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# Stakeholders' Influence of Voluntary Sustainability Reporting on Corporate Financial Performance

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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Walden University
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## Abstract

This study explores the relationship between voluntary sustainability reporting and corporate financial performance, focusing on the influence of stakeholders on sustainability initiatives. The research uses legitimacy and stakeholder theories, drawing from signaling and institutional theories, to examine the impact of sustainability initiatives on financial results. The analysis was conducted on United States aerospace and defense companies listed in the Fortune 500, and Bloomberg's ESG database. The independent variables included GRI-2019 – GRI-2022, stakeholders influence "STAKE," firm size, and growth. The dependent variables were return on assets and Tobin's Q. Return on investment was used as the moderating and mediating variable. A correlational and multiple regression design was used to characterize the relationship between the independent and dependent variables and predict their direction. The results showed an insignificant relationship between voluntary sustainability reporting and corporate financial performance while controlling for firm size, and growth measured in total assets. This study adds to the body of knowledge in the research on the relationship between sustainability and financial performance. It assists business leaders in making strategic decisions regarding sustainability programs. This research might further the knowledge of stakeholders and related theories by focusing on new research directed toward the association between voluntary sustainability reporting and corporate financial performance and stakeholder involvement that might influence corporate financial performance. Future research should consider incorporating additional variables to increase the usefulness of the mode.

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Table of Contents

List of Tables

List of Figures

# Chapter 1: Introduction to the Study

Scholars continue to argue about the relationship between corporate financial performance (CFP) and voluntary sustainability reporting (VSR) and whether VSR activities benefit corporations. Sustainability has grown in importance in research as company executives see it as critical for competitive advantage, growth, and long-term success (Yang, 2021). To satisfy stakeholders and support investment in sustainability initiatives, more research into the relationship between sustainability and CFP is necessary (Tanggamani, 2022). Nonetheless, the literature debate about whether sustainability performance is related to financial performance has been discussed by many researchers (Ben Saad & Belkacem, 2022; Chiek, 2021; Danisch, 2021; Kooskora et al., 2019; Kowsana, 2021).

The story of sustainability reporting is not new. Over the years, new external forms of reporting have emerged in response to the shortcomings of conventional financial reporting. These new external reporting methods include integrated reporting, VSR, and CFP (Socoliuc et al., 2020). Changes in stakeholder attitudes, consumer activism, and government legislation have increased the attention and investment given to sustainability programs because of social pressures, legislative demands, and changing cultural norms (Christensen et al., 2021; Larrinaga & Bebbington, 2021; Sisaye, 2021).

This led to the Global Reporting Initiative (GRI) standards introduced in 1999. GRI is a significant institutional actor in advancing VSR. This network-based organization established a framework for VSR in conjunction with stakeholders from business, government, labor, and professional groups the global standard and an

extensively used sustainability reporting method (Christensen et al., 2021; Larrinaga & Bebbington, 2021; Sisaye, 2021). The GRI provides the most often used rules for sustainability reporting for businesses and organizations so that companies can assume accountability for the outcomes of their sustainability initiatives (GRI & Sustainability Accounting Standards Board [SASB], 2021). Similarly, the SASB helps firms and investors comprehend the impact of sustainability on their financial performance. Businesses worldwide can use industry specific SASB standards to find, arrange, and deliver financially crucial sustainability information to clients (GRI & SASB, 2021).

According to Larrinaga and Bebbington (2021), to institutionalize and legitimize reporting, businesses need to explain how their operations influence the environment and society. VSR was tested as a value-added reporting, a "nonfinancial statement," in the 1970s and 1980s to account for the impacts of "traditional accounting" and communicate environmental, social, and governance (ESG) performance to stakeholders (Unerman et al., 2018). ESG disclosures are increasingly spotlighted due to the discussion over corporations' social responsibility initiatives. According to Carroll (1979b), businesses should address economic, legal, ethical, and philanthropic/discretionary social responsibility. For this reason, Carroll (2021d) contended that corporations are part of society and must meet economic and ethical obligations. However, Friedman (1970) stated that a business's social responsibility is to maximize shareholder profit. If the free market cannot tackle social issues, the government must (Masum et al., 2020). Thus, shareholder welfare is their top priority.

President Biden and Vice President Harris have recently introduced the most comprehensive sustainability justice strategy (The White House, 2023). This effort integrates environmental justice ideas into government operations to produce tangible and quantifiable advancements that communities can depend on. The executive branch agencies should pursue sustainability and integrate it into their objectives, as stated in President Biden's directive (The White House, 2023).

Almost 93% of all the top 250 global enterprises sustainability reports show ESG activities, policies, and sustainable investing are growing (see Christensen et al., 2021; Larrinaga & Bebbington, 2021; Unerman et al., 2018). In the mid-2000s, GRI and CSR standards formed a framework reporting guideline for ESG analysis to support sustainable investing (Byrne, 2022). Corporate social responsibility (CSR) guidelines were one of the first external reporting methods to emerge in the 1970s in the United States as a self-regulatory business model for stakeholders to assess a company's activities and establish legitimacy with society as a strategy to maintain good relations with various stakeholders (Association of Corporate Citizen Professionals [ACCP], 2024; Christensen et al., 2021). The concept of firms engaging in socially responsible practices is not a recent development. CSR emerged in the 1950s, coinciding with the height of social movements advocating for racial equality, workers' rights, and environmental preservation (Spanne, 2021).

To address how to monitor ESG, Bloomberg created and propagated the ESG score, a quantitative metric that accounts for roughly 120 ESG sustainability factors based on GRI standards that are quantifiable, a nonfinancial score from 0 to 100, to

measure a company's ESG reporting practices and is produced yearly using quantitative and policy-related data from a company's annual reports and businesses social materials, S&P 500 industry index database, the GRI, and Sustainalytics are significant global providers of real-time and historical data (Shaikh, 2022; Sisaye, 2021). Corporate risk and other nonfinancial disclosures can be assessed using the ESG score, which details each firm, including how each value is determined (Kamela & Alam, 2021). Thus, VSR is an umbrella for CSR, ESG, and GRI and is frequently referred to in research studies as CSR. VSR deals with information concerning the GRI, standards, corporate performance, ESG issues, and a step forward in corporate communication to increase corporate engagement and transparency (Christensen et al., 2021).

Although, for some organizations, managing and reporting on sustainability has become essential to company strategy and growth, for others, it proposes a challenge (see Christensen et al., 2021; Deren Van Het Hof et al., 2021; Kwarto et al., 2022). Due to the potential link between sustainability activities and profits, businesses are increasingly concerned about these reporting requirements, as are various stakeholders, including shareholders, customers, and the communities in which they operate (Christensen et al., 2021).

By implementing VSR, an organization can enhance its signal and performance, mitigate, or eradicate risk, bolster its image and reputation, distinguish itself from rivals in the global market, generate financial gains, augment firm value, and allocate resources towards sustainable domestic production and processing of critical minerals (Qian et al., 2020). Thus, the success of a sustainable economy is a crucial factor for contemporary

companies as it influences the reception of their sustainability reports by stakeholders and society. VSR reports provide comprehensive information on the environmental measures implemented by firms, serving as a strategic decision to reciprocate to society. By doing so, companies seek to enhance consumer confidence and bolster their corporate reputations (Deren Van Het Hof et al., 2021; Kwarto et al., 2022).

Social responsibility programs and transparent risk management give stakeholders broader access to information outside the financial sphere, which could influence a company's financial performance. If the company is profitable, there might be a more significant correlation between VSRs and firm value (Machmuddah et al., 2020). Chowdhury et al. (2021) argued that management effectiveness depends on the balance of participants' interests, actors who can actively influence the enterprise's production and policy by allocating its resources in their favor. Consequently, the Biden-Harris administration, according to the White House (2022), will host regional summits to bring stakeholders and different federal departments and agencies, like the Department of Commerce and the Department of Labor (DOL), together to discuss how to match supply chain strategies and national businesses with regional economic development goals.

Friedman (1970) stated that a crucial part of CSR is using a company's resources to maximize shareholder profits. Masum et al. (2020) stated that Friedman believed that when the free market cannot solve societal problems, the government, not the private sector, should take responsibility for addressing them. Firms prioritize the welfare of their stakeholders, aiming to maximize shareholder wealth and profit growth, as stated by Friedman in 1970. Firms may be pressured by external sources, such as shareholders, to

disclose information. Thus, it can significantly influence sustainability reporting practices, particularly in the aerospace and defense sectors (Christensen et al., 2021). Bernhagen et al. (2022) stated this is because the aerospace and defense sectors are significant in generating revenue and conducting research and development operations. In actuality, between 2018 and 2021, global sales of military aircraft and aerospace production exceeded the estimated sum of $255.8 billion U.S. dollars. Boeing, Lockheed Martin, and Northrop Grumman are major participants in this market (Salas, 2022; Statista Research Department, 2023). This sector has substantially expanded over the last 20 years, surpassing $2.1 trillion U.S. dollars in 2021 (Salas, 2022; Statista Research Department, 2023). The United States defense business efficiently meets domestic and global demands for arms and military technologies. Lockheed Martin is recognized as the largest defense contractor worldwide and a significant player in aerospace, security, and military support, according to the Statista Research Department (2023).

Companies participating in VSR in the defense sector are examined in their day-to-day actions due to the substantial impact of their business on the ESG global economy, necessitating the reporting of their sustainability activity (Bernhagen et al., 2022). Therefore, VSR is more commonly seen as a suitable response to the expectations of the stakeholders when certain nonfinancial types of information about the mission, vision, business model, performances, perspectives, and projects that have an eye toward business ethics, the environment itself, and society (Wachira et al., 2020).

Accordingly, before introducing statutory obligations for nonfinancial disclosure, the GRI guidelines were crucial in establishing VSR (Carungu et al., 2022). Moreover,

because VSR addresses the social facets of a company's development, it is an early indicator of the global reporting initiative's (GRI-G4's) efficacy—the concept of materiality at the core of social responsibility (Kamela & Alam, 2021). Because governments are the primary clients and strictly control exports, the aerospace and defense businesses are vulnerable to political decision-making (Bernhagen et al., 2022). According to Freeman (1984), a stakeholder is any group or individual who can influence or influence the achievement of an organization's objectives. Therefore, multiple stakeholder groups cannot evaluate corporate actions relatively because various stakeholders subjectively determine organizational legitimacy (Freeman, 1984). The stakeholder salience theory, which clarifies how managers prioritize stakeholder interactions, states three qualities can identify and rank stakeholders: the potential to influence the firm, the validity of the stakeholder relationship with the firm, and the importance of the stakeholder's claim on the firm (Wachira et al., 2020).

Gordon and Bell (2022) stated that 78% of shareholders feel corporations should invest in ESG issues relevant to their business, even if it means preceding short-term profitability. Meanwhile, 53% of significant firms discovered that they suffer short-term earnings pressure from investors, which impedes their longer-term sustainability initiatives, implying that investor influences on reporting impede profitability. In contrast, 20% of finance leaders said investors are primarily concerned with quarterly profitability and are uninterested in long-term investments such as sustainability, indicating an apparent mismatch (Gordon & Bell, 2022). Nonetheless, corporate reporting is critical to building trust among shareholders and stakeholders. ESG

disclosures are used by investors as a factor in their investment decisions, with 99% of investors surveyed out of 74% utilizing a tight and organized methodology. The perception among investors is that corporations have mostly been unsuccessful in advancing their reporting practices, including financial and ESG disclosures. These disclosures are vital for informed decision-making (Gordon & Bell, 2022). Moreover, according to Gordon and Bell (2022) out of 75% of the investors polled, 76% noted they were highly selective in what information they offer to investors, raising worries about greenwashing.

The aerospace and defense sector is a critical global economy business that has not been well examined regarding stakeholders' influence on the relationship between VSR and its effect on CFP. That includes large, medium, and smaller aerospace and defense companies in developed and developing markets (García Martín et al., 2022).

The stakeholder theory is an example of the foundation for identifying key stakeholders and the aerospace and defense sector's attempts to influence their views, typically through disclosures of sustainability information (Singh & Misra, 2021). While the stakeholder theory focuses on the various interest groups that influence a firm, the legitimacy theory generally refers to society and its expectations for ethical corporate practices (Adomako & Tran, 2023; Machmuddah et al., 2020). When stakeholders are involved, they can influence a company's choices and decisions. For example, in recent years, external factors such as the COVID-19 pandemic have hurt sustainability efforts, shifting investors and companies' regulatory and political environments (Carroll, 2021).

Therefore, this study aimed to fill a knowledge gap in understanding the aerospace and defense industry stakeholder influences relative to the relationship between voluntary sustainability reporting and its impact on corporate financial performance. The findings of this study may serve as a catalyst for executives and investors in the aerospace and defense industry who may not prioritize the production of sustainability reports. The study suggests that investing in enhanced sustainability transparency and engaging stakeholders might benefit both the firm and the stakeholders in the long term. Additionally, it may dissuade stakeholders who excessively prioritize financial performance. These conclusions align with the research conducted by Rahi et al. (2021), Ramzan et al. (2021), and Ludwig and Sassen (2022). The study's findings may also assist firms in better balancing the risk associated with sustainability reporting, which might benefit stakeholder groups and the aerospace sector. Moreover, greater organizational transparency may positively impact managing environmental and social risk.

## Background of the Study

Discussing VSR without first discussing CSR would be unjust. It is not new that the first instance of CSR was in the 1950s when social movements for racial equality, worker rights, and protection of the environment were at their height; gradually, the environment came into focus (Spanne, 2021). Following the 1970s into the 1980s with the testing of sustainability reporting, value-added reporting, "a nonfinancial statement," attempt to account for externalities of "traditional accounting" to communicate their ESG performance to stakeholders (Unerman et al., 2018). By 1999, the GRI rules were

introduced, a significant institutional actor in advancing sustainability reporting, a network-based organization that established the framework for reporting with stakeholders from business, government, labor, and professional groups. GRI is the global standard and the most extensively used sustainability reporting method today (Christensen et al., 2021; Larrinaga & Bebbington, 2021; Sisaye, 2021).

