving classic variables used in governance models, involving proxies for ownership structure, board of directors, protection of minority shareholders and transparency (Lemmon, 2003; Peixoto, 2012; Iwasaki, 2014; Aloui et al., 2019)

COVID consists of using dummy variables for the pre-crisis and post-crisis periods. We use, a priori, the four quarters of 2020 and 2021 to capture the effect of the crisis (Hsu & Liau, 2022; Koutopis et al., 2021).

*ESG*covid* interaction between governance and covid variables.

i = companies.

t = periods

xδ Control is the reduced form for several model control variables, such as Total Assets to control the difference between firm size and GDP used to control the difference between countries (Crisóstomo & Brandão, 2019)

€i is an error term that captures the unsystematic component, the portion of variables not explained by the model.

3.4 Empirical Results and Analysis

It is essential for the model to have a low correlation in the explanatory variables. A high correlation would result in low efficiency since the variables would present an exact linear combination. Appendix A1 shows the correlation matrix of the variables employed in the research. Appendix A2 lists the descriptive statistics for the study sample.

3.4.1 Baseline Regression Results

This section discusses the relationship between ESG disclosure results and company performance. First, we address the impact of ESG scores on company profitability. Next, we explore how ESG scores affect firm value. Finally, we carry out robustness tests and validate the results. We used the LM and Hausman tests to determine the most appropriate estimator for OLS, fixed effects, and random effects models. Then, for robustness and endogeneity control, we tested the models using dynamic GMM panels (Barros et al., 2020; Malik & Kashiramka, 2024).

We applied the F-test to check the individual effects. The null hypothesis for the F test is that all individuals have equality in the intercepts and slopes. The F Test indicated that spatial and temporal heterogeneity is at a significance level of 1%, thus ruling out the POLS option. Next, using the Hausmann test, we checked the correlation between the unobserved heterogeneity and the set of explanatory variables. The test indicated a correlation between the errors and the independent variables, and the FE estimator was chosen. Tests were then applied to verify the presence of serial correlation in the FE estimation. The Shapiro-Wilk test indicated that the regression residuals were abnormal (p-value = 0.061). Finally, the Breusch-Godfrey/Wooldridge test was applied to check for serial correlation problems in the data. The null hypothesis is that this characteristic is not found in the series. In this sense, the test indicated a correlation problem in the estimation by FE. However, temporal problems tend to be more of a concern when $T > N$. Therefore, we proceeded to use standard errors robust to serial correlation in the estimation by FE.

Table 6 - Tests of the additive model

Applied test	**Estimate**	**p-value**	**Objective**
Teste F	F = 12.34	0.000	Unobserved heterogeneity.
Hausmann	$\chi 2$ = 88.06	0.000	Correlation between unobserved heterogeneity and the set of explanatory variables.
Lagrange	$\chi 2$ = 5.778	0.056	Heteroscedasticities.
Pesaran (EF)	z = -2.475	0.013	Cross-sectional dependence.
Shapiro-Wilk (EF)	W = 0.96	0.061	Normality of residues.
Breusch-Godfrey	$\chi 2$ = 72.526	0.000	Serial correlation.

Note: Statistical significance is 1%, 5% and 10%.

Table 3 shows the regression model results with fixed effects panel data.

Table 7 - Regression results

$$perfomrnance = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + Year\&Industry\ Fixed\ Effects + \varepsilon_i$$

		QT (1)	ROA (2)	ROE (3)
Intercept	β	10.680***	16.766***	17.264***
	se	(4.621)	(7.084)	(15.1955)
ESG	β	0.0897***	0.489***	0.226*
	se	(0.066)	(0.090)	-0.938
COVID	β	- 0.08702**	-0.594**	0.3805
	se	(.0462)	(0.0167)	(0.0363)
SIZE	B	-.55412***	-0.105*	1.037**
	se	(0.0369)	(.2079)	(0.391)
LEV	β	-0.0067**	-0.006*	2.956**
	se	(0.017)	(1.223)	(2.336)
COD	β	-0.5324*	-4.579**	-10.540***
	se	(0.121)	(2.392)	(4.442)
OWN	β	0 .0009	0.801	1.4415
	se	(0.1507)	(0.8562)	(1.884)
GROWTH	β	0.2649	3.70	6.079
	se	(0.546)***	(0.103)	(7.308)
GDP	β	-0.3611**	-1.835*	-3.040 *
	se	(0.1159)	1.217	(2.870)
N.obs.		488	488	488
Year Fixed Effect		Yes	Yes	Yes
Sector Fixed Effect		Yes	Yes	Yes
R2		0.181	0.189	0.171

Source: Research data.

Note: (i) ***, **, and * represent significance at 1%, 5%, and 10%, respectively. (ii) Robust Standard errors are reported in parentheses.

The analysis used a fixed-effects panel data regression with robust standard errors to examine the relationship between ESG disclosure and three dependent variables: Tobin's Q,

Return on Assets (ROA), and Return on Equity (ROE). The impact of the COVID-19 pandemic was also assessed. The positive coefficients for ESG on Tobin's Q, ROA, and ROE suggest that companies with better ESG disclosure are viewed more favourably by the market (higher Tobin's Q), are more efficient in their operations (higher ROA), and generate higher returns for shareholders (higher ROE).

These initial findings suggest the value of integrating ESG practices into corporate strategy, as they contribute positively to market perceptions and financial performance. The negative coefficients for COVID-19 on Tobin's Q and ROA reflect the adverse effects of the pandemic on market valuations and operational efficiency. The lack of a significant relationship between COVID-19 and ROE suggests that although the pandemic has impacted market perceptions and operational efficiency, companies have managed to maintain their returns on equity.

4.2 Moderating impact of environmental, social and governance on performance

Table 3 shows the regression model results with the interaction term between ESG disclosure and the COVID-19 period.