The title corporate social responsibility has broadened in its meaning, with implications for the environment, society, and the economy. As aforementioned, CSR addresses the social facets of a company's development and is an early indicator of the GRI-G4's efficacy—the concept of materiality at the core of social responsibility (Kamela & Alam, 2021). Businesses, governments, and other stakeholders have shown enthusiasm for the concept, which has spurred an intense debate about its meaning among academics (Sheehy & Farneti, 2021). The specifics of a company's CSR program will decide whether it succeeds or fails in the context of a sustainable economy (Oncioiu et al., 2020).

CSR illustrates how resources align with local, national, and international environmental laws. Most of the research on business management has concentrated on the connection between CSR and VSR components that impact financial performance (Dmytriyev et al., 2021). Other researchers have taken a more specific approach to examine whether certain parameters ESG scores, return on assets (ROA), return on equity (ROE), return on investment (ROI), Tobin's Q, firm size and growth, and firm's financial statements, which is associated with its financial performance (Oncioiu al et., 2020). That is because the GRI and ESG scores, ROA, ROE, profitability, capital structure, preferred,

common stock, firm size, and growth parameters show a relationship between sustainability reporting and CFP according to Oncioiu et al. (2020). For example, Miklosik et al. (2021) questioned the relationship between voluntary sustainability reporting and company size and the level of environmental reporting and how environmental sustainability-related topics are disclosed in annual reports of companies from the Australian Stock Exchange (ASX) industrials list. Miklosik et al. (2021) discovered variations in the volume of environmental disclosures between particular businesses and sectors of the economy.

Thus, sustainability reporting is a new change in thinking that involves communication between businesses and stakeholders, disclosure of nonfinancial risk reports that detail preventative strategies for avoiding mid-to-long-term risks, and transparency on a company's environmental and social-ethical actions (Meutia et al., 2021; Sphera Solutions, 2022). Sustainability reporting details how the business will meet its internal and external stakeholders' needs to succeed sustainably allowing interested parties to assess whether the business has considered their interests while making choices (Frynas & Yamahaki, 2016, as cited in Meutia et al., 2021; Sphera Solutions, 2022). This is causing some businesses and multinational corporations to begin approaching their communication with their stakeholders differently because of the growing awareness of sustainability issues and guidelines and the need to incorporate the principles of sustainable development into their activities (Socoliuc et al., 2020).

There are many similarities between the emergence of CSR, sustainable development, and the concept of sustainability reporting, indicating the possibility of a

correlation between the development of sustainability reporting and the advancement of corporate sustainability. However, due to the requests from various socioeconomic groups and the requirement for corporations to perform as good citizens by paying statutory taxes, CSRs have primarily focused on social responsibility problems (Tsalis et al., 2020). While sustainability reporting primarily focuses on environmental issues to protect natural resources, an early indicator of the effectiveness of the GRI-G4, that covers the social aspects of the company's development (Kamela & Alam, 2021).

The GRI and ESG demonstrate a company's level of transparency. The higher the company's level, the more transparent. The GRI is a nonprofit organization that promotes economic, environmental, and social sustainability, one of the most significant worldwide sustainability reporting projects providing stakeholders with more responsibility to recognize and assess the impact of various reporting businesses (Aljajawy et al., 2022). According to traditional economics, a company's sole duty is to increase value for its owners (Friedman, 1970). Therefore, the information in sustainability reporting varies based on the type of stakeholder and how it would impact specific operations or their performance (Oncioiu et al., 2020). Christensen et al. (2021) stated that many standard-setting and regulatory initiatives agreed that sustainability reporting is essential to accomplishing broader climate and sustainability goals. Once companies acknowledge that investors may have preferences other than maximizing shareholder value and that "giving investors what they want" may include information regarding a firm's environmental or societal repercussions, the two methods will merge, according to Christensen et al. (2021).

Shaikh (2022) argued that stakeholders and fund managers think companies that disclose significant amounts of ESG information perform better operationally, generate higher returns, and have lower firm-specific risk. That is because ESG links data to a company's value (performance) and may influence business decisions (Kamela & Alam, 2021). A potential disparity according to Zrni et al. (2020), could exist between the reporting entity and its stakeholders, thereby impacting the efficacy of corporate communication about sustainability. For instance, Zrni et al. declared that board members' or CEOs' characteristics may influence corporate board diversity and sustainability reporting. Similarly, Rodriguez-Gomez et al. (2020) highlighted that other authors started to wonder about the various aspects that affect an organization's ethical behavior, separating those that influence the decision-makers. Whether or not those with an influence on the organization's purpose is to influence sustainability reporting, the availability of reporting award schemes was a stimulus for the start of reporting. On the other hand, according to Jarvie (2016), it may be possible to create a sustainable global economy without compromising the prosperity of the next generations since sustainability reporting assesses the risks and opportunities facing businesses so they can meet the needs of the present and future generations. The theoretical problems are tangible and specific and aid in managing the effects of sustainability developments on the business's operations and strategy (Aljajawy et al., 2022).

Because ESG links to data on a company's value (performance), it may influence business decisions (Kamela & Alam, 2021). The availability of "reporting" award schemes was the catalyst for the emergence of sustainability reporting, regardless of the

potential division between the reporting organization and its stakeholders on reporting sustainability. Reporters are those in soft law who have the potential to modify and edit sustainability reporting standards in at least two ways: through the GRI process and other initiatives (Larrinaga & Bebbington, 2021).

Larrinaga and Bebbington (2021) found that Organizations affect knowledge communities, carriers, and governments in a multi-stakeholder dialogue setting: they are active makers of reporting norms while influencing their reports. Stakeholders' influence of VSR on CFP has been noted by both practitioners and theorists that companies engage in CSR activities and decide what activities they will engage in to increase their reputation and financial performance (Oncioiu et al., 2020). In other words, sustainability reporting resilience and stability stems from its decoupling not only from broader sustainability considerations or attempts to restructure the organization but also from financial returns (Larrinaga & Bebbington, 2021). ESG was coined by the United Nations Principles of Responsible Investment (UNPRI), based on institutional theory; companies respond due to institutional pressures toward ESG practices (Sharma et al., 2020). For instance, Sharma et al. declared that accountability describes that corporations are accountable to their stakeholders; thus, they report on ESG issues.

With the growing global trend of CSR and VSR, performance disclosures and the impact on society and the environment have been the center of attention, and the effect of social responsibility initiatives on firms is still under debate. Carroll (2021c) asserted that because corporations are a part of society, they should be responsible for engaging in charitable and ethical activities and meeting economic expectations. Singh and Misra

(2021) stated that based on the stakeholder theory, business social responsibility gives firms a competitive edge by enhancing their financial strength, which implies that sustainability reporting has a positive impact on financial performance (Freeman, 1984). Friedman argued that one of the business's social responsibilities is to use its resources to maximize shareholder profit. Friedman claimed that if the free market cannot solve existing societal problems, it is up to the government, not industry, to do so (Masum et al., 2020). The reason for Freeman's assertion is that, according to Zrni et al. (2020), board members' or CEOs' characteristics may influence corporate board diversity and sustainability reporting. Thus, the well-being of their stakeholders should be their primary concern.

All the theories and findings researched have indicated the connection between VSR and CFP in various industries (Yu et al., 2020; Zhang et al., 2021; Zhong et al., 2022; Zieba & Johansson, 2022; Zrnić et al., 2020) but none have widely addressed stakeholder influence on the aerospace and defense industry. This study addresses the relationship between VSR and CFP on stakeholders' influence while controlling for firm size and growth in the aerospace and defense industry. Specifically, the study aimed to bring about a positive social change by enhancing and expanding on sustainability reporting, enabling organizations, governments, and the community to forge new alliances with stakeholders. Determine new directions in sustainability reporting, which might satisfy stakeholders' demands that desire improvements and limit environmental and societal risk, enabling the aerospace sector to yield greater earnings, liquidity, stakeholders' dividends, and profitability (Oncioiu et al., 2020). Sustainability functions

are a comprehensive framework encompassing ESG practices and CSR initiatives. These combined efforts play a significant role in advancing the cause of sustainable development. To understand the differences between ESG, CSR, and sustainability, (see Table 1).

ESG is quantitatively measured using a set of factors (ROA, Tobin's Q, and market values). Companies are advised to consider ESG when investing, (Table 1), column 1 (Lutkevich, 2023). Two distinct approaches firms can choose are ESG and CSR to display their dedication to sustainable business practices. On the other hand, CSR can be seen as the conceptual framework that embodies an idealistic and comprehensive approach towards sustainability. CSR is qualitatively measured and self-regulated by organizations but unrelated to business valuation, corporate culture, values, and brand management, (see Table 1), column 2. In contrast, Lutkevich stated that sustainability is measured both by quantitative and qualitative data, self- and externally regulated by the organization, and related to the business valuation of their activities, implemented through a combination of CSR and ESG standards, (Table 1), column 3.

From a conceptual standpoint, it can be argued that these three approaches can be differentiated. ESG primarily centers around the specific actions undertaken by a company concerned about ESG matters. While CSR primarily emphasizes voluntary initiatives that a company undertakes. Sustainability encompasses ESG engagement and stakeholder stewardship.

**Table 1**

*ESG vs. CSR vs. Sustainability*

| ESG | CSR | Sustainability |
|---|---|---|
| Quantitative | Qualitative | Quantitative and Qualitative |
| Eternally regulated | Self-regulated | Both self and externally regulated |
| Directly related to business valuation | Not directly related to business valuation | Often related to business valuation |
| Implemented through measurable goals and audits | Implemented through corporate culture, values, and brand management | Implemented through a combination of CSR and ESG |

*Note.* Adapted from "ESG vs. CSR vs. Sustainability: What's the difference?" by Lutkevich, B. (2023, April), https://www.techtarget.com/whatis/feature/ESG-vs-CSR-vs-sustainability-Whats-the-difference?Offer=abt_pubpro_AI-Insider.

## Problem Statement

According to Lin et al. (2019), key stakeholders could influence a company's environmental strategy and financial performance and influence the relationship between VSR and CFP. CSR has grown deeply rooted in the business sector due to the urgent impact of globalization, requiring corporations to make substantial environmental contributions to stakeholders and the public (Tanggamani et al., 2022). HSBC (2020) found that 35% of business asset managers claimed that sustainability programs impacted their decisions, while 40% of asset owners said they impacted goals, objectives, and measurements utilized in the investment decision-making process. Hence, the business strategy is developed to enhance competitiveness, organizational effectiveness, and financial success while aligning with present social responsibilities in VSR and CFP. Deloitte (2019) asserted that leaders evaluate societal-impact initiatives based on how they impact a company's performance and sustainability. Therefore, social impact programs are mostly assessed based on their influence on firms' profitability and sustainability, as asserted by Deloitte.

Stakeholders are entities that could impact or be impacted by a company's activities and decision-making procedures. According to Freeman (1984), the stakeholder theory states that firms have responsibilities to various stakeholders beyond just shareholders. In today's rapidly changing markets, Gangi et al. (2022) emphasized the need for enterprises to offer innovative and enduring solutions that align with the needs of stakeholders and shareholders in today's ever-changing markets.

While some studies have explored the connection between VSR and CFP Ben Saad and Belkacem (2022) and Danisch (2021), stated that there is a scarcity of research on how stakeholders influence this relationship in the aerospace and defense industry (Xie et al., 2019). Therefore, an investigation is needed to examine the impact of sustainability reporting on the relationship between VSR and CFP in the aerospace and defense industry, particularly regarding ESG factors that could contribute to creating a sustainable aerospace sector (García Martín et al., 2022). The societal challenge is that investors' ideology is varied in the aerospace and defense business; some tend not to care whether corporations create sustainability reports, and that decision might be unduly focused on financial performance (Ludwig & Sassen, 2022; Rahi et al., 2021; Ramzan et al., 2021).

The aerospace industry could enhance operational efficiency and sustainably manage its growth through this study. However, sustainable development management poses new challenges for the sector as it aims to improve operational efficiency and foster better business relationships among stakeholders and financial performance (Gangi et al., 2022). For example, one of these difficulties is developing lightweight thermal management systems that are appropriate and able to withstand the increased heat loads expected for all-electric or hybrid aircraft compared to conventional architectures (Coutinho et al., 2023). However, Coutinho et al. (2023) asserted that electrifying the propulsion system has environmental and technical problems.

Although researchers have maintained that a firm's size and growth, return on equity, return on assets, ESG, and GRI scores affect CFP in the aerospace and defense

industry, VSR varies across sectors. For instance, VSR might be modified by contextual factors, past financial performance, and the number of resources available for social responsibility initiatives. That might improve companies' reputations while fostering conditions for better financial performance.

In this study, I examined the relationship between voluntary sustainability reporting and corporate financial performance in the aerospace and defense industries and whether stakeholders influence these relationships. The study's findings may have a good societal impact by improving the link between sustainability and economic success and benefiting aerospace and defense industry executives considering investing in sustainability programs.

## Purpose of the Study

The purpose of this quantitative study was to examine the relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence while controlling for firm size and growth in the aerospace and defense industry (Xie et al., 2019).

## Research Question(s) and Hypotheses

RQ: What is the relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry?

$H_1$: There is no relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

$H_2$: There is a relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

## Conceptual Framework

This study incorporates legitimacy and stakeholder theories as theoretical frameworks to investigate the potential influence of stakeholders on the association between VSR and CFP.

Organizations utilize legitimacy theory to effectively execute and promote voluntary social and environmental disclosures to satisfy their social contract. This concept pertains to managing business decisions, trends, and profitability, enabling the acknowledgment of their objectives and sustainability in a dynamic and unpredictable context (Janang et al., 2020). The legitimacy theory is based on the integrity of organizations reporting to avoid social repercussions, a strategy to improve a company's reputation, based on four financial characteristics of its CFP: return on assets (ROA), return on equity (ROE), debt to equity ratio (D/E), and total assets (Meutia et al., 2022). Legitimacy theory is a social ideal connected to business activities congruent with established behavioral norms in broader social systems (Dowling & Pfeffer, 1975, as cited in Tang, 2017).

In comparison, the stakeholder theory holds that organizational leadership has a primary duty to carry out operations that benefit all stakeholders, including consumers, communities, governments, and anyone else who stands to gain from the organization's environmentally and socially responsible actions (Oprean-Stan, 2020). Both legitimacy

theory and stakeholder theory point to a more extensive social system of communication that might influence CFP (Thuy, 2021). Freeman et al. (2010) concurred that stakeholders can exert influence on, or be influenced by, a company's operations.

By examining the relationship between VSR and CFP concerning stakeholder influence (STAKE), I anticipate enhancing the knowledge about stakeholder influences on the aerospace sector. The relationship between these theoretical frameworks and the nature of the present study is supported by the notion that the CFP, comprising of ROA, firm size, and growth, along with Tobin's Q, has the potential to provide an optimal investment structure when implemented effectively. This might contribute to the aerospace industry's desired financial performance results, which include higher earnings, profitability, and improved environmental sustainability reporting, particularly during economic downturns and financial crises. Hamad et al. (2020) concurred with the assertion that the characteristics of investment decisions have an impact on the success of businesses.

## Nature of the Study

This study used a quantitative approach to answer the research question and address the hypothesis. The specific research design included a correlational design to examine the relationship between the independent or predictor variable, VSR, and the dependent or criterion variable, CFP, on stakeholders' influence (STAKE) while controlling for firm size and growth and return on investment (ROI) in the aerospace and defense industry. The ROI is used as the moderating variable to enhance the research designs and provide more realistic and accurate findings (Mugizi, 2019). Namazi and

Namazi (2016) and Mugizi (2019) asserted that the moderating variable is also called interactions because the variable interacts with the relationship between two other variables. STAKE and ROA are used called covariates. To assess the causal impact of a non-randomized intervention on a subsequent outcome, a more comprehensive conditioning methodology involves conducting a regression analysis of the outcome against the covariates, while accounting for pre-treatment measures and any additional baseline variables.

To further the research and address the research question(s) hypothesis, a correlational, hierarchical linear regression, and multiple regression design were used to explain the statistically significant amount of variance of accordingly the change in the interaction term added statistically substantial, or a moderator effect is present to analyze the impact of STAKE and ROA on the relationship between VSR represented by eight independent variables GRI-2019, GRI-2020, GRI-2021, GRI_2022, STAKE, firm size and growth, ROI, and the ESG score (Mugizi, 2019). ROI, the moderating and mediating variable, is used to gauge CFP the dependent variable represented by TOBINQ, and VSR the independent variable represented by GRI in the years 2019-2022.

The dependent variable (DV) Tobin's Q was used to measure the firm's market value measured by the market value evaluation (MVE) (calculated by the number of shares times share price), plus preference share (PS), plus the firm's debt divided by total assets. The firm's total assets measure the firm size, the independent variable (IV), and firm growth (IV) were used to measure the total turnover sales (TS) during the years minus previous years (PTS-1) divided by (TS, year, 1) and used as control variables to

regulate the effect between the DV and IVs which might affect the dependent variables Tobin's Q and GRI, characterizing the nature and extent of the relationship and any predictive direction while controlling for firm size, growth, ROI, ROA and STAKE. I also hypothesized whether companies had losses in previous years.

The nature of the study aligned with the problem statement and the purpose statement, which focused on establishing whether stakeholders influence the relationship between VSR and CFP. According to researchers, several variables can influence the independent and dependent variables; thus, several control variables could be used to minimize potentially omitted variable bias (Hakimah, 2019).

A hierarchical linear model is a complex form of ordinary least squares (OLS) regression used to analyze variance in outcome variables when the predictor variables are at different hierarchical levels (Wang et al., 2020). The hierarchical linear method was appropriate because the problem and purpose statements analyze relationships between VSR and CFP. Secondary data from the GRI, Sustainalytics, S&P 500, and Bloomberg's ESG databases for 150 aerospace and defense companies and the company websites was used to evaluate companies' annual financial statements. The GRI and Bloomberg ESG were used to measure sustainability report scores from 0 to 1 (Reporting Initiative, n.d.). Bloomberg and Sustainalytics provided ESG ratings for analyzing and evaluating sustainability reports and CFP adherence.

To measure VSR (GRI 2019-2022, firm size and growth, ROI, and ROA), these independent variables were used in addition to the independent variable CFP (Tobin's Q). The effect of the dependent and independent factors was controlled using control

variables such as company size, growth, and the mediating and moderating variables "covariates," STAKE and ROA. I used ROI to measure the influences of the independent control variable on GRI and Tobin's Q. Researchers have frequently consulted the Bloomberg ESG database, which is a reliable source of information (Bloomberg, n.d.).

Data collection for all variables was manually collected from companies' annual financial statements, Sustainalytics, S&P 500, Bloomberg's ESG, and GRI databases used to analyze and evaluate VSR and CFP. A power analysis was conducted to ensure the robustness and accuracy of the study's conclusions. Brysbaert (2019) asserted that power analysis is a tool for interpreting model interactions and the relationship between power, effect sizes, and variable correlations in interaction models. The statistical software SPSS 29.0.2.0 was employed to assess the potential relationship between the dependent and independent variables of VSR, GRI-2019-2022, ROI, firm size, ROA, and firm growth.

The data were de-identified and contained the scores by stage of study for 150 aerospace and defense companies from 2019 to 2022 listed on the S&P 500 database. The data points used to answer the research question(s) and address the hypotheses included the VSR, the IV represented by GRI-2019, GRI-2020, GRI-2021, and GRI-2022; control IV firm size, firm growth, STAKE; the moderator and mediator variable ROI, and the IV and DVs, stakeholders influence and CFP, represented by GRI and Tobin's Q. Follow by a power analysis to ensure the robustness and accuracy of conclusions (Brysbaert, 2019).

**Definitions of Key Terms**

*Corporate financial performance (CFP):* According to Tien et al. (2020), the concept of CFP pertains to evaluating a company's ability to generate revenue and effectively handle its assets, liabilities, and the financial concerns of its stakeholders and investors.

*Corporate social responsibility (CSR):* CSR is a metric used to evaluate a company's performance in terms of its social and environmental impact and financial performance. This approach aims to mitigate the effects of externalities associated with conventional accounting practices (Barauskaite & Streimikiene, 2021; Faza & Utami, 2021; Spanne, 2021).

*ESG (environmental, social, and governance):* ESG refers to the three crucial aspects in determining a business or corporate investment's long-term profitability and ethical impact: environmental, social, and governance. Socially responsible investors use ESG criteria to evaluate investments (Billio et al., 2021).

*Firm growth (FG):* A small or large company that is rapidly expanding in comparison to its competitors in its industry. Maury (2022) asserted that if a business can sustain its market share, its value will be enhanced by the growth in its industry. Furthermore, the expansion of the company will ultimately have an impact on its performance.

*Firm size (FS)*: It relates to a corporation's size and operations and is often utilized as a key and fundamental characteristic in empirical corporate finance research (Mubeen et al., 2021).

*Global reporting initiatives (GRI):* A comprehensive report that offers a framework for all international businesses and institutions established under the aegis of the Global Sustainability Standards Board (GSSB), which develops and supports standards for the implementation of a globally consistent basis, interest to educate and understand the impact of businesses on the economy, environment, and society, and interest to improve the quality and ensure the transparency of information to the stakeholder (Aljajawy et al., 2022).

*Return on assets (ROA):* Calculating a profitability metric involves the addition of operating profit and finance revenues, which are then divided by total assets.

*Return on investment (ROI):* ROI is a performance metric employed to assess an investment's profitability or efficiency or compare different investments' effectiveness. ROI measures the precise return on an investment relative to its initial cost.

*Stakeholder influence (STAKE):* Stakeholder influence refers to the influence exerted by individuals, groups, or organizations on the outcomes of an initiative or commercial venture, which can yield positive or dire consequences for the undertaking (Khuong, 2021). The information in sustainability reports varies based on the type of stakeholder and impacts specific operations or their performance (Oncioiu et al., 2020).

*Tobin's Q:* The measure of market profitability known as Tobin's Q is calculated by dividing the difference between market value and liabilities by total assets (Cho et al., 2019).

## Assumptions

This research will follow the theories of stakeholders and legitimacy, based on the following assumptions regarding the relationship between VSR and CFP on stakeholders' influence in the aerospace and defense industry. The sustainability reporting implies the following:

- establish trust between the firm and its stakeholders,
- provide solutions to climate change to armed conflicts,
- increased transparency, and
- practicing managers might gain insight into the future evolution of their CSR and ESG activities.

## Scope and Delimitations

The utilization of an empirical study design was chosen due to the historical dependence on established knowledge and the ability to integrate practices and research through empirical research approaches. This entailed utilizing pre-existing factual information and assuring that the study conformed to the necessary standards and levels of scholarly research. Adopting this empirical study design ensured respect for and acknowledgment of the existing contextual differentiating factors. The empirical study's design used secondary data from 150 aerospace and defense companies. Additionally, the design utilized annual reports and financial statements that are freely available on the company's websites. Since the study only used data obtained from secondary sources, efforts were made to prevent errors during the original data collection.

**Limitations**

This study used secondary data from various website databases (aerospace and defense proxy), annual financial statements, GRI, Bloomberg's ESG data, and Sustainalytics to analyze and evaluate VSR and CFP. Although every process stage can be considered in this study, bias can readily alter the outcomes. The outcomes could potentially be constrained by the alignment between the year of publication of the sustainability reports and Tobin's Q for that particular year. Undoubtedly, the sample size might be expanded and potentially more varied, enhancing the generalizability of this research to different businesses or regions. The results of this research may not be as credible given the paucity of studies on the association between VSR and CFP and stakeholder influence. The proposed study analysis may face limitations due to the utilization of a limited number of control variables and the timely availability of data, which is crucial for its effectiveness.

According to Arena et al. (2023), limitations refer to shortcomings in the research on the technique employed, sample selection, or measurement processes, which have the potential to impact the validity of the study's outcomes and conclusions. Limitations in research can also encompass biases, methodologies employed for data collection, limitations, and unforeseen factors beyond the researcher's control (de Souza Barbosa et al., 2023). Limitations refer to uncontrollable conditions or circumstances that researchers cannot influence, which might impose constraints or qualifiers on study techniques and testing outcomes.

## Significance of Study

This study holds significance as it has the potential to address a knowledge gap about stakeholders' influence on VSR. Specifically, it aimed to examine the correlation between VSR and CFP within the aerospace and defense sector throughout the period spanning from 2019 to 2022. This study has the potential to provide valuable insights for practitioners, as there is a lack of practical research on the influence of stakeholders' sustainability initiatives on financial performance. This is particularly significant considering the critical aspect of long-term profitability (Oncioiu et al., 2020). This research's findings could assist corporate executives in making strategic investments toward enhanced transparency, thereby meeting the expectations of stakeholders who seek advancements in environmental and societal well-being (Oprean-Stan et al., 2020). The findings of this study may also provide valuable insights to corporate managers and stakeholders regarding the possibility of enhancing financial performance through increased engagement in sustainability initiatives (Velte, 2020a).

Sustainability has been widely acknowledged as a catalyst for societal transformation, as it addresses the imperative for enhanced ESG in their pursuit of a circular economy. This approach could potentially enhance business productivity, cost reduction, and competitiveness by prioritizing key concerns identified through sustainability reporting (Chiek et al., 2021). Enhancing and expanding reporting in developing nations might result in positive social change. That would enable organizations, governments, and the community to form new alliances with stakeholders and determine new directions in social responsibility. This could satisfy the demands of

stakeholders who seek improvements to the environment and society (refer to Oncioiu et al., 2020).

**Significance to Theory**

The significance of this study lies in its potential to evaluate the impact of financial leverage on corporate performance, hence determining its overall significance and potential benefits. Al Amosh et al. (2023) have proposed that enhancing financial performance can be achieved by implementing nonfinancial measures prioritizing a more comprehensive range of stakeholders rather than solely focusing on shareholders. Gold et al. (2022) asserted that organizations have a wide range of stakeholder groups with a personal investment in sustainability. Hence, the degree of pressure and influence exercised by each group is seen as pivotal in determining the amount to which enterprises will address sustainability concerns in alignment with the needs of each relevant stakeholder. The influence of stakeholders on firm actions in tackling sustainability difficulties has raised significant concerns within the aerospace and defense industry. The increasing number of stakeholders worried that sustainability has contributed to these issues (Gold et al., 2022). According to Gold et al. (2022), incorporating sustainable principles into organizations' core values is a valid strategy that could potentially enhance investment opportunities.

Additionally, Gold et al. (2022), asserted that it has been hypothesized that better environmental management might stimulate cost reductions, increasing businesses' profitability. Similarly, stakeholder theory contends that stakeholders possess the capacity to exercise oversight over a company's resources, including the provision of

ESG scores. This oversight can potentially enhance ethical business practices and ensure the long-term sustainability of shareholders' wealth. Dalal et al. (2019) asserted that this is particularly relevant when the industry acknowledges the importance of assuming that journalists behave similarly in a voluntary context.

Theoretically, improving reporting quality can signal a change in corporate reporting practices as asserted by Danisch, (2021). Investors might, therefore, choose large-scale, state-owned, and environmentally concerned sectors and organizations that disclose more information about social responsibility, as sustainability reporting transparency is highly associated with a company's financial performance (Nguyen et al., 2021).

**Significance to Practice**

The primary objective of this study is to augment the current body of professional knowledge by utilizing conceptual frameworks and empirical analysis to clarify the influence of stakeholders on the correlation between VSR and CFP within the aerospace and defense industry. This research investigated the decision-making process researchers use when choosing variables and approaches and explored the relationships between these aspects and sustainability initiatives. According to Chen and Kelly (2015), as cited in Javed et al. (2020), organizations that successfully cater to the wants and concerns of diverse stakeholders tend to receive positive feedback and are evaluated favorably. Similar to the argument by Javed et al., who stated that the instrumental method of stakeholder theory provides insight into the advantages of establishing positive interactions with various stakeholders. The objective of this study is to address the gap

that exists between VSR and CFP in the aerospace and defense industry. The primary goal of this study is to investigate the stakeholder and legitimacy theory by linking the stakeholder effect on the aerospace and defense industry's performances. Nonetheless, few scholars have made considerable progress in the field of stakeholders' influence on CFP. By addressing the changes as part of CFP, the study's findings may advance knowledge and comprehension in support of professional practice in sustainability reporting by businesses.