Table 8- Regression results with moderator variables

$$perfomrnance = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + Year\&Industry\ Fixed\ Effects + \varepsilon_i$$

		QT (1)	ROA (2)	ROE (3)
Intercept	β	10.680***	16.766***	17.264***
	se	(4.621)	(7.084)	(15.1955)
COVID	β	-1.540***	-0.277***	-1.61
	se	(0.066)	(0.090)	(3.24
ESG*COVID	β	0.3243***	0.1249***	0.226*
	se	(0.066)	(0.090)	-0.938
SIZE	B	0.1058***	-0.105***	1.037**
	se	(0.0369)	(.2079)	(0.391)
LEV	β	-0.0067	-0.006*	2.956**
	se	(0.017)	(1.223)	(2.336)
COD	β	-0.5324*	-4.579**	-10.540***
	se	(0.121)	(2.392)	(4.442)
OWN	β	0 .0009	0.801**	1.4415
	se	(0.1507)	(0.8562)	(1.884)
GROWTH	β	0.2649	3.70	6.079
	se	(0.546)***	(0.103)	(7.308)
GDP	β	0.3611***	-1.835*	-3.040 *
	se	(0.1159)	1.217	(2.870)
N.obs.		1.018	1.018	1.018
Year Fixed Effect		Yes	Yes	Yes
Sector Fixed Effect		Yes	Yes	Yes
R2		0.181	0.189	0.171

Source: Research data.

Note: (i) ***, **, and * represent significance at 1%, 5%, and 10%, respectively. (ii) Robust Standard errors are reported in parentheses.

We use the ESG*COVID interaction as a mediating variable to explore how the combination of a company's ESG disclosure and the impact of the COVID-19 pandemic influence financial results. This interaction term helps to understand whether the effect of ESG disclosure on financial metrics changes in the context of the COVID-19 pandemic.

The ESG*COVID interaction term shows a positive coefficient for Tobin's Q, indicating that the positive impact of ESG disclosure on market valuation is stronger during the pandemic. This suggests that investors may value the resilience and risk management capabilities of ESG-centred companies more in times of crisis.

Similarly, the interaction term shows a positive coefficient for ROA, suggesting that the operational efficiency benefits of ESG disclosure are amplified during the pandemic. ESG-centred companies may have managed their resources and operations better to maintain efficiency during the crisis. For ROE, the interaction term was not statistically significant.

3.4.3 Robustness Test

Endogeneity is a common problem in econometric studies where the explanatory variable is correlated with the error term, causing estimator bias and inconsistent results. In this way, we can have reverse causality (financial performance can influence ESG practices), omitted variables (unobserved factors that affect both ESG and financial performance), or Measurement error: Uncertainties in the measurement of ESG variables. We then used the GMM estimators as a robustness test to confirm the significance and magnitude of the relationships found in the original estimates, verifying that endogenous biases do not influence the relationships between ESG and financial performance.

Lagged variables are often used as instruments in econometric models to solve endogeneity problems in research on ESG disclosure and financial performance. In the Generalised Method of Moments (GMM) context, the lagged values of the explanatory and dependent variables serve as valid instruments, assuming they are not correlated with the error

term. This approach benefits dynamic panel data models, where time dependencies and past values significantly explain current results. We demonstrate the model setting below.

Y_it = α + βX_it + γY_it-1 + δZ_it + ε_it

Where:

- YitY_itYit is the dependent variable.
- XitX_itXit is the vector of explanatory variables.
- Yit−1Y_it-1Yit−1 is the lagged dependent variable.
- ZitZ_itZit are other control variables.
- \εit\ε_it\εit is the error term.

Thus,

ΔPerformance_it = β1 ΔESG_it + β2 ΔPerformance_it-1 + Δε_it

Table 9 - GMM Model Results

ΔPerformance_it = β1 ΔESG_it + β2 ΔPerformance_it-1 + Δε_it

		QT (1)	ROA (2)	ROE (3)
		QT (1)	ROA (2)	ROE (3)
Intercept	β	10.680***	16.766***	17.264***
	se	(4.621)	(7.084)	(15.1955)
ΔPerformance_it-1	β	-1.540***	-0.277***	-1.61
	se	(0.066)	(0.090)	(3.24
COVID	β	-1.540***	-0.277***	-1.61
	se	(0.066)	(0.090)	(3.24
ESG*COVID	β	0.3243***	0.1249***	0.226*
	se	(0.066)	(0.090)	-0.938
SIZE	B	0.1058***	-0.105***	1.037**
	se	(0.0369)	(.2079)	(0.391)
LEV	β	-0.0067	-0.006*	2.956**
	se	(0.017)	(1.223)	(2.336)
COD	β	-0.5324*	-4.579**	-10.540***
	se	(0.121)	(2.392)	(4.442)
OWN	β	0 .0009	0.801**	1.4415
	se	(0.1507)	(0.8562)	(1.884)
GROWTH	β	0.2649	3.70	6.079
	se	(0.546)***	(0.103)	(7.308)
GDP	β	0.3611***	-1.835*	-3.040 *
	se	(0.1159)	1.217	(2.870)
N.obs.		1.018	1.018	1.018
R^2		0.1815	0.1936	0.1676
AR1		0.029	0.023	0.016
AR2		0.189	0.340	0.171

Hansen (J)	0.498	0.542	0.521
Diff-Hansen (C)	0.396	0.341	0.492
VIF Mean	1,55	1,99	1,44

Source: Research data.
Note: (i) ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

The Hansen/Sargan test demonstrates the instruments' validity, and the Arellano-Bond test shows the absence of second-order autocorrelation in the residuals of differences.

3.5 Conclusion & Insight

Our study analysed the impact of ESG disclosure on the profitability and resilience of companies during the COVID-19 pandemic in Latin American countries. The results indicate that ESG disclosure positively and significantly influences Tobin's Q, ROA and ROE. This suggests that companies with robust ESG practices are more valued in the market, operate more efficiently and show better returns on equity. The ESG*COVID interaction term indicated that the positive effects of ESG disclosure are more pronounced during the pandemic. This emphasises the role of ESG in strengthening a company's resilience and ability to navigate systemic crises. COVID-19 hurt Tobin's Q and ROA, reflecting the adverse effects of the pandemic on market valuation and operational efficiency.