**Significance to Social Change**

Cultural norms and general community behavior, the accessibility of financial resources, the flexibility and stability of the government, and the diversity of the societal structure all impact social change (Bansal, 2019). The current study is expected to contribute to social change by illustrating the need to modify current reporting standards, which might serve as profit generators for many organizations. The study's findings may illustrate stakeholder influence in VSR and CFP, which numerous researchers have related. When businesses rely more on sustainability transparency and policies that enhance their revenues and overall performance, there is the opportunity to engage in other environmental projects that improve the overall status of their industry by raising their living standards (see Hernández et al., 2020; Kraus et al., 2020). Furthermore, the current study may positively impact social change by defining a technique of responsible sustainability reporting that provides more significant returns, hence enabling chances for giving back to local communities while driving profits. When a suitable path is implied, companies can engage in a variety of projects, such as increasing the visibility of CSR

rankings, incorporating emerging global standards of expected responsible behavior into their management systems, and introducing accountability initiatives and other services focusing on environmental sustainability, all of which could improve the overall well-being of society.

**Summary and Transition**

This research incorporates a conceptual framework based on stakeholder and legitimacy theory studies. The study's objective is to offer a comprehensive elucidation of the influence of stakeholders in the aerospace and defense industries on the correlation between VSR and CFP. The study of stakeholder influence in the aerospace and defense industry on the relationship between VSR and CFP aimed to explain how aerospace and defense companies manage their operations using a combination of sustainability reporting and financial performance. Stakeholder theory generally accounts for the range of stakeholder interests and their rivalry for corporate resources. When the owners have stakeholder-maximizing interests, they will act to protect the well-being of the various parties involved in the firm's relationship. Hence, individuals within a corporation are inclined to participate in CSR to emulate their colleagues, uphold their social credibility by avoiding negative perceptions, and ensure the organization's enduring viability.

As a result, researchers have conducted studies on the relationship between VSR and CFP, resulting in a lack of consistency with a positive or negative relationship between VSR and CFP. The current study is divided into five major chapters, with Chapter 1 as an introduction. The introduction included the background, problem statement, purpose of the investigation, research questions and hypothesis, conceptual

framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, and importance of the study, concluding with the summary and transition. The second chapter reviews the research on the influence of stakeholders in the aerospace and defense sectors on the relationship between VSR and CFP.

# Chapter 2: Literature Review

## Introduction

This study examined VSR and CFP on stakeholders' influence in the aerospace and defense industry. The study also considered factors such as firm size, growth, return on assets (ROA), Tobin's Q, Global Reporting Initiative (GRI), return on investment (ROI), and environmental, social, and governance (ESG) scores. In this study, I also investigated whether a loss in the preceding year reflected a company's financial performance. The primary aim of this literature review was to examine the current body of literature critically and lay the groundwork for further exploration of the research subject. In the aerospace and defense industry, the objective of the problem statement was to investigate the correlation between VSR and CFP while examining stakeholders' influence on CFP outcomes. Furthermore, the quantitative assessment aimed to perform a correlational analysis of the relationship between sustainability reporting and financial outcomes within the aerospace and defense sectors.

According to Drempetic et al. (2020), every investment made per the sustainability reporting investor's code of ethics should adhere to sustainability reporting and responsible investing principles. The allocation of investments to more ethical and environmentally friendly businesses is determined mainly by rating organizations' ESG ratings (Drempetic et al., 2020). Since the disclosure of ESG plays a significant role in depicting the reputation of corporate sustainability, the institutional theory is a concept commonly used in the literature on ESG. The institutional theory considers how corporate success is impacted by social and environmental performance (Bilyay-Erdogan,

2022; Campbell, 2007). According to Herold (2018), the stakeholders may impact institutional logic because it is challenging to define stakeholder influences at the business level due to a lack of conceptual clarity. Prior literature has mainly examined the relationship between CSR, a derivative of CFP. However, there is no consensus on whether stakeholders' influence affects the relationship between VSR and CFP, specifically in the aerospace and defense industry (Ludwig & Sassen, 2022; Rahi et al., 2021; Ramzan et al., 2021; Xia et al., 2023a).

Despite the significance of sustainability reporting practices and the disclosure of non-financial information for enhancing business and market openness, the outcomes are quite diverse and inconsistent, ranging from positive to negative concerning the impact on CFP. While organizations recognize their responsibility towards sustainability reporting management, efficiency largely depends on the balance of interests of participants (stakeholders), who might actively influence the enterprises and commercial policy, distributing its resources in their favor (Chowdhury et al., 2021). According to the signaling theory, companies that reveal environmental difficulties are engaged in a proactive environmental plan because they might be incentivized to encourage shareholders and other stakeholders to disclose more voluntarily (Iswati, 2020).

Based on the findings of Ludwig and Sassen (2022), Rahi et al. (2021), and Ramzan et al. (2021), it has been observed that investors operating within the aerospace and defense industry may exhibit an excessive preoccupation with financial performance. They may not care whether companies create sustainability reporting. Thus, Poor reporting on the social aspect of a company's financial performance might harm its

credibility and reputation in the market (Oprean-Stan et al., 2020). This could harm both financial and market performance and sustainable growth, consequently affecting the ESG initiative (Oprean-Stan et al., 2020). Sustainability reporting consequently serves as both a marketing tool for the organization and a source of easily accessible information for customers about the actual effects of the company's activity on society and the environment (Agyei et al., 2019; Oncioiu et al., 2020); however, there is still a debate concerning the efficacy and legitimacy of corporate response to CSR.

CSR, one of the first external reporting methods that first emerged in the United States in the 1970s as a self-regulatory business model for stakeholders to assess a company's activities and to establish legitimacy with society as a strategy to maintain good relations with various stakeholders (Association of Corporate Citizen Professionals [ACCP], 2024; Christensen et al., 2021). Freeman (1984) argued that social performance is needed to attain business legitimacy, contributing to increased financial performance. Similarly, Singh and Misra (2021) argued, based on Freeman's (2007) stakeholder theory, that business social responsibility gives firms a competitive edge by enhancing their financial strength, implying that sustainability reporting positively impacts financial performance.

Multiple researchers have studied the relationship between VSR and CFP, and an analysis of the findings suggested that little research considers the stakeholder groups' influence on VSR and CFP (Zrnić et al., 2020). The literature mainly focused on emphasizing outcomes GRI, ESG, firm growth, size, ROA, and Tobin's Q rather than the nature of the collaborative initiative itself (Almeyda & Darmansya, 2019; Aureli et al.,

2020; Chiek et al., 2021; Dalal et al., 2019; Darnall et al., 2022; Helfaya & Whittington, 2019; Isaksson & Steimle, 2009; Machado et al., 2021; Raghunandan & Rajgopal, 2022; Rahi et al., 2021). Within the literature, a perception gap was identified concerning stakeholders' influence, suggesting the need to broaden the research to include insight into what determines stakeholder opinion concerning stakeholders' influence on VSR in the aerospace and defense industry, which had not been comprehensively studied, according to the research performed by Zrnić et al. (2020). Therefore, this study was necessary to examine whether the stakeholders influence the relationship between VSR and CFP (Xie et al., 2019).

This study used a quantitative approach to examine the relationship between VSR and CFP on stakeholders' influence while controlling firms' size and growth in the aerospace and defense industry. I also postulated whether the firm had a loss the previous year in this study. The impact of using sustainability reporting disclosure could improve corporate sustainability practices. Providing instruments for a well-functioning corporate governance structure that complies with the design for sustainable growth could potentially benefit socially responsible enterprises. Stakeholder influence could be a strong consideration in sustainability reporting for an organization's long-term financial performance (Dissanayake et al., 2019). In this study, I examined the legitimacy and stakeholder theories through a conceptual framework to determine whether the stakeholders influence the relationship between VSR and CFP. In this way, I attempted to understand and potentially provide literature for organizations and other scholars to recognize the significance of stakeholders' influence on a company's profitability.

The body of literature connected to this study's scope comprises a large and diverse body of work addressing interrelated concepts relevant to comprehending the breadth and depth of the subject under consideration for the study. In the literature review, I looked at multiple facets of the problem and societal change within stakeholder influence, greenwashing, VSR, and CFP. The topics covered included sustainability reporting, CSR, GRI, ESG, firm value, return on investment, return on total assets, Tobin's Q, company financial performance, and stakeholders' essential role in influencing sustainability reports.

I explored literature associated with the conceptual framework legitimacy theory and stakeholder theory. The legitimacy theory is mainly pertinent to this study because the theory considers the expectations of the stakeholders and society and whether an organization can comply with the expectations upon which many organizations depend (Meutia et al., 2022; Zieba & Johansson, 2022). Legitimacy theory and stakeholder theory coincide in their definition that organizations are part of a more extensive social system on which they have an impact, but they are also affected by other groups within the same society (Meutia et al., 2022; Zieba & Johansson, 2022). While legitimacy theory comprehensively views an organization's connection with society, stakeholder theory helps to explain the rationale for VSR disclosure.

Because VSR is such an essential component of sustainability reporting, it must be analyzed through the lens of a theory that gives a practical and logical means to comprehend stakeholders' influence that impacts CFP (Benet, 2013a & 2013b; Haugaard, 2010). Sustainability reporting is linked to financial success and is a component of the

company's strategy to gain a competitive advantage. The conceptual framework literature was reviewed and its relevance to this study will be clarified. Additionally, the concept of stakeholders' influence in the aerospace and defense industry as a collective tool is a significant aspect of this literature review and the central concept connecting the array of elements in this study about VSR and the relationship between CFP.

This literature review aggregates concepts and considerations primarily from legitimacy theory and stakeholder theory approaches to sustainability performance and its effect on financial performance. Evidence is provided that links financial performance to both the legitimacy theory and stakeholder theory. Stakeholder and legitimacy theory is expanded to include shared value, signaling theory, institutional theory as a resource-based view, and stakeholder pressure theoretical frameworks. The instrumental approach and hypothesis are discussed in the literature search strategy, the conceptual framework for the study, and the concept of sustainability within the context of this study as one of the stakeholders' influences in connection to VSR and CFP.

**Literature Search Strategy**

The literature reviewed in this study was sourced from several scholarly outlets, including books, full-text journal articles, government papers, corporate annual financial statements, and government reports. The search was further narrowed down to encompass publications that were published in the year 2000 and forward. I drew from research concepts such as *stakeholder influence, organizational performance, corporate financial performance strategies, global reporting initiative (GRI), environmental, social, and corporate governance (ESG), strategies in small, medium, and large aerospace and*

*defense organizations (SMLADOs), and sustainability* for the keyword search in the databases. Key articles in the reviewed literature were identified and collected for additional examination. I used the Walden University Library databases and the Google Scholar search engine to discover peer-reviewed journal articles. In addition, I used three business and management databases to research: *Academic Source Complete, Emerald Insight, and SAGE Journals*. I also searched multiple databases, including *ProQuest Central, Academic Search Complete, and Walden's Thoreau Multi-Database*. Additionally, I searched key management and financial periodicals to ensure the probability that no significant articles were overlooked. The publications comprised the *Journal of Management, Research in International Business and Finance, Academy of Management Journal, Business Strategy and the Environment, Business and Society, The International Journal of Effective Board Performance, Journal of Applied Psychology, International Journal of Business and Society, Sustainability, Academy of Management Review, Corporate Social Responsibility and Environmental Management, Social Responsibility Journal, and Organizational Science*. The journals were queried to identify publications published between 2000 and beyond pertinent to the research.

In reviewing the literature, I also searched for literature supporting the study's methodology. I conducted a quantitative multiple methodology study. I researched key methodology journals for literature on quantitative articles published from 2000 to beyond. The journal titles included the *Journal of Applied Quantitative Methods and the American Journal of Mathematical and Management Sciences*. Finally, I utilized Google Scholar and Walden Library to conduct a thorough literature search on the various areas

of the research topic. This involved using the following key search phrases: s*ignaling theory, institutional theory, stakeholder pressure, quantitative, sustainability, and financial performance, the linkage between sustainability efforts and financial performance, sustainability and corporate sustainability, mixed method, voluntary sustainability reporting, global reporting initiative, and environmental, legitimacy theory, social and corporate governance, triple bottom line, stakeholder theory, and corporate financial performance.* These key terms were utilized singly or in combination to produce a comprehensive compilation of articles and other data relevant to this study.

This literature review expounded on several concepts and theories that underpin the association between VSR and CFP and their impact on social change. The review laid out work from several disciplines that served as the grounding for this study. Furthermore, the review is organized based on the existing literature on the conceptual framework mentioned, the research topic, and any sub-themes that emerged in the study's investigation of stakeholder influence, VSR, and CFP. The review commences with examining the ongoing debate surrounding VSR and CFP, as highlighted by Yang et al. (2021). This section establishes a long and varied history associated with CSR and VSR. Due to stakeholder demands and increasingly progressive leadership, CSR reporting, frequently called "VSR," has grown and is said to become more sophisticated in the coming years (Carroll, 1991a).

The second section presents the concept of stakeholder influence (STAKE), which is used as a control variable "covariates" in this study, and the conceptual and theoretical justification for focusing on this aspect of VSR and CFP (Kim & Ferguson,

2019a). The conceptual framework also proposes the significant impact of stakeholder influence on the relationship between VSR and CFP using ROI as the primary mediator and moderator to offer solutions to social issues. The third section draws on legitimacy theory and stakeholder theory to argue the theoretical defensibility of the notion that stakeholders play an essential role in VSR legitimacy and the influence on CFP and to explain the main CSR categories for the literature review (Latapí Agudelo et al., 2019). It presents the justification for studying stakeholders' influence in the context of a socially responsible organization. The fourth section examines important works written about each of the independent variables in the study. It describes each variable's theoretical applicability and how they are predicted to connect with VSR and CFP. The fifth section presents the gaps in the literature, and finally, the literature review summary is presented.

**Conceptual Framework**

The present study will employ legitimacy and stakeholder theories as theoretical frameworks, extensively utilized in prior research to establish a robust conceptual foundation. The present study will also examine the legitimacy, signaling, and institutional theory framework within the context of the resource-based view (Crossley et al., 2021; Deegan, 2019; Dmytriyevet al., 2021; Martens & Bui, 2023; Moloi et al., 2020). The selection of the frameworks was based on their prioritization of sustainable business practices. Utilizing the legitimacy theory has been a common practice in scholarly literature to elucidate the rationale behind corporate disclosure of social and environmental information. Moreover, scholars have often integrated the legitimacy

theory with other theoretical frameworks, as evidenced by the works of Bartolacci et al. (2022), Ekundayo and Josiah (2020), and Press et al. (2020).

According to the legitimacy theory, alterations in legitimacy are closely linked to changes in the social and environmental environments. In essence, according to Ekundayo and Josiah (2020), businesses must possess the capacity to adapt their objectives, processes, and offerings when there is alignment between the presence of a company that does not cause disruption or conflict with the prevailing societal and environmental values. The connection between the legitimacy theory and the GRI framework is established by Badia et al. (2020), who argued that the involvement of stakeholders contributes to the credibility and reliability of the sustainability report.

The sustainability report is a nonfinancial report designed to meet the needs of diverse stakeholders. The concepts of "sustainable development" and "sustainability" are closely linked, as sustainability is characterized by development that meets the needs of the present generation while ensuring that future generations can satisfy their own needs (Badia et al., 2020; Brundtland, 1985). Martens et al. (2023) stated that the legitimacy theory suggests that sustainability report disclosures can serve as a means to align business behavior with societal expectations. This theory posits that firms strive to operate within the boundaries and standards established by society. The legitimacy theory offers a practical framework for understanding corporations' voluntary social and environmental disclosures. This understanding serves as a foundation for participating in substantive public discourse.

Researchers have utilized the stakeholder theory as a fundamental framework to enhance comprehension of the interconnections among environmental, social, and economic consequences (Dmytriyev et al., 2021). Valentinov and Chia (2022) asserted that stakeholder theory posits that corporate management can attain enduring prosperity by prioritizing the interests and requirements of all stakeholders. According to the notion proposed by Freeman (1984), managers have the potential to increase the value of a firm through improving its social and environmental performance. Stakeholder theory and legitimacy theory both center their attention on the relationship between the objectives of corporate management and the operational setting in which they operate. Nevertheless, stakeholder theory is utilized more as a framework for analyzing other theories. Freeman (1984) created the stakeholder theory. According to the concept, businesses distribute environmental information due to the influence exerted by stakeholders. For example, Romero et al. (2019) aimed to compare and evaluate the quality of sustainability information that corporations included in their annual reports. Their study revealed that companies offer higher quality information in their annual reports than the sustainability information provided separately.

The stakeholder theory and shared value emphasize the mutual benefit of enhancing financial performance for the enterprise and society. Therefore, to effectively respond to the concerns and requirements of key stakeholders, businesses will implement a range of measures, including the utilization of strategic disclosures and sustainability reports. Freeman (1984) proposed a significant perspective on conceptualizing organizations as “stakeholders.” However, the impact of stakeholders on a company’s

operations might exhibit variability in terms of its kind and extent. The focus of the stakeholder theory revolves around the identification of variables that impact an organization's ability to maintain its sustainability.

Sustainable business practices have gained widespread recognition and are now legally mandated for specific organizations worldwide, indicating the significance of corporate social responsibility. To gain a deeper understanding of the elements that impact sustainability reporting, researchers have proposed many conceptual models and frameworks, including the ESG and GRI frameworks (Zrnić et al., 2020). In recent years, there has been a growing interest in the academic community in the subjects of VSR and CFP. Claims about sustainability have led companies to demonstrate their sustainability efforts. The importance of comprehensive ESG reporting on the financial performance of aerospace and defense firms was emphasized by Almeyda and Darmansya (2019). For example, Almeyda and Darmansya assessed the impact by analyzing the metrics of ROA and return on capital (ROC) within the context of ESG factors. Their findings indicated a statistically significant association between the ESG reporting of a company's ROA and ROC (Almeyda & Darmansya, 2019).

Bartolacci et al. (2022) combined legitimacy theory with the signaling theory in research to determine if corporations use employee-related disclosures and organizational activities to legitimize their connection with society. Their findings indicated that stakeholder pressure influences reporting levels, stimulating corporate social disclosures based on legitimacy and stakeholder theories Bartolacci et al. (2022). Thus, institutional theory, in conjunction with stakeholder and legitimacy theories, might provide new

insights into multinational corporations' reporting processes. Also, the quality of sustainability reports is still questioned, mainly due to the lack of stakeholder engagement and reliability. Policies to monitor stakeholder involvement and use greater external assurance may be necessary to improve sustainability reporting quality and comprehend the relationship between stakeholder influences and CFP.

**Theories**

This study aimed to examine stakeholder influence on the relationship between VSR and CFP, gain knowledge from previous research, and identify the most prevalent theories. Based on the present study's findings, it can be inferred that two prevailing frameworks, legitimacy theory and stakeholder theory, were frequently employed in conducting similar investigations.

Deegan (2019) posited that applying legitimacy theory in accounting literature elucidates the rationale behind corporations' decisions to disclose social and environmental information. Similarly, Kouaib et al. (2020) asserted that legitimacy theory, as a positive accounting theory, serves as a framework for investigating the rationale for establishing specific accounting practices. Thus, the theory centers on the divergence between environmental reporting standards and firms' value propositions. In line with the framework of legitimacy accounting theory, stakeholder theory elucidates the diverse obligations organizations should perform with different stakeholders to establish and maintain their legitimacy (Deegan, 2019).

## Legitimacy Theory

Legitimacy is vital for organizations, as it is a foundation for their operations. The theory, as explored by Soewarno et al. (2019), delved into the analysis of societal expectations and the extent to which an organization could fulfill and maintain such expectations. The inability to meet societal expectations can significantly impact the viability of an organization, particularly if society calls the organization's legitimacy into question. Soewarno et al. (2019) asserted that this can create obstacles in securing financial resources, attracting qualified people, and acquiring clients.

Organizations frequently disclose information to restore, uphold, or perpetuate legitimacy as noted by Deegan (2019). Therefore, the primary motivation for firms to participate in CSR initiatives might be to enhance their organizational credibility. The literature showed that using legitimacy theory can effectively elucidate the rationale for environmental disclosures (Deegan, 2019; Fisher, 2020; Solikhah & Maulina, 2021). Deegan (2019) suggested that corporations can shape the perspectives of their stakeholders regarding society by creating CSR initiatives. Consequently, exploring the dynamics behind the transformation of legitimacy elements and their responses to internal and external conditions offers valuable opportunities for scholars and organizations to enhance their theoretical and practical understanding (Fisher, 2020). Deegan (2019) asserted that corporations are compelled to justify their actions, leading to their inclination to generate sustainability reports. This suggests that it is essential for them to influence the public's perception of the organization by disseminating information.

The legitimacy hypothesis posits that enhancing the quality of sustainability reporting is a robust signal for establishing confidence. According to Simoni et al. (2020), enhancements in the quality of reporting can potentially reduce the information disparity between a corporation and its stakeholders.

Thus, the legitimacy of an organization is determined by the community's response to its activities. Consequently, it is to be noted that legitimacy is determined by the collective knowledge or beliefs of society regarding an organization's actions rather than the organization's objective behavior. This implies that the survival of an organization is contingent upon the perceptions held by members of the broader social system. The credibility of a firm may be compromised if it neglects to offer disclosures that substantiate its adherence to societal norms despite its performance aligning with these values in practice. In the event of shifting societal expectations, it should become imperative for a corporation to exhibit a corresponding transformation in its performance and activities. Alternatively, the corporation should provide a comprehensive rationale and justification for its decision to maintain unchanged business practices (Deegan, 2019).

**Stakeholder Theory**

According to Romero et al. (2019), the legitimacy theory and stakeholder theory conceptualize organizations as integral components of a broader social system. These theories acknowledge that organizations should exert influence on this system while simultaneously recognizing that they are subject to influence from various other societal groups. At the same time, the legitimacy theory examines an organization's engagements

with the broader society. The stakeholder theory is centered on recognizing that diverse stakeholders hold varying perspectives regarding the optimal functioning of an organization. Consequently, this theory emphasizes extensive stakeholder engagement and delineates society into several factions or groups.

The evaluation of the organization's performance and adherence to contractual obligations will be conducted by the stakeholders that rely on its operations. Thus, to mitigate contractual violations, managers should understand the anticipated obligations and viewpoints held by many stakeholders according to Deegan (2019). Stakeholder theory has been employed to elucidate the underlying rationale behind the practice of CSR disclosure. Companies increasingly implement CSR initiatives in response to an expanded spectrum of stakeholders, recognizing that shareholders are no longer the sole primary stakeholders (Deegan, 2019). The level of transparency in sustainability disclosure is associated with the extent of stakeholder power. García-Sánchez et al. (2021) stated that stakeholders can administer punitive measures and incentives to corporations, contingent upon the extent and caliber of their disclosure practices. This implies that CSR disclosure can serve as a means to fulfill the demands of stakeholders, as highlighted by Franco et al. (2020). Thus, organizations can effectively showcase their responsiveness to stakeholder demands by implementing social responsibility practices (Dameri & Ferrando, 2022).

Inherently, corporations face increasing pressure from stakeholders to adopt more stringent regulations for CSR and provide transparent reporting of their achievements in sustainability reports. Therefore, organizations dedicate significant resources to

modifying stakeholder preferences in response to external pressures, aiming to secure their endorsement for sustained business operations (Ying et al., 2021). Theoretically, according to Ying et al., a company's CSR initiatives could encompass broader societal concerns, demonstrating attentiveness toward its stakeholders. Additionally, such activities can prove the company's commitment to meeting its social responsibilities as stated by Adanlawo and Chaka (2021). García-Sánchez et al. (2021) asserted that the favorable perception of the company's emphasis on ESG practices is expected to increase, leading to a potential shift in stakeholder investment patterns.

According to Tarighi et al. (2022), the stakeholder hypothesis explains the motivations behind a corporation's engagement in such endeavors, and how the profitability of CSR initiatives is contingent upon the evaluation and decisions made by stakeholders. Hence, corporate social responsibility programs are pivotal in fostering positive relationships with various stakeholders and restoring societal legitimacy through fulfilling their social contract.

**Signaling Theory**

As stated by Xu et al. (2019), the concept of signaling theory is centered around utilizing market signals to address the issue of information asymmetry, enabling two parties to make well-informed decisions. Many firms adhere to these practices as they align with existing norms and are not subject to severe regulation (Zhang et al., 2021). Zhang et al. claimed that legitimacy is highly pertinent as firms consistently strive to ensure their adherence to societal norms.

**Institutional Theory**

Based on institutional theory, the process of institutionalizing a particular structural adaptation or innovation within the organizational field is expected to exert a dynamic moderating influence on the wealth-enhancing effects linked to the individual adoption of CSR at the level of the organization and the wealth-protecting consequences associated with CSR adoption as stated by Oware and Mallikarjunappa (2022). Oware and Mallikarjunappa found that a CSR policy is necessary for companies operating in a specific region, aligning with the prevailing societal and corporate norms on sustainable practices. To ascertain the efficacy of mandatory reporting as opposed to voluntary reporting in advancing the aims of the sustainability agenda, it is imperative to engage in scholarly discourse.

# Literature Review

## Introduction

Sustainability reporting has experienced a notable rise in prevalence among corporations globally, attracting considerable attention from corporate entities. In different organizational contexts, sustainability efforts have been documented using different terms. These include CSR, TBL, integrated reporting, nonfinancial reporting, sustainability reporting, and ESG reporting (Ben & Belkacem, 2022; Chiek et al., 2021; Danisch, 2021; Darnall et al., 2022; Okafor et al., 2021). Sustainability reporting and CSR terms are employed pragmatically within this study, as they are relevant to the topic under consideration.

A considerable body of research has been dedicated to examining the influence of CSR on CFP, yielding varied outcomes (Okafor et al., 2021). For stakeholders to evaluate the ESG impacts of business activities on an organization, social responsibility might be perceived as a means of conveying information or as a mechanism for bolstering corporate accountability. Conversely, the fundamental principle underpinning organizational strategy is the pursuit of shareholder wealth optimization. According to Okafor et al. (2021), this principle has historically conflicted with the interests of various other stakeholders.

Prior empirical studies have examined the impact of technology-focused research and development, technology commercialization, and CSR on financial performance according to Okafor et al. (2021). Additionally, research has explored the relationship between expenditure on CSR initiatives and business performance within the technology

industry. For example, the findings of the quantitative research conducted by Okafor et al. (2021) indicated a positive relationship between CSR investments and the financial performance of technology organizations. Okafor et al. study revealed that companies that allocate more significant resources toward CSR initiatives experienced higher levels of revenue and profitability. In contrast, Okafor et al., earlier research discovered limited empirical support for the association between CSR and Tobin's Q, a firm's financial performance measure. Nevertheless, according to Carp et al. (2019), communicating with stakeholders regarding their specific undertakings is crucial in differentiating a corporation and influencing its prospective growth.

Similarly, Ben and Belkacem (2022) examined the impact of CSR on financial performance within the banking industry. Their findings revealed that individualization is evident in this relationship, as factors such as the size and age of the banks had a positive influence. However, it is essential to note that a certain level of leverage might limit financial inclusion and stability, ultimately leading to a drop in the tangibility of assets as noted by Chiek et al. (2021). In their study, Chiek et al. employed data from the Bloomberg database, encompassing the period from 2011 to 2016; the dataset consisted of information from 100 publicly traded companies. Chiek et al. primary objective was to examine the relationship between ESG disclosure and financial performance within economic cycles. Chiek et al. identified a notable positive (negative) cyclic correlation between two enterprises, one located in Malaysia and the other in Thailand. Chiek et al. noted that it is a financial gain for Malaysian enterprises engaging in sustainability reporting since it helps to reduce knowledge asymmetry among stakeholders.

Thus, the interaction between CFP and CSR remains ongoing, resulting in mutual transformations. For instance, Danisch (2021) conducted a content analysis on 144 voluntary GRI Reports from 2015 to 2018. The study aimed to investigate the association between organizational disclosure and sustainability performance. Danisch observed that using GRI scores to evaluate environmental and social performance did not demonstrate any discernible correlation between social disclosure and social performance. However, Danisch established a performance-driven between environmental disclosure and performance. Danisch stated that voluntary disclosure aligned with reporting practices emphasizing performance-driven outcomes. Danisch found that firms were motivated to engage in social and environmental sustainability reporting to improve their investors' decision-making process. This motivation aligns with the principles of voluntary disclosure theory as it pertains to sustainability practices in the social and environmental domains.

The voluntary disclosure theory by Danish (2021) suggests that companies are motivated to disclose information about their social and environmental performance to differentiate themselves from competitors and reduce the information asymmetry between the company and its investors. In contrast to the legitimacy theory, which posits that a company lacks inherent entitlement to its existence and instead relies on a social contract with society, wherein the company undertakes socially desirable actions in return for social acceptance, benefits, and long-term viability (Danisch, 2021).