The study contributes to the literature on the role of ESG disclosure during systemic crises such as the COVID-19 pandemic. The empirical results suggest that ESG practices can increase a company's resilience and profitability, even during periods of generalised economic disruption and in the context of Latin America.

Furthermore, the research findings offer practical implications. Firstly, companies should integrate ESG considerations into their core strategies, not only for ethical reasons but also to improve financial performance and resilience. ESG practices can serve as a competitive advantage, particularly during periods of systemic crisis, as NRBV theory points out. Secondly, policymakers should continue encouraging the dissemination of ESG information and practices among companies. Given the benefits demonstrated by ESG practices during the COVID-19 pandemic, enabling more widespread adoption can contribute to global economic stability and sustainability. Thirdly, investors should consider ESG disclosure a critical factor in their investment decisions. Companies with strong ESG practices will be more resilient and provide better long-term returns, especially in volatile and uncertain environments. Finally, we note that effective corporate governance structures that address ESG issues can help companies better

manage risks and strengthen stakeholder trust, as stakeholder theory emphasises. Boards of directors and executives should ensure that ESG principles are integrated into their corporate governance frameworks, thus demonstrating the importance of more companies adopting the practice of ESG disclosure.

Empirical studies can present several limitations. Firstly, our analysis is based on the availability and quality of secondary data (ESG from Refinitiv Thomson Reuters). Inconsistencies or limitations in the data may affect the soundness of the conclusions. Secondly, the analysis covers a specific period during the COVID-19 pandemic. While it provides valuable information on the role of ESG during a crisis, the conclusions may not be fully generalisable to other periods or types of crises. Thirdly, despite using GMM to control for endogeneity, there may still be omitted variables that influence ESG disclosure and financial results, potentially biasing the results.

For future studies, we suggest using other databases, such as Bloomberg, including more Latin American countries, to analyse other economic crises and combine different variables. Incorporating qualitative methods, such as case studies or interviews, could provide a more nuanced understanding of how companies implement ESG practices and the specific challenges they face in times of crisis. Finally, investigating other potential mediation and moderation effects, such as how specific governance practices or other market conditions influence the ESG-performance relationship, could provide more detailed information.

CHAPTER 4 - THE ESG-DEBT NEXUS: INSIGHTS FROM LATIN AMERICAN CORPORATE FINANCE

"If people are good only because they fear punishment and hope for

reward, then we are a sorry lot indeed".

– Albert Einstein, 1921

Abstract

We investigate the impact of environmental, social and governance (ESG) performance on Latin American companies' debt cost, specifically focusing on how the COVID-19 pandemic moderates this relationship. Using panel data of companies from several Latin American countries, the analysis reveals a significant negative relationship between overall ESG disclosure and the cost of debt, indicating that companies with higher ESG scores benefit from lower borrowing costs. The results also highlight the crucial role of governance within the ESG framework, which has the most substantial impact on reducing the cost of debt compared to environmental and social factors. Furthermore, we did not find a statistically significant relationship between the interaction term ESG disclosure and the COVID-19 pandemic and the cost of debt. This suggests that the ESG effect needed to be more sufficient to reduce the cost of capital in this context of uncertainty and volatility. Our research extends the literature on sustainable finance by providing empirical evidence of an emerging market context that has not yet been investigated about the cost of debt and ESG and offers practical insights for corporate managers, investors and policymakers on the importance of integrating ESG considerations into financial decision-making.

Keywords: "ESG disclosure", "cost of debt", "Latin America", "sustainable finance".

JEL: G12, G14, G32

4.1 Introduction

In recent years, the performance and disclosure of environmental, social and governance (ESG) information has become an important element in the financial market (Zhang et al., 2024). ESG criteria, encompassing a company's environmental management, social responsibility and governance practices, are increasingly used by investors (Huang, 2021; Zhou et al., 2022). This shift reflects a growing recognition that ESG factors influence a company's financial performance, risk profile and overall valuation (Al Amosh & Khatib, 2023). Thus, the most significant interest assumes that companies with high ESG scores are more transparent and accountable and are more likely to generate long-term value for their stakeholders.

Considering the financial sector's growing demand for a connection between sustainability and financial performance, ESG scores are crucial in developing sustainable investment approaches and informing stakeholders about comprehensive risk management (Liu et al., 2023).

Furthermore, the systemic crisis caused by the COVID-19 pandemic has further emphasised the importance of ESG factors, demonstrating the need for resilient and sustainable business practices, as companies with strong ESG disclosure have shown greater resilience during economic disruptions. We found that the pandemic accelerated the focus on social and governance issues and that integrating ESG criteria into financial decision-making became even more critical in the post-pandemic recovery phase.

In addition, the cost of debt, which refers to the effective rate a company pays for its capital, has become even more crucial during the recent COVID-19 pandemic (Fiorillo & Santilli, 2024). Companies have faced unprecedented challenges in terms of their ability to secure favourable borrowing conditions. The pandemic has also led to greater scrutiny of companies' risk management and resilience, potentially influencing how lenders assess creditworthiness. Furthermore, in recent years, lenders and investors have progressively considered ESG disclosure a critical indicator of a company's long-term viability, operational risk, and solvency, thus influencing the terms and conditions of debt financing.

In other words, a corporation's investments in good ESG practices and the accurate disclosure of these activities suggest effective monitoring of its activities and its commitment to sustainability for the different potential stakeholders, leading to positive impacts on the company's image, which can translate into lower perceived risks and consequently lower debt

costs, including generating a lower cost of debt during periods of crisis such as the covid pandemic, 19.