In Darnall et al. (2022) study, the objective was to examine the influence of ESG reporting within a particular Japanese context on the disclosure of sustainability data,

including examining the possible effects of integrating process-focused verification on the extent of information dissemination. The research findings indicated that companies that provided sustainability reports demonstrated a notable 39% rise in the quantity of sustainability data revealed, even in cases where they do not adhere to the ESG reporting guidelines. This aligns with the studies conducted by Chiek et al. (2021) and Janang et al. (2020), who examined the influence of corporate governance on sustainability reporting in the annual reports of Malaysian firms, employing the legitimacy theory as a theoretical framework. Chiek et al. and Janang et al. utilized a quantitative research approach in their respective studies to evaluate the extent of social disclosures. The researchers assessed the extent of social disclosure by utilizing the modified society transparency index (MoSDI), annual reports, and existing literature on sustainability. Their research involved a comprehensive examination of 234 annual reports from well-established Malaysian firms, covering the period from 2014 to 2016 (Chiek et al., 2021; Janang et al., 2020). Janang et al. stated that adherence to solid corporate governance norms might improve knowledge, address public concerns proactively, and reduce the legitimacy gap. Janang et al. asserted that including an audit committee and independent directors positively influenced the sustainability disclosure level. Additionally, it is seen that giant corporations have a greater propensity to partake in CSR initiatives when they possess a heightened degree of visibility.

The impact of sustainability reporting on CFP and materiality analysis in sustainability reports was investigated in the academic studies undertaken by Kowsana and Muraleetharan (2021) and Meutia et al. (2022). The present inquiries were conducted

within the theoretical frameworks of legitimacy theory and stakeholder theory. Kowsana and Muraleetharan (2021) discovered that previous studies had shown inconsistency in their findings on the existence and significance of the relationship between VSR and CFP. Meutia et al. (2022) established that the organization's approach to materiality analysis is primarily grounded in the findings derived from the legitimacy theory perspective. Their study also revealed that there was no substantial improvement in the quality of the materialism topic between 2018 and 2020, instead, Meutia et al. found that the ROA, ROE, debt-to-equity ratio, and total assets exhibited a statistically significant association. This suggests that the disclosure of materiality analysis is associated with the company's debt condition and CFP. The disclosure of materiality is demonstrated in sustainability reports.

Although the research conducted by Kowsana and Muraleetharan (2021) and Meutia et al. (2022) differed in examining the link between sustainability reports and CFP, both investigations revealed conflicting results. Similar findings were observed in the study conducted by Oprean-Stan et al. (2020) regarding the impact of ESG risk management on a firm's performance and long-term viability. The researchers aimed to ascertain the potential relationship between corporate performance, long-term sustainability, sustainability reporting, and inadequate management of ESG factors. The hypothesis put forth by Oprean-Stan et al. posited that the inadequate management of sustainability-related ESG factors would harm the financial performance of reporting organizations. However, the findings from multifactorial linear regressions contradicted this hypothesis. The findings of these authors imply that several market-based financial

performance metrics for long-term financial performance influence sustainability reporting (Chiek et al., 2021; Janang et al., 2020; Kowsana & Muraleetharan, 2021; Meutia et al., 2022).

Pham et al. (2019), in their research, employed all four methodologies and observed a favorable correlation between VSR and CFP. Tan et al. (2021) employed a methodology that involved utilizing the disclosure-scoring approach for the dimension of CSR and conducting cross-sectional data analysis and content analysis of companies' financial statements. Their objective was to evaluate the influence of CSR practices on CFP in 2015. Tan et al. employed the disclosure-scoring method for the CSR dimension and conducted cross-sectional data analysis in their study. Hence, researchers have utilized diverse methodologies in their academic inquiries, including correlation analysis, multiple regression analysis, descriptive statistics, and hypothesis testing.

Tan et al. (2021) focused on assessing the influence of CSR practices on company profitability in 2015; to evaluate the impact, the researchers conducted a content analysis of the financial statements of the selected companies. Tan et al. findings indicated that companies exhibiting CSR behavior were positively correlated with higher levels of CFP. It can be inferred from their research that a positive correlation exists between CSR and CFP. The findings also indicated that the five dimensions of CSR (stakeholder, social, economic, environmental, and willingness to pursue) CSR had varying associations with the two proxies (ROE and ROA) used to measure CFP. Additionally, Tan et al. findings indicated that the two measures of CFP have distinct associations with each of the five components of CSR when examined individually.

Similarly, Tanggamani et al. (2022) conducted a study to investigate the predictive accuracy and relevance of CSR disclosure policies on corporate financial performance (CFP), as assessed by ROA, and market performance, as measured by Tobin's Q. The researchers utilize partial least squares - structural equation modeling (PLS-SEM) as a unique approach to investigate the relationship between CSR and CFP. Tanggamani et al. found that CSR initiatives had both a significant and a positive effect on ROA and Tobin's Q. Nevertheless, it would be beneficial to carry out further research on variables such as third-party assurance, stakeholder influence, industry type, and environmental characteristics to gain a more comprehensive comprehension of the correlation between CFP activities and CSR on CFP.

Subsequently, the concept of VSR is closely associated with financial prosperity and other corporate governance practices known as CSR. Accordingly, VSR has a range of nonfinancial implications for firms and is influenced by several factors that impact corporate governance outcomes. Likewise, corporate governance laws have the potential to facilitate the establishment of a robust social communication system for CSR. The impact of the social communication system on CFP and social reputation is of utmost importance since it is influenced by varied opinions within the organization as stated by Velte (2022b). For example, the study conducted by Yang et al. (2021) examined the impact of VSR as determined by the GRI on the financial performance of corporations. Yang et al. analyzed the variables influencing performance outcomes by employing the signaling hypothesis, which posits that dividend increases convey favorable information regarding future earnings. This hypothesis suggested a positive association between

dividends and earnings. In this regard, Velte (2022b) underscored the significance of acknowledging that the social communication system could potentially impact CFP and social reputation due to the diverse perspectives present within the organization.

In 122 Chinese-listed companies, the GRI sustainability reporting framework was implemented. The information employed in this research was obtained from credible sources, including the Chinese Research Data Services Platform (CNRDS), the China Stock Market and Accounting Research (CSMAR), and WIND Economic (Yang et al., 2021). Yang et al. adopting GRI sustainability reporting had a significant and favorable impact on the financial performance of businesses. Furthermore, the results suggested that politically affiliated businesses derive the most advantages from using GRI sustainability reporting. Their results revealed a correlation between corporate governance and social responsibility practices, as well as the impact of the former on CFP.

CSR managers often serve as “change agents” within organizations, provided their position within the organizational hierarchy allows them to influence significant business decisions as stated by Aluchna et al. (2019). Aluchna et al. asserted that while some aspects may overlap, such as significant stakeholder groups, the main strategic drivers need to form the basis for establishing a unique perspective. It is necessary to acknowledge, though, that these reports are often customized to align with the preferences and concerns of the company’s stakeholders.

For example, Mahmood et al. (2019) employed a range of theoretical frameworks to examine the perspectives of managerial and non-managerial stakeholders regarding the

present condition of sustainability reporting in Pakistan. The theoretical lenses employed encompassed legitimacy theory, stakeholders' theory, institutional theory, political cost theory, and signaling theory. According to Mahmood et al. (2019), sustainability reporting in expanding and developing economies is predominantly influenced by external factors. Mahmood et al. emphasized that the involvement of foreign purchasers, global professional groups, and standard-setting organizations is crucial in shaping and advancing sustainability reporting.

Hence, external factors influence the introduction and growth of social responsibility in Pakistan. It is crucial to acknowledge that Pakistan's socioeconomic and cultural conditions played a key role in influencing the practices of transparency and the motivations behind firms' adoption of sustainability reporting initiatives (Mahmood et al., 2019). Mahmood et al. asserted that Pakistan has identified many primary barriers to implementing social responsibility. These barriers include insufficient government institutions, poor awareness and engagement in sustainability issues, faults in legislation, limited enforcement capacities, and a lack of political determination. Mahmood et al. (2019) argued that external stakeholders have been found to influence the extent of social and environmental disclosures.

Similarly, Velte et al. (2020a) conducted a study at the individual level to investigate how corporate governance policies can affect the impact of senior management professionals, such as the Chief executive officer, or Chief financial officer, on CSR outcomes. A quantitative investigation conducted by Velte and Stawinoga (2020)

showed that the existence of CSR committees had a beneficial impact on both CSR reporting and corporate performance.

Shaikh's (2022) study analyzed the ESG scores of 510 organizations across 17 countries from 2010 to 2018. Shaikh found that there are notable differences between companies that comply with the GRI rules and those that do not. These discrepancies, according to Shaikh, are notably evident in their market valuations, as assessed by Tobin's-Q, and their accounting performance, and shown in their ROA and ROE. The most recent analysis by Shaikh revealed that social factors hurt operational efficiency, while governance has a positive effect. However, due to environmental factors, corporations face significant challenges in accounting and market-based performance. Understanding the practical consequences of sustainability reporting among the three dimensions of sustainability (environmental, social, and corporate governance), referred to as ESG, can enable affiliated organizations to gain benefits and potentially improve their understanding of these three dimensions in the industry.

Al Hawaj and Buallay (2022), in their study, analyzed a dataset comprising information from 3,000 companies across 80 countries. The data spanned a period of ten years, from 2008 to 2017. Their research examined the differential effects of sustainability reporting, specifically environmental ESG, on firms' performance indicators. The indicators included operational performance, as measured by ROA; financial performance, as measured by ROE; and market performance, as measured by total shareholder returns Tobin's Q. The authors investigated how these indicators varied

across seven distinct sectors. Hence, the correlation between CFP and CSR is not easily discernible.

Financial reporting has a narrower scope than sustainability reporting, primarily concentrating on financial information. On the other hand, sustainability reporting appeals to a broader range of people because it incorporates ESG considerations. According to Oncioiu et al. (2020), the voluntary nature of sustainability reporting should be acknowledged. Oncioiu et al. found that corporate sustainability, on the other hand, can serve as a risk management strategy by averting potential financial liabilities that may result from a company's socially negligent actions. Oncioiu et al. found that corporations commonly use ROA as a success metric. These findings indicate that CSR initiatives can have positive, neutral, or negative correlations with CFP.

In environmental management literature, specifically accounting and financial ratios are commonly used as financial performance indicators. These ratios include market-to-book value, ROA, ROE, ROI, and Tobin's Q. The ratios are utilized as proxies to evaluate financial performance according to Chouaibi et al. (2021). Thus, given the various considerations, a well-established ESG organization acknowledges the importance of reliable communication and its impact on financial performance. Information disclosure plays a crucial role in establishing the legitimacy of a company's operations. It may shape management behavior, encouraging them to prioritize CSR initiatives and boost the company's reputation Chouaibi et al. stated.

To stay current with societal progress, companies should adjust their development strategies and effectively communicate them to the intended audience, as Anh and

Velencei (2019) suggested. Anh and Velencei suggested that there are significant shortcomings in the current acceptance of the legitimacy theory, which calls for further investigation. While recognizing the importance of legislative safeguards, the legitimacy hypothesis overlooks the impact of media on stakeholder perceptions and the influential stakeholder who holds the most power through information sharing. Although society, Anh and Velencei found comprises different elements with different levels of influence, legitimacy theory does not effectively address the concept of "society as a whole." Stakeholder theory, on the other hand, considers various audiences with different perspectives and significant societal impact. Anh and Velencei found that utilizing stakeholder theory could help to address the issue of the importance of various societal elements to business.

Thus, the concept of stakeholder theory, as established by Freeman in 1984, recognizes the benefits associated with sustainable performance. The concept implies that to foster sustainable growth and value creation for a corporation, it is imperative to consider the concerns and welfare of all stakeholders, as the repercussions of a company's failure extend beyond its immediate stakeholders and can adversely impact both the affected parties and society at large. The optimization of company value becomes unattainable for managers when they neglect stakeholders' interests. The stakeholder theory promotes value generation for all stakeholders by emphasizing sustainability and financial performance. Investors and investment managers believe companies that provide substantial ESG data exhibit greater profitability, generate higher returns, and possess less firm-specific risk (Shaikh, 2022).

Consequently, the corpus of knowledge can be categorized into three perspectives: proponents of the notion that CSR can enhance an organization's financial performance, proponents of the notion that CSR diminishes an organization's performance, and proponents of the notion that there exists no correlation between CSR and organizational performance according to Sameer (2021). I ascertain that one possible explanation for the relationship between sustainability disclosure and a company's financial performance is that social and ethical actions influence it as a moderating factor.

What is the correlation between social and ethical actions and the link between environmental disclosure and financial performance? To answer the question a study conducted by Chouaibi et al. (2021), highlighted the benefits of incorporating sustainability disclosure into company strategy, emphasizing how it can protect financial prosperity. On the other hand, a study by Ashrafi et al. (2020) focused on the significance of stakeholder influence when developing a business case for CSR. Moreover, in a study conducted by Talbot (2021), they focused on analyzing the impact of stakeholders on the sustainability performance of the Canadian forestry industry. The study's findings unveiled a significant link between active involvement with stakeholders and the long-term viability of the business.

In a broader sense, the behavior and influence of stakeholders play a crucial role in shaping the selection of initiatives employed by firms, as well as their propensity to participate in CSR and sustainability activities. Moreover, the influence is heightened when stakeholders perceive greater authority and legitimacy (Ashrafi et al., 2020). Nevertheless, to achieve equilibrium between conflicting stakeholder interests, businesses

should acknowledge the broader scope of stakeholder relationships as stated by Ashrafi et al. (2020). Ashrafi et al. asserted to operate effectively, companies should adhere to the conventional principles of stakeholder salience and actively identify and engage with their stakeholders. Ashrafi et al. study aimed to support companies in determining the appropriate unit of analysis that extends beyond the firm, which was achieved by considering the firm's connections with various stakeholders. The purpose of this approach is to effectively handle disruptive developments and generate innovative ideas that will influence the future of the business according to Ashrafi et al. (2020).

Both the legitimacy theory and the stakeholder theory agree, despite the theoretical differences between them, that organizations should disclose information to demonstrate their legitimacy to a society that is founded on ethical commitments rather than the desire to maximize profits. There have been references to stakeholders since the 1960s; however, Freeman (1984) provided the most comprehensive understanding of stakeholders, which encompasses those who affect or are affected by the organization's operations (Anh & Velencei, 2019). Disclosure of information regarding accountable conduct should depend on what is disclosed and multidimensional aspects that contain diverse content based on the content and goal of the analysis, Anh and Velencei (2019) asserted.

Therefore, including stakeholders in sustainability reporting is crucial due to their potential to exert influence or adversely impact an organization's performance. Sustainability performance measurements are a prominent aspect of the standards and guidelines commonly employed in nonfinancial reporting (Oprean-Stan, 2020). A

comprehensive framework of sustainability performance indicators facilitates evaluating and measuring corporate sustainability achievements, thereby supporting stakeholders and organizations in their decision-making processes, and enabling more effective nonfinancial corporate communication according to Oprean-Stan, (2020). Previous research has investigated the correlation between sustainability reporting and performance, uncovering positive and negative associations. However, Oprean-Stan found that the results of the various approaches have demonstrated either equivocal or conflicting conclusions.

**Sustainability Reports and Corporate Financial Performance**

Sheehy and Farneti (2021), stated, that because of the differences between the two concepts, “corporate social responsibility” (CSR) and “corporate sustainability” and the social dimensions of sustainability should not be used interchangeably. Sheehy and Farneti found that the concept of responsibility relates to the condition or the fact of being accountable, whereas sustainability refers to the ability to maintain a given rate or level.

Dmytriyev et al. (2021) argued that the comprehensive application of CSR and stakeholder theory, which are well-established theoretical frameworks for analyzing social concerns, is impeded by a limited and frequently erroneous understanding of their interconnectedness. The notion of CSR has transformed from its conventional philanthropic orientation to a more abstract framework that covers a novel business philosophy, Dmytriyev et al. stated, considering the interests of all stakeholders. As asserted by Dmytriyev et al., through a comparative study, it becomes apparent that the

two conceptual frameworks demonstrate differences in their respective orientations. The reason for this is that the “shareholder theory” emphasizes maximizing short-term revenue and allows for a certain degree of exploitation of stakeholders, said Dmytriyev et al. Moreover, the stakeholder approach posits that enterprises should consistently strive for optimal long-term benefits across the three dimensions of sustainability, as aforementioned. Freeman (1984) recognized the importance of firms aiming to optimize their financial performance but contends that this goal should not be their primary emphasis. Hence, the integration of CSR efforts into business operations has been motivated by the development of conceptual frameworks and the growing societal concern for environmental and social matters. Dmytriyev et al. argued that this phenomenon guarantees the sustainable execution of firm operations and activities.

According to Diez-Caamero et al. (2020), the advancements mentioned above have led to heightened acceptance and acknowledgment of diverse initiatives, including social accounting, sustainability reporting, performance indicators, and ESG ratings, as facilitated by rating agencies. Diez-Caamero et al. asserted that organizations employ ESG ratings as instruments to highlight their contributions to sustainable development to various stakeholders. Diez-Caamero et al. referred to a comprehensive report focusing on nonfinancial risks. That entails a company’s efforts to outline preventive measures to mitigate risks, presently and in the future. The report is specifically tailored to address the demands of the company’s internal and external stakeholder groups. Sustainability reporting enhances transparency by providing information on the company’s environmental and socio-ethical actions. When juxtaposing the notions of sustainability

and CSR, it becomes evident that the former prioritizes the present circumstances to a greater extent, while the latter adopts a forward-looking perspective and endeavors to formulate a strategic framework. Thus, sustainability encompasses a comprehensive viewpoint considering environmental, economic, and social sustainability.

Thus, there should be a call for corporations to adopt a more proactive approach to addressing the prevalent social and environmental challenges in the regions where they conduct their operations. Many case studies and assessments have been undertaken to examine different CSR techniques, resulting in the generation of theoretical and empirical evidence on these issues. Shad et al., (2019) introduced a theoretical framework that examines the potential influence of sustainability reporting requirements on the association between enterprise risk management (ERM) implementation and business performance. The study employed a quantitative content analysis approach to analyze the annual reports of various firms. The outcome suggested that enhancing economic value-added performance might be achieved through two key strategies: boosting price-to-earnings-to-earnings ratios and reducing the cost of capital, accomplished by mitigating information asymmetry between enterprises and shareholders (Shad et al., 2019).

Abad-Segura et al. (2019) asserted that ongoing research in this field is making significant progress on a global scale. Incorporating novel theories and methodologies, such as environmental economics and corporate sustainability, has contributed to this phenomenon. While there has been progress in studying the connections between CSR and VSR, it is important to acknowledge that the interdependence of obligations means

that a corporation's interactions with one group of stakeholders might impact its interactions with other groups (Dmytriyev et al., 2021).

**Sustainability Reports**

In their study, Lynch, and Lynch (2022) identified the vocabulary employed by the Global Reporting Initiative (GRI) to report on sustainability within various existing terminologies that consist of three interconnected criteria; topical, sector, and universal, which apply to all entities engaged in producing sustainability reports. Lynch and Lynch asserted that the GRI recognizes openness and accountability as fundamental drivers behind creating sustainability reports. This method of openness and accountability facilitates the thorough evaluation and transparency of enterprises' impacts on the economy, environment, and society, irrespective of their size, in a manner that is both comparable and reliable (Lynch & Lynch, 2022). Because organizations utilize the adoption of sustainable reports to showcase their dedication to sustainable development and their accountability to internal and external stakeholders. The reports are helpful for businesses as they provide complete information on company ESG performance, including positive and negative contributions.

Prior studies have endeavored to ascertain and substantiate the existence of a linear relationship, either positive or negative, between CSR, inadequate management of ESG factors, and the performance and long-term growth of businesses. The primary objective of these studies was to identify any inconsistencies, gaps, and potential avenues for future investigation (Camelia Oprean-Stan et al., 2020; Hahn & Kühnen, 2013). Both stakeholder theory and legitimacy theory have a direct association with sustainability

reporting. According to Siew (2015), sustainable reporting tools can be categorized into various types, frameworks, standards, ratings, and indices making them valuable for businesses (Siew, 2023; Tenuta & Cambrea, 2022). Tenuta and Cambrea (2022) asserted that, in contrast to frameworks, standards possess a higher level of formality and delineate the prerequisites, specifications, or attributes that can be employed to consistently achieve sustainability objectives because external ratings and indices assess a company's sustainability performance.

As an illustration, Deloitte conducted a poll in March 2022, which included 300 executives. Deloitte asserted that out of these executives, 75% were employed by publicly traded firms that had an annual revenue of at least $1 billion. It has been argued by Deloitte (2022) and Lynch and Lynch (2022), that despite well-founded strategies aimed at addressing the growing need for dependable ESG reporting, significant exertion is still necessary to effectively implement and supervise ESG initiatives. Therefore, De Freitas Netto et al. (2020) created the term "fuzzy reporting." The phrase delineates the practices of some organizations that manipulate the truth or advance CSR corporate operations through one-way communication channels and sustainability reports.

Sustainability reports should include essential information that might influence a company's market value and serve as a foundation for potential investment decisions, fostering transparency and trustworthiness as argued by GarcaSánchez et al. (2019). Hence, a high-quality sustainability report not only satisfies the compliance criteria outlined in the social contract but also guarantees that the results are in line with the anticipated preferences of stakeholders.

## Relationship Between Sustainability Reporting and Corporate Financial Performance

Numerous scholars have examined the correlation between sustainability reporting and financial performance in the last ten years. Their findings have been marked by inconsistencies and divergent perspectives, spanning from favorable to unfavorable results (Kouloukoui et al., 2019; Shad et al., 2019). However, extensive research has suggested that there is a strong link between disclosing CSR and achieving favorable financial performance, as demonstrated by the recent study conducted by Tunio et al. (2021). Tunio et al. in their literature review emphasized that robust empirical evidence substantiates a positive correlation between VSR and CFP. One instance of this is the assertion made by Abdillah et al. (2020) that social performance is an essential component of organizational legitimacy, which in turn leads to improved financial performance. Abdillah et al. found that CFP and CSR disclosures of a company were positively correlated.

Abdillah et al.'s (2020) study proposed empirical evidence that indicated that the media, when considered as a moderation variable, has the potential to enhance the impact of CSR disclosure on the financial performance of corporations. In addition, incorporating media as a moderating variable can enhance the impact of CSR on the financial performance of corporations, concluding that the disclosure of CSR offers valuable information to investors that extends beyond the scope of financial accounting information (Abdullahi et al., 2020). Abdullahi et al. asserted that the impact on market share and sales is advantageous, and it is accompanied by enhanced cost efficiency due to

the presence of legitimacy, hence bolstering the company's reputation. Abdullahi et al. showed how the media can potentially enhance CSR and a company's financial performance. The evidence of the media's role as a moderating variable affirms the legitimacy theory's validity in the study's context.

Hence, to establish trust and legitimacy through CSR, an organization should possess the capability to acknowledge and respond to stakeholders' expectations while engaging in successful stakeholder interactions. Trust and legitimacy through CSR as asserted by Cho et al. (2019) hinges on the active involvement of the government in CSR. Cho et al. argued that the government should offer fiscal incentives and other forms of stimulation to the business sector to foster improvements in their CSR endeavors.

The concept of sustainability, a manifestation of corporate accountability towards stakeholders, is called the triple bottom line (TBL). According to previous research studies (Abdullahi et al., 2020; Kouloukoui et al., 2019; Matuszak & Róāska, 2017; Tunio et al., 2021), the TBL concept refers to a company's ability to maintain its operations for a long time by providing transparent sustainability reports. In support of this claim, Hardiningsih (2020) presented empirical evidence that sustainability reports are effective at communicating data on the economic, environmental, labor, product, and social practices of an organization. Hardiningsih's research provided evidence in favor of the assertion that implementing sustainable practices by publicly traded corporations has a role in generating market value. Therefore, it can be inferred that there exists a positive correlation between the degree of transparency in a company's immediate activities and the possibility of enhanced profitability and total value.

Cho et al. (2019) used correlation and regression analysis to investigate the association between ROA and Tobin's Q as measures of business value. Cho et al. study's findings indicated a statistically significant positive correlation between the performance of CSR, profitability, and firm value. Cho et al. utilized the Korea Economic Justice Institute (KEJI) index from 2015 as a proxy to measure CSR performance. Cho et al. found that the findings aligned with other research that demonstrated a positive correlation between CSR and financial performance. Cho et al. suggested that their findings indicated a statistically significant positive correlation solely based on social contribution. In addition, Cho et al. findings demonstrated a direct relationship between soundness and social impact, as well as Tobin's Q, a commonly employed metric for assessing the value of a company.

According to Okafor et al. (2021), companies can improve operational efficiency by ensuring stakeholders understand the positive contributions to CSR outlined in sustainability reports. Dmytriyev et al. (2021), asserted that adopting robust CSR policies can positively impact a company's financial performance, as posited by stakeholder theory. Dmytriyev et al. stated that when a company releases its CSR initiatives, which encompass favorable and unfavorable actions, stakeholders are more inclined to cultivate trust and endorse the enterprise.

Suttipun et al. (2021) reported that prior research demonstrated diverse outcomes regarding the impact of CSR on financial performance. These outcomes as asserted by Suttipun et al. (2021) and Shin et al., (2023) encompass positive and negative relationships, or no association, depending on the specific factors being analyzed. Shin et

al. (2023), concluded that there is still uncertainty surrounding the connection between ESG performance and financial performance. The effects depend on the specific factors being analyzed.

The relationship between VSR activities and CFP involves the evaluation of market entities by considering ESG concerns. Kahloul et al. (2022) argued that stakeholders desire a company's economic success to align with its social and environmental considerations throughout its operational activities. Kahloul et al. proposed that firms have the potential to utilize CSR as a means to tackle concerns related to shareholder governance. Kahloul et al. claimed that the significance of the board of directors as a governance structure for corporate executives is widely acknowledged, as it seeks to establish a balance of power between governing and controlling entities.

Shin et al. (2023) employed legitimacy theory and the national business system framework to examine data from 48 countries for 17 years in their study. The aim was to examine how a country's culture affects the connection between a company's governance ESG performance and its financial performance, considering it an external contingency element. Shin et al. proposed that disparities in stakeholder evaluations and recognition of a company's ESG performance across various nations lead to divergent financial benefits that are linked to adopting ESG measures. The variation Shin et al. addressed is ascribed to the cultural attributes of each nation. Shin et al. observed that a country that strongly emphasizes individualism or values shows a stronger connection between a company's ESG performance and its financial performance. Shin et al. argument suggested that

multinational corporations, which handle the challenges of managing multiple stakeholders' demands in different countries and operating within different cultural contexts, face potential consequences.

Ben Saad and Belkacem (2022) examined the impact of CSR on CFP through the utilization of structural equation modeling and a difference-in-differences methodology. In their investigation Ben Saad and Belkacem concentrated on a dataset of nonfinancial listed companies in France, covering the period from 2006 to 2017. Ben Saad and Belkacem explored the impact of compulsory CSR reporting on financial performance and the influence of capital structure choices. Ben Saad and Belkacem formulated three hypotheses. Ben Saad and Belkacem hypothesized that CSR positively influences CFP, secondly, that companies observe a rise in CFP after being required to disclose their CSR initiatives, and thirdly that CSR impacts CFP via the capital structure channel.

It is worth mentioning that the mandate does not necessitate enterprises to set aside dedicated funds for CSR initiatives. The results suggested a strong link between CSR and financial performance, enhancing profitability. Nevertheless, the paper presents a compelling argument and provides evidence that the capital structure channel is crucial in moderating the relationship between CSR and CFP. The study conducted by Ben Saad and Belkacem (2022) demonstrated that CSR exerts a substantial influence on the reputation of companies, thereby enhancing their competitive advantage (Freeman, 1984). Therefore, it could be suggested that this competitive advantage enhances the financial performance of the organization CFP.