Latin America has a different financing structure from developed countries, based on bank credit, which is also due to the civil law system's characteristics to the detriment of the common law system (Crisóstomo et al., 2020). As such, Latin America offers a unique and diverse context for analysing this relationship. The region is characterised by a wide range of economic environments, varying levels of regulatory development and distinct socio-political scenarios. Despite these differences, we see a growing awareness and adoption of ESG practices in Latin American countries, driven by global investment trends, local regulatory advances and increasing pressure from stakeholders.

However, the specific impact of ESG disclosure on the cost of debt in Latin America is still a field to be explored in the academic literature. Existing studies have focused on developed markets, leaving a gap in understanding how this dynamic manifest in emerging economies with distinct institutional contexts. This research aims to fill this gap by providing an empirical analysis of how ESG disclosure influences the cost of debt of companies operating in Latin America in a crisis context, offering contributions to the field.

In addition to theoretical contributions, our results also offer practical implications. For company managers, we provide practical insights into how improving ESG disclosure can lead to favourable financing conditions and improve a company's reputation. For investors, we emphasise the importance of integrating ESG considerations into investment decisions to mitigate risks and identify sustainable investment opportunities. For policymakers, we emphasise the need for robust regulatory frameworks that promote transparency, accountability and sustainable business practices. By investigating the link between ESG disclosure and the cost of debt in Latin America, our study aims to expand knowledge on sustainable finance and corporate responsibility (Liu et al., 2023).

4.1.1 Research problem and novelty

Even with the growing importance of ESG disclosure in financial markets, the specific impact of ESG factors on the cost of debt in Latin America needs to be better understood. In the context of the COVID-19 pandemic, to the best of our knowledge, studies still need to be covered in the literature. In addition, we found that existing studies have focused on developed

markets, leaving a significant gap in understanding how this dynamic occurs in emerging economies with different institutional contexts. This gap is particularly relevant due to the diversity of Latin American countries' economic, regulatory and socio-political contexts, which may influence the relationship between ESG disclosure and debt costs differently from that of developed markets.

We therefore emphasise that Latin America provides a unique setting for this study. It offers a different economic environment from the regions where most empirical work is concentrated, with varying levels of regulatory development and diverse socio-political scenarios (La Porta et al., 1999; Aguinis et al., 2020; Husted et al., 2019; Sanvicente et al., 2020). Despite regional variations, there is a growing awareness and adoption of ESG practices in Latin American countries. The pandemic has accelerated this trend, exposed the vulnerabilities of traditional business models and highlighted the importance of sustainable practices.

This study investigates how ESG disclosure affects the cost of debt of companies operating in Latin America, specifically during the COVID-19 pandemic. It seeks to address several gaps in the current literature: Firstly, we identified limited research on ESG and cost of debt in emerging markets, particularly in Latin America; secondly, a lack of studies examining the impact of a global crisis (COVID-19) on the ESG-cost of debt relationship of Latin American countries. Finally, we highlight the need to understand better how ESG factors may have changed in importance before, during, and after the pandemic.

The format of this document is as follows. Our study's theoretical underpinning and hypotheses are presented in the "Literature Review" section. Our data sources, variable definitions and econometric specifications are shown in the "Research Design" section. Our empirical results are described in the "Empirical Results and Analysis" section. Finally, a summary of our main results is presented in the "Conclusions" section.

4.2 Literature Review

4.2.1 Theoretical Framework

To analyse the relationship between ESG and the cost of debt, we articulate three neoclassical corporate finance and management theories: stakeholder, signalling, and agency.

Stakeholder Theory posits that a company's success is determined by its ability to fulfil the needs and expectations of its various stakeholders, including customers, employees, suppliers, creditors and the community (Freeman, 1984). Empirical studies show that disclosing ESG information as a stakeholder engagement component positively influences company performance (Peng & Isa, 2020; Kong, 2023; Li et al., 2024).

In turn, the signalling theory advocated by Spence (1973) explains how companies transmit information to external parties to reduce information asymmetry. In the context of ESG disclosure, transparent ESG reports serve as a signal to investors, creditors and other interested parties. By voluntarily disclosing complete ESG information, companies can differentiate themselves from the competition, attracting favourable financing conditions. Reducing information asymmetry by disclosing ESG information can lead to a lower cost of capital, including the cost of debt. Lenders may consider companies with a strong ESG disclosure less risky, leading to lower interest rates on borrowed funds (Lee et al., 2022; Friske et al., 2023).

Finally, agency theory (Jensen & Meckling, 1976) addresses conflicts of interest between principals (shareholders) and agents (managers), known as agency conflict. We should also point out that in some contexts, such as Latin America, in addition to the type I agency conflict, there is a principal-principal conflict, known as type II agency conflict (majority shareholders - minority shareholders). This theory suggests that managers may not always act in the best interests of shareholders or majority shareholders in the best interests of minority shareholders, especially when there is significant information asymmetry. Thus, ESG disclosure can mitigate agency conflicts by providing shareholders with essential information about the company's sustainability practices and governance structures. This greater transparency can reduce the agency costs associated with monitoring management behaviour and align the interests of managers with those of shareholders (Armstrong et al., 2010). Thus, companies with higher levels of ESG disclosure tend to have lower agency costs and better financial performance (Peng & Isa, 2020).

4.2.2 Empirical Studies, Conceptual Gaps and Hypothesis Developing

Recent studies investigating the relationship between cost of debt and ESG disclosure reveal a negative relationship between environmental, social and governance (ESG) or corporate social responsibility (CSR) performance and cost of debt (COD) (Hamrouni et al., 2019; Houqe et al., 2020; Li et al., 2023; Alves & Meneses, 2024; Maaloul et al., 2021). The

study by Houqe et al. (2024) shows that better ESG disclosure is associated with a lower cost of debt for companies in forty-one countries from 2008 to 2015. For their part, Li et al. (2023) found that ESG scores have a non-linear U-shaped relationship with long-term debt and an inverse U-shaped relationship with the cost of debt for Chinese listed companies from 2011 to 2020. The work by Alves and Meneses finds that ESG disclosure and disclosure improve corporate reputation, reducing the cost of debt financing in the S&P 500 Index, the S&P Europe 350 Index and the Bovespa Index from 2013 to 2022. Maaloul et al. (2021) argue that the relationship between ESG and COD is mediated by corporate reputation since companies with better ESG disclosure and disclosure tend to have a better reputation, which leads to lower debt financing costs (Maaloul et al., 2021).

Wu (2023) shows that the impact of ESG disclosure on debt costs is more pronounced for non-state-owned enterprises, companies with high-quality internal control and those subject to high external supervision. In addition, Eliwa et al. (2021) show that ESG disclosure in Chinese family firms significantly reduces debt financing costs and mitigates agency conflict, information asymmetry and repetition risk in EU firms. However, the quality of ESG disclosure, regulatory policies and industry characteristics also play a crucial role in defining this relationship, with voluntary ESG disclosure being particularly valued (Khamisu et al., 2023).

Therefore, current literature and empirical studies suggest that better ESG disclosure and transparency can lead credit institutions to charge a lower cost of debt (Eliwa et al., 2021). According to agency theory, ESG disclosure can reduce this cost of capital by reducing information asymmetry. Signalling theory shows that ESG disclosure can result in better credit ratings. In terms of the stakeholder theory, in addition to better relations with shareholders and investors, better ESG scores can result in better relations with creditors, leading to lower perceived risk and, consequently, lower credit ratings (Eliwa et al., 2021; Malik & Kashiramka, 2024). Thus, our first hypothesis is:

Hypothesis 1 (H1): There is a negative relationship between overall ESG disclosure and the cost of debt for companies in Latin America.

The COVID-19 pandemic has increased the focus on companies' resilience and sustainability. It has been observed that companies with robust ESG practices have weathered the crisis better than their peers, which may reinforce the perception of lower risk among lenders (Broadstock et al., 2021). The increased scrutiny of social and governance aspects during the

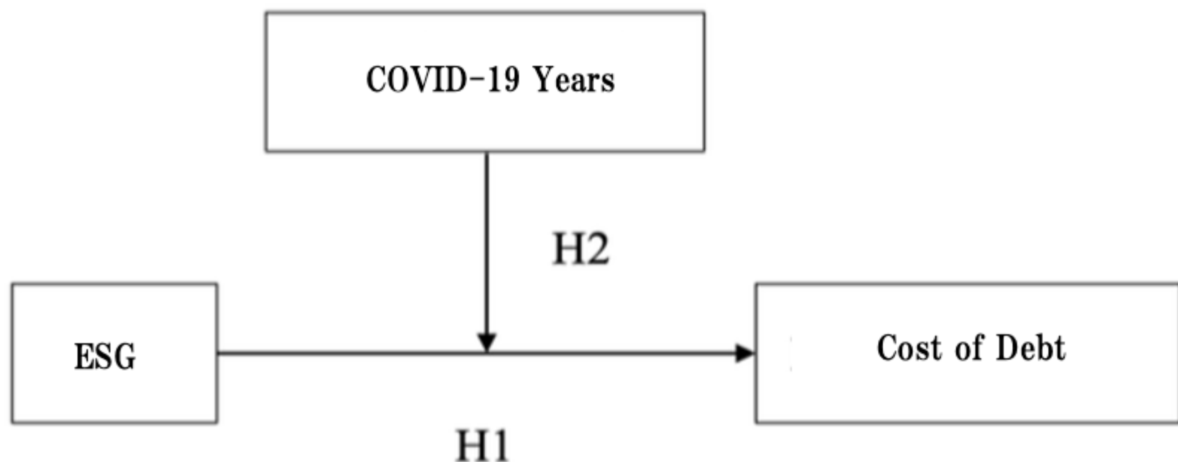
pandemic further reinforces the importance of ESG factors in financial decision-making (Albuquerque et al., 2020).

Malik and Kashiramka (2024) found a positive relationship between ESG and CoD for Indian companies, but they found a positive relationship during the COVID-19 pandemic. This indicates that, despite companies' ESG disclosure, creditors may consider them riskier entities during the pandemic, increasing ESG. The pandemic increased borrowing costs. Therefore, our second hypothesis is:

Hypothesis 2 (H2): The negative relationship between ESG disclosure and the cost of debt has become stronger during the COVID-19 pandemic and the subsequent recovery period.

Figure 01 shows the research model.

Figure 4 - Research Model



4.3 Research design

Considering the various economic, regulatory, and socio-political settings across the several nations in the area, the study attempts to investigate the effect of ESG disclosure on the cost of loans for businesses in Latin America. The model includes several control variables to account for the effects of the COVID-19 pandemic, macroeconomic variables, and firm-specific characteristics.

4.3.1 Sample, Time Frame & Data Source

The sample comprises all the companies listed on the Stock Exchange of Argentina, Brazil, Chile, Colombia, and Mexico, which are the primary capital markets in Latin America in terms of market volume. Furthermore, in line with Vasconcelos (2022), we chose these countries because they belong to the Morgan Stanley Capital International (MSCI) Emerging Markets Latin America Index, involving approximately 85% of the market capitalisation. We used purposive sampling to employ the following criteria: 1. All firms listed on the Stock Exchange of Argentina, Brazil, Chile, Colombia, and Ecuador from 2018 to 2023. The chosen period encompasses 2020 and 2021, considering two years prior and two years following the period impacted by the COVID-19 epidemic. Furthermore, there is a notable disparity in the number of companies that disclosed their ESG scores before 2017 compared to 2018 (Refinitiv, 2023). This study assumes that the company reported its ESG score before, during, and after the Covid-19 pandemic.

Additionally, it includes all companies that published annual reports between 2018 and 2023, all companies with ESG scores for the 2018-2023 time, and all companies whose data is accessible in the Refinitiv ESG Scores system. The financial and market findings have been adjusted for the analysis to reflect their values in US dollars. We integrated data from the Capital IQ and Refinitiv Workspace databases to gather financial data and ESG indicators from Thomson Reuters Refinitiv Eikon. Our study was conducted using Stata®18 software.

4.3.2 Variables and Measurement

The ESG score evaluates a company's performance on environmental, social, and governance criteria from Refinitiv Database. The study also considers the mediator variable COVID-19, control variables, and dummies for different sectors and years. The cost of debt (CoD) is measured using accounting measures and credit ratings based on Fitch agency evaluation. Previous studies have established a relationship between ESG practices and credit ratings, with lower credit ratings associated with environmental incidents and better corporate social responsibility performance associated with better credit ratings. In addition, we incorporated the mediator variable "covid" and controlled for variations between firms and nations using control variables. We also included dummy factors to account for different sectors and years in the study. See Table 1 for definitions and measurements of the variables included in this study.

Table 5 - Variables used in the research

Dependent Variable *		**Measurement Mode**		
Cost of Debt		The ratio of interest expenses of a firm to its average debt.	Rong et al, 2024, Shi et al., 2024, Eliwa et al., 2021, Malik & Kashiramka, 2024	
Independent Variables		**Measurement Mode**	**SE**	**References**
ESG Score	ESG Score	ESG disclosure scores	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Env Score	The environmental dimension of the ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Soc Score	The social dimension of ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
	Gov Score	The governance dimension of ESG score	+	Eliwa et al. (2021); Houqe et al. (2020); Hamrouni et al. (2019, 2020), Malik & Kashiramka, 2024
COVID	COVID-19	This time dummy variable takes on the value 1 for the years 2020 or 2021, 0 if not	-	Sandberg et al. (2023). Lu and Khan (2023). Tanjung (2023), Malik & Kashiramka, 2024
Moderating Variable		**Measurement Mode**	**SE**	**References**
ESG*COVID		Interaction between ESG and COVID variables		Sandberg et al. (2023). Lu and Khan (2023). Tanjung (2023)
Control Variable		**Measurement Mode**	**SE**	**References**
Firm Control	Size	Natural logarithm of total assets	+	Veeravel (2024) Lee et al (2024)
	Leverage	The ratio of total liabilities to total assets	-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)
	Ownership	Percentage of stock ownership of the three largest shareholders	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023), Malik & Kashiramka, 2024
	Sales Growth	Annual changes in sales	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)
Country Control	GDP	Log of Gross Domestic Product	+/-	Lu & Kahn, 2023, Al Amosh & Khatib (2023)

Source: Research data.
Note: (i) * Dependent variable of the general research model; ** Expected Value: "+" in the case of a positive relationship; "-" in the case of a negative relationship; *** Related hypothesis according to section 2.2, whereas control variables do not have specific hypotheses. (ii) CV: control variable.

3.3 Empirical Design & Model Setting

To evaluate the hypotheses, we plan to employ time series analysis with linear regression models to estimate panel data using fixed and random effects methods. Furthermore, we will conduct rigorous testing to verify the reliability and resilience of the models. The aim is to assess the outcomes by employing the dynamic generalised method of moments (GMM) to address the potential issues of endogeneity (reverse causality and simultaneity), which are commonly encountered in research examining the sensitivity and performance of the GC (Barros et al., 2010). In addition, the study utilises accounting indicators to assess performance and value proxies, such as Tobin's Q, together with control factors. To test the H1, we specify the effect model as follows:

$$CoD = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + \varepsilon_i$$

To test the study's second hypothesis (H2), an empirical interaction model was developed to capture the direct and indirect effects of ESG disclosure on the cost of debt, with COVID-19 acting as a mediating variable.

$$CoD = \alpha + \beta_1 ESGScore_{it} + \beta_2 covid_{it} + \beta_2 ESGScore * covid_{it} + \sum_{j=1}^{k} \delta_j FirmsControls_{ji} \sum_{j=1}^{k} \delta_j CountryControls_{ji} + \varepsilon_i$$

Where:

CoD : Cost of debt for firm i at time t

$ESGScore_{it}$: Overall ESG disclosure score for firm i at time t

$covid_{it}$: Dummy variable indicating the period during and after the COVID-19 pandemic for firm i at time t

$ESGScore * covid_{it}$: Interaction term capturing the combined effect of ESG disclosure and the COVID-19 pandemic on the cost of debt

$\delta_j FirmsControls_{ji}$: Vector of control variables, including firm size, leverage, profitability, industry type, and macroeconomic indicators

$\delta_j CountryControls_{ji}$: Vector of control variables including GDP and governance country.

$\beta_{1,}\beta_{2,}\beta_3$: Coefficients to be estimated

ε_i : Error term

4 Empirical Results and Analysis

4.1 Baseline Regression Results

This section presents and discusses our findings. We used the LM and Hausman tests to determine the most appropriate estimator between the fixed-effects and random-effects OLS models. We then tested dynamic GMM panel models for robustness and endogeneity control (Malik & Kashiramka, 2024).

We applied the F-test to check the individual effects. The null hypothesis for the F test is that all individuals have equality in the intercepts and slopes. The F Test indicated that spatial and temporal heterogeneity is at a significance level of 1%, thus ruling out the POLS option. Next, using the Hausmann test, we checked the correlation between the unobserved heterogeneity and the set of explanatory variables. The test indicated a correlation between the errors and the independent variables, and the FE estimator was chosen. Tests were then applied to verify the presence of serial correlation in the FE estimation. The Shapiro-Wilk test indicated that the regression residuals were not expected. Finally, the Breusch-Godfrey/Wooldridge test was applied to check for serial correlation problems in the data. The null hypothesis is that this characteristic is not found in the series. In this sense, the test indicated a correlation problem in the estimation by FE. However, temporal issues tend to be more of a concern when T > N. Therefore, we proceeded to use standard errors robust to serial correlation in the estimation by FE.

Figure 6 - Regression Results

	Direct Effect Models				Interaction Effect Models			
Variable	(1) CoD	(2) CoD	(3) CoD	(4) CoD	(5) CoD	(6) CoD	(7) CoD	(8) CoD

ESG	- 10.9811*** 3.860196				-13.22*** 4.02827			
GOV		-7.8533** 5.061419				-9.1957** 5.175391		
SOC			-6.1372*** 2.175274				-6.2365*** 2.296027	
ENV				-4.0340** 2.359829				-5.143** 2.453324
ESG*COVID				-4.0340** 2.359829	1.729476 2.753175			
GOV*COVID				-4.0340** 2.359829	-4.034** 2.359829	1.586845 2.292936		
SOC*COVID				-4.0340** 2.359829	-4.0340** 2.359829		1.032857 2.292977	
ENV*COVID				-4.0340** 2.35982	-4.0342** 2.359829			-0.617838 2.179629
COVID	2.22087 9.568469	2.410511 9.603886	1.780808 9.56751	1.986053 9.592468				
SIZE	8.3326*** 3.885573	5.42041** 3.700397	6.57015*** 3.712292	6.1798*** 3.786489	9.592*** 3.838136	7.09463** 3.6608	6.17981* 3.786489	7.52011** 3.761136
LEV	-0.978809* .2755487	-1.0233** .276231	-1.02270** .2753834	-0.988*** .276314	-1.0501** .274025	-1.114** .2745849	-1.1043 ** .2738998	-1.0583* .2747408
GROWTH	-0.442245* .212768	-0.5162** .2115825	-0.43742* .2130436	-2.39441* .9257696	-0.48127* .214133	-0.5527** .2138036	-0.465819* .2156838	-0.5107** .2146715
OWN	1.304767* .2772107	1.43675** .272588	1.41203** .274493	1.412037* .274493	1.0812* .2516054	1.2098** .2484917	1.241879* .2443236	1.16376* .2511752
GDP	4.284955 6.774476	4.928736 7.108458	1.433069 .2688677	2.876177 6.77309	4.277402 6.835015	5.511408 7.168019	2.026827 6.792337	2.227631 6.820702
Intercept	-72.042*** 191.8449	-71.41*** 195.3179	-6.7115*** 188.3516	-45.70*** 191.1911	-99.9*** 190.7665	-98.937*** 195.6315	-25.675*** 189.1635	-47.66*** 190.7924
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SECTOR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.17	0.18	0.16	0.14	0.18	0.19	0.14	0.14
N	1.019	1.019	1.019	1.019	1.019	1.019	1.019	1.019

Source: Research data.
Note: (i) ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

The results indicate significant relationships between ESG disclosure, the COVID-19 pandemic and Latin American companies' debt costs. The main conclusions are as follows. Firstly, the analysis confirms a significant negative relationship between overall ESG disclosure and the cost of debt. Companies with higher ESG scores have lower borrowing costs, suggesting that investors and creditors see sound ESG practices as a sign of lower risk and greater long-term viability. Therefore, we find no reason to reject our first hypothesis, considering models 1-4.

However, the interaction term between ESG disclosure and the COVID-19 pandemic did not show statistical significance for any of the models we ran (models 5-8), indicating that the relationship between ESG disclosure and the cost of debt does not influence the cost of debt during the pandemic. Our results suggest that even with ESG disclosure, creditors may consider companies riskier during the pandemic, increasing borrowing costs. In this sense, Malik & Kashiramka (2024) point out that creditors may consider sustainability practices as an

additional financial burden and that the market volatility triggered by the pandemic has led to an increase in the cost of debt for companies, overshadowing the possible benefits of ESG practices (Malik & Kashiramka, 2024).

4.5 Conclusions

We present empirical evidence on the significant relationships between ESG disclosure, the COVID-19 pandemic and the cost of debt for Latin American companies. Our results indicate that better ESG disclosure is associated with lower borrowing costs, and this relationship is strengthened during the COVID-19 pandemic. Among the ESG components, governance factors have the most significant impact on reducing the cost of debt. In addition, the effect of ESG disclosure on debt costs varies between different countries in the region, reflecting the diverse regulatory environments and market conditions.

Therefore, our study extends the existing literature on sustainable finance by focusing on the impact of ESG disclosure on the cost of debt in the Latin American context, which the current literature still needs to consider in terms of this empirical analysis. We, therefore, provide evidence that ESG considerations are fundamental to reducing financial risks and costs but were not sufficient to mitigate such costs in the context of a systemic crisis in the context we analysed.

As well as contributing to the literature, the research findings offer practical implications. Firstly, for corporate managers, the results highlight the importance of improving ESG practices, especially governance, to ensure favourable lending conditions and increase financial stability. Secondly, for investors, the study provides a basis for incorporating ESG factors into investment decisions, especially when assessing companies' resilience and risk profile during crises such as the COVID-19 pandemic. Finally, for policymakers, the research suggests the need for robust regulatory frameworks that promote ESG transparency and accountability, fostering sustainable business practices and financial resilience in the region.

As with any empirical study, we also have some limitations. The study is based on available ESG data, which may vary in quality and coverage in different countries and companies. In addition, the COVID-19 period considered in this study may not fully capture the long-term effects of the pandemic on ESG disclosure and the cost of debt, and the results do not lead to inferences for other systemic crises. We therefore suggest that future studies use

different databases and analyse other crises. It is also interesting to carry out qualitative studies to understand the levels of detail that quantitative studies cannot reach.

Appendix

Table 10 - Matrix of correlations between variables

Vars	CoD	ESG	COVID	SIZE	LEV	GROWTH	OWN	CoD
CoD	1							
ESG	0.1634	1						
COVID	0.0434	0	1					
SIZE	-0.089	0.3639	0.0036	1				
LEV	-0.092	0.1262	0.018	0.216	1			
GROWTH	0.1924	0.1195	0.0025	-0.0532	-0.2616	1		
OWN	0.0555	-0.2742	0	-0.1385	-0.0965	-0.0505	1	
GDP	0.1961	0.1117	-0.129	-0.0587	0.1136	0.098	0.1145	1

Table 11 - Summarize Results

Variable	**Obs**	**Mean**	**Std.**	**Min**	**Max**
CoD	1,020	1.080852	0.8216092	0.0756701	9.121636
ESG	1,020	3.228706	1.318986	0.62	7.03
COVID	1,020	0.3333333	0.4716358	0	1
SIZE	1,020	9.652374	1.289939	6.199697	13.80285
LEV	1,020	55.42857	17.63242	5.66	99.5
GROWTH	1,020	38.24442	22.2745	0	100
OWN	1,020	9.2448	18.80906	0	86.68
GDP	1,020	27.74597	0.6930894	26.26077	28.40744

Table 12 - Test Regression Validation

Applied test	**Estimate**	**p-value**
Teste F	F = 1.657	0.106
Hausmann	$\chi 2$ = 8.829	0.032
Lagrange	$\chi 2$ = 5.778	0.056
Pesaran (EF)	z = -2.475	0.013
Shapiro-Wilk (EF)	W = 0.96	0.061
Wooldridge (EF)	$\chi 2$ = 9.406	0.002

Table 13 - Tests of the interactive models

Interactive model	Applied test	Estimate	p-value
ESG X Covid	F-test	F = 1.75	0.083
	Hausmann	$\chi2$ = 8.048	0.045
	Lagrange	$\chi2$ = 6.179	0.045
GOV X Covid	F-test	F = 1.87	0.061
	Hausmann	$\chi2$ = 12.652	0.005
	Lagrange	$\chi2$ = 7.867	0.019
SOC X Covid	F-test	F = 1.399	0.201
	Hausmann	$\chi2$ = 4.867	0.182
	Lagrange	$\chi2$ = 7.395	0.025
ENV X Covid	F-test	F = 1.399	0.201
	Hausmann	$\chi2$ = 4.867	0.182
	Lagrange	$\chi2$ = 7.395	0.025

CHAPTER 5 – CONCLUSIONS

"The journey of a thousand miles begins with a single step." Lao Tzu

5.1 Summary & Conclusion

Despite the extensive and growing literature on ESG, this thesis fills in gaps about the crisis context in Latin America and some moderating roles that still need to be investigated. In other words, I offer insights that expand the literature on ESG and its influence on company performance, executive compensation, and the cost of debt in times of crisis.

My results demonstrate that ESG metrics are essential for aligning executive pay with company performance and play a crucial role in increasing profitability and reducing the cost of debt. Furthermore, the pandemic, which has represented an unprecedented challenge for individuals, society and companies, has further emphasised the importance of adopting robust ESG practices since companies with solid sustainability frameworks have greater resilience to face such challenges in periods of crisis.

The first essay highlights the moderating role of ESG in the relationship between company performance and executive remuneration, revealing that companies with better ESG disclosure tend to maintain more equitable and sustainable remuneration practices. The second essay provides evidence of the positive impact of ESG practices on company profitability and value, indicating that stakeholder-orientated strategies contribute to long-term financial stability. Finally, the third essay highlights the role of ESG in reducing the cost of debt through sound governance practices. However, the uncertainty introduced by the pandemic has moderated the effect. The essays expand the empirical evidence for the theories that support the alignment between ESG and performance, which I discuss throughout the text: Agency Theory, Stakeholder Theory, Resource-Based Theory, Institutional Theory, and Signalling Theory.

I also want to emphasise that the implications of my research go beyond the academic sphere. For corporate managers, investors and policymakers, the results highlight the need to integrate ESG considerations into financial decision-making, especially in emerging markets. I emphasise that the pandemic has shown that ESG is not just a corporate social responsibility tool but a strategic asset that can strengthen companies against future crises. Furthermore, as companies and societies increasingly prioritise sustainability, the integration of ESG into

corporate finance will continue to shape the future of business, and it is essential that companies adopt ESG practices and that their stakeholders have reliable access to these metrics.

5.2 Limitations and avenues for future studies

Despite the valuable insights provided by my thesis, I recognise the limitations inherent in any research process. Firstly, my essays focus on short-term effects, as the analysis is centred on the period from 2018 to 2023, which includes the periods before, during and after the COVID-19 pandemic. Therefore, the results may only partially capture the long-term impacts of ESG practices on corporate financial results. The constantly evolving nature of ESG metrics and integration into corporate strategy means that their full effect may become more apparent over extended periods.

Secondly, my thesis uses data from publicly traded companies in Latin America, which may limit the generalisability of the findings to other regions or types of companies, such as private companies or small and medium-sized enterprises. The specific characteristics of Latin American economies, including regulatory environments and market structures, may also mean that the conclusions only partially apply to other emerging or developed markets.

Third, my research assumes that ESG metrics and corporate financial results are homogeneous across sectors. However, the influence of ESG practices varies significantly between industries, especially those with different environmental or social impacts. In other words, the thesis needs to explore these sector-specific differences extensively, which could offer more nuanced insights.

Finally, my research relies on secondary data sources for ESG metrics and financial performance, which may be subject to biases or inconsistencies in company reports. Apart from the attributes stated above, I have some suggestions for future research: Firstly, researchers could explore the impact of other crises on the ESG-FP relationship. Regarding executive remuneration, it would be interesting to consider other remuneration metrics, such as variable or stock options and CEO remuneration. As for the ESG metric, studies using other available databases would be pertinent. Finally, I suggest examining new variables that could mediate or moderate the ESG-FP relationship and checking whether there are differences in company performance between companies with a high ESG score and companies with a low ESG score.

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