Hence, organizations utilize sustainability reporting to effectively convey information about their nonfinancial impacts to stakeholders. The aviation industry has implemented a prevailing business strategy that has emerged as a substantial contributor to global warming. The scholarly investigation into sustainability reporting within the aerospace industry has recently begun, as demonstrated by research conducted by Zieba and Johansson (2022). Zieba and Johansson conducted a comprehensive analysis of existing literature to investigate the practice of sustainability reporting in airline service recovery. Zieba and Johansson's objective was to consolidate current academic research and pinpoint reoccurring problems and areas of limited understanding, which were utilized as evidence to substantiate their conclusions. According to Zieba and Johansson, the lack of a unified policy and a shared understanding of identifying and assessing sustainability throughout the industry contributed to the inconsistency in social responsibility practices.

In contrast, firms in the transportation, aerospace, and defense industries have somewhat lower levels of CSR communication according to Vitolla et al. (2023). Vitolla et al. conducted a study revealing that automotive businesses have higher levels of circular economy transparency, particularly concerning CSR. Vitolla et al. performed a manual content analysis on social responsibility reports obtained from 88 multinational firms to assess the CSR level using a regression model to analyze the impact of firm characteristics. The findings suggested a positive correlation between CSR levels and firm size, financial leverage, and profitability and that CSR has significant practical

consequences for firms and politicians as argued by Roberts et al. (2022) and Vitolla et al. (2023).

Knowing a firm's path toward CSR is crucial to understanding the rationale behind stakeholders' pursuit of future disclosure obligations and the potential alternative uses of the disclosed information beyond traditional financial reasons. According to Zieba and Johansson (2022), there is a possibility that this may result in a misconception of the tangible acts carried out by airlines, through promotional advertising tactics that they employ to clarify their operations. Conducting comprehensive research that investigates stakeholder views and disclosure quality can greatly help academia and other stakeholders in the aerospace sector. Zieba and Johansson found that conducting such research would be a valuable contribution to the industry's endeavors to improve its social responsibility. Thus, corporate environmental sustainability reporting (CESR) enables firms to communicate their environmental performance actively and transparently, facilitating effective stakeholder engagement.

Miklosik et al. (2021) conducted an analysis that specifically examined how companies listed on the Australian Stock Exchange communicate information on environmental sustainability in their annual reports. A mixed-approaches strategy was employed in this study, integrating quantitative and qualitative content analysis methods, to investigate the potential association between a company's size and the extent of its environmental sustainability reporting efforts. Furthermore, Miklosik et al. investigated the possible correlation between the industry and its degree of reporting on environmental sustainability and the potential association between a firm's share price to reporting on

environmental sustainability. Miklosik et al. findings suggested that there are discrepancies in the manner in which industry sectors and corporations disseminate environmental information and the quantity of corporate environmental sustainability reporting (CESR) is correlated with the size of the company, its industry, and its stock price. Miklosik et al. present study also investigated the insufficient application of GRI keywords as CESR indicators to analyze the resulting theoretical ramifications. Miklosik et al. acknowledged the extensive applicability and dependability of the GRI guidelines and standards under consideration and that the data acquired through the reporting procedure can be employed to refocus attention and aid management in formulating critical judgments regarding CESR.

On the other hand, two studies, conducted by Kowsana and Muraleetharan (2021) and Danisch, C. (2021), produced conflicting findings. The studies investigated several criteria, such as the potential correlation between GRI-compliant sustainability reporting and improved market valuation. Inconsistencies were observed in the empirical research, which suggested a positive association between GRI reporting and market value. It is crucial to acknowledge that the statistical significance of this association exhibited variability across various model parameters. The findings of the research papers offer empirical support for the notion that embracing ethical principles in corporate activities can be regarded as a strategic methodology that augments shareholder value. Their finding is consistent with Freeman's (1984) assertion that providing CSR information to investors offers valuable insights beyond financial accounting. For example, according to the study conducted by Kowsana and Muraleetharan (2021), the results exhibit a range of

outcomes, including positive and negative relationships and statistically insignificant linkages. The variances depended on the particular study design and methodology used. The study's findings may exhibit variability based on the metrics employed for sustainability reporting and financial performance, the sample makeup, the temporal scope under examination, and the incorporation of control factors, as stated by Kowsana and Muraleetharan (2021).

**The Aerospace and Defense Industry and Stakeholder influence**

AmorEsteban et al. (2020) contended that in the aerospace and defense industry, there is a readily accessible aggregate index that is the most optimal for evaluating organizational CSR efforts and stakeholder influence. AmorEsteban et al. utilized the CUR matrix to evaluate the consistency of the several aggregated indicators utilized by researchers in examining two significant publicly traded corporations working within the aerospace and defense sector. AmorEsteban et al. (2020) found that the CUR leverage exhibits greater consistency in measuring multiple aggregate CSR indicators. A correlational investigation by AmorEsteban et al. provided additional evidence to support this coherence. AmorEsteban et al. asserted that one can confidently declare that using composite indicators within academic contexts does not create any form of bias when evaluating CSR procedures.

Moreover, the CUR study presented proof that firms adjust to the pressures and requirements of stakeholders in different areas of interest, which differ depending on national and sectoral circumstances (Amor Esteban et al., 2020). Although there have been numerous targeted studies, the aerospace and defense sector in the global economy

has received limited attention, especially in analyzing aerospace stakeholders and their effects on social responsibility (AmorEsteban et al., 2020; Zieba & Johansson, 2022). According to Gangi et al. (2022), the aerospace industry is encountering novel issues in sustainable development. Gangi et al. explored the determinants of corporate environmental responsibility (CER) engagement among aerospace companies and the resulting outcomes. Specifically, Gangi et al. examined the influence of board characteristics as a governance mechanism on CER practices and the engagement's effects on accounting-based and market-based CFP measures. Gangi et al. analysis encompassed a cohort of 157 aerospace firms, covering the time frame from 2005 to 2019. The study results suggested that engagement in CER programs is linked to increased profitability and favorable attitudes among financial stakeholders. Gangi et al. employed ROA and ROE as metrics to assess profitability in their analysis. Furthermore, the control variables considered were cash flow from operations, capital expenditure ratio, and the degree to which green product innovation was generated. Gangi et al.'s findings suggested a positive correlation between board qualifications and heightened involvement in CER. From a pragmatic perspective, adopting environmentally sustainable business models might bolster brand reputation, streamline operational efficiency, and foster enhanced financial performance.

## Voluntary Sustainability Reporting and Corporate Financial Performance

### Variables

### Tobin's Q

There are several ways to modify financial indicators related to a company's value to increase immediate profitability. Prior studies have extensively employed Tobin's Q, a widely used metric for evaluating long-term success, to gauge companies' value (Cho et al., 2019; Hardiningsih, 2020; Shaikh, 2022). Because Tobin's Q is a significant departure from the norm, widely regarded as a superior method for evaluating firm value because it effectively measures the degree to which the market price exceeds the book value. For instance, Cho et al. (2019) found that Tobin's Q is a popular metric in studies for examining the relationship between CSR disclosure and business value. In their 2019 study, Cho et al. used regression analysis as a statistical technique to evaluate the connection between different variables to analyze the relationship between CSR and financial performance with the use of metrics such as firm value and profitability. Cho et al. findings were consistent with the findings of prior research that found a positive correlation between CSR and profitability and firm value, confirming that CSR performance has a partial positive correlation with the two metrics.

Tobin's Q as well as ROA are crucial variables often used when assessing profitability and firm value, aligning with prior studies that have established a link between CSR and improved financial performance in organizations. According to Hardiningsih (2020), Tobin's Q is a technique internal and external stakeholders utilize to evaluate market performance based on a singular dimension. Hardiningsih asserted that

the purpose is to track the advancement of a company's growth. Furthermore, Tobin's Q serves as a helpful indicator for assessing the success of a corporation, as it serves as a proxy for its market value and reflects its potential earnings. Hardiningsih found that a corporation will incur costs to facilitate its expansion and achieve profitability when its valuation exceeds previous iterations. Hardiningsih claimed using Tobin's Q ratio enables individuals to evaluate the potential expansion of investment returns, the progression of stock values, and the managerial proficiency in managing business assets.

**Stakeholder Influence (STAKE)**

Assessing the ROI of stakeholder influence endeavors is essential for measuring the effectiveness of these initiatives. This involves thoroughly evaluating the expenses and benefits associated with stakeholder activities, including allocating resources like time and money, the outcomes and outputs achieved, mitigating, or avoiding risks and issues, and identifying and realizing opportunities and improvements. Drobyazko et al. (2019) stated that a strong return on investment (ROI) in stakeholder engagement suggests that stakeholders' efforts are valuable and beneficial. On the other hand, a low engagement ROI indicates that these efforts may not be generating profits.

**Return on Asset (ROA)**

Return on assets is widely recognized and commonly used to assess a company's profitability. Numerous studies have explored the link between financial success and sustainability reporting. These studies feature the research conducted by Aifuwa (2020), Latifah et al. (2019), and Lu et al. (2022). The return on assets (ROA) metric enables one

to measure a company's profitability by considering its pre-tax expenses and underlying assets.

**Global Reporting Initiative (GRI)**

According to the requirements set forth by the Global Reporting Initiative (GRI G4), it is anticipated that the quality of sustainability reports will be enhanced due to increased adherence to the prescribed specifications. The adoption of GRI standards as a standard for sustainability reports was driven by the acknowledgment of GRI's prominence as a prominent framework for producing such reports (Akpan & Oluyinka, 2023). Furthermore, the recommendations put out by the study conducted by Miralles-Quiros et al. (2018) are considered trustworthy, broadly relevant, and yield definitive outcomes. Previous research has shown that adopting the GRI framework is linked to a greater likelihood of firms generating sustainability reports of superior quality (Lee et al., 2023). According to Nyantakyi et al. (2023), empirical studies have shown that utilizing the GRI principles as a standard for sustainability reporting leads to enhanced reporting methodology. Furthermore, 66 percent of the top 100 companies that comply with the GRI standards, as reported by KPMG (n.d.), include the GRI criteria in their sustainability reports. The information provided is critical when conducting research in the aerospace and defense industry.

According to previous studies conducted by Liu (2023), the standard of sustainability reports is established by the extent to which an organization adheres to the GRI indicators. Liu asserted that this value functions as the bedrock for the current investigation. Consistent with Liu's conclusions that corporations can achieve an A grade

in their CSR disclosure by incorporating every indicator specified by the GRI. Conversely, a grade of B can be achieved by employing a diminished set of GRI indicators. On the other hand, one can attain a grade of C by utilizing an even more limited subset of these indicators. For example, the evaluative framework suggested by Rosman et al. (2023) was utilized to determine whether corporate sustainability reports adhere to the GRI criteria. Rosman et al. claimed that the magnitude of the discourse varies along the scale, with 0 signifying no mention of the subject and 1 signifying a concise discourse while a score of 2 indicated a more comprehensive presentation, although it is restricted to a limited subset of facilities and depends exclusively on self-comparison metrics. In contrast, the utilization of absolute or relative company-wide measurements enables comparisons with other firms and is represented by a score of 3. Sabrina et al. (2023) made a distinct inquiry where they employed content analysis to evaluate the indicators present in sustainability reports. The data presented in these reports was then categorized into three unique groups based on the uncovered information level. A complete score was then calculated by evaluating all indications and dividing it by the maximum achievable points for a firm, resulting in a percentage. Enabling the result to emphasize the extent of impact that a sustainability report has.

**Environmental, Social, and Governance (ESG)**

The official proposal of the ESG framework was first published 17 years ago. This framework encompassed ESG practices for fostering sustainable growth in the global economy and society (Li et al., 2021). Li et al. exclaimed that ESG is a widely used framework employed by investors to evaluate corporations' ethical and responsible

behavior and their potential for achieving favorable financial outcomes. Li et al. stated that the three main components of ESG are essential in investment research and decision-making. These components serve as a conceptual framework for assessing the sustainable growth of organizations. The fundamental basis for assessing the effectiveness of enterprise ESG activities and the necessity for enterprise ESG disclosure is in the measurement of ESG factors. Various international organizations and nations across the globe have put forth proposals for sustainable development action plans, such as ESG, to establish a robust and sustainable framework for comprehensive development. These initiatives directly respond to the escalating challenges associated with sustainable development in the environment, society, and the financial market. In addition, Li et al. examined ESG investment, the importance of ESG metrics, and the impact of the ESG score on assessing corporate sustainability performance. Including, the origins and significance of the term ESG in the context of investment, and the significance and role of ESG factors in the process of financial decision-making. Moreover, it is worth noting that ESG has emerged as a derivative of CSR. Consequently, ESG and CSR according to Li et al. are sometimes used interchangeably to denote the concept of sustainability reporting.

Stakeholder theory posits that organizations that effectively address the ESG demands of stakeholders tend to outperform irresponsible enterprises, as indicated by ESG research. When considering ESG factors, a viable approach for assessing CSR policies is quantifying corporate social responsibility insurance mechanisms. The KLD

database is widely utilized and is recognized for its comprehensive coverage of sustainable development data (Tarmuji et al., 2016; Li et al., 2021).

Previous studies on ESG corporate social responsibility, company commitment to social good, measuring CSR performance, and the relationship between social responsibility and financial success have all used the GRI database (Li et al., 2021). In the KLD database, "1" indicates the presence of screening (standard), while "0" indicates its absence (Li et al., 2021).

**Firm Growth (FG)**

Luo and Tang (2023) hypothesized that establishing sustainability reports can be facilitated by growth, as organizations with more development prospects can leverage information transparency to mitigate information asymmetry and agency costs. Sustainability reporting might potentially contribute to the growth of firms, thereby serving as a source of inspiration. Companies with more significant potential for growth are more inclined to provide sustainability reports to enhance investors' trust and reap advantages (Nastiti et al., 2019).

**Firm Size (FS)**

According to empirical studies in corporate finance, firm size is a crucial and essential aspect of a firm (Kalbuana et al., 2020). Logically, larger organizations are more inclined to utilize sustainability reporting to communicate their sustainability strategies to stakeholders interested in and affected by their activities. The requirement for the legitimacy advantages that can result from publishing sustainability reports increases with the company's size according to Xia et al. (2023b). The primary factor affecting the

independent and dependent variables at once is typically the business size. Due to this, Kalbuana et al. (2020) claimed that firm size, CSR, and performance are tightly associated. In agreement with Opeyemi (2019) and Kalbuana et al., the natural logarithm of total assets will be utilized to calculate the firm size.

## Conceptual Framework

The conceptual framework is commonly seen as a symbolic representation of the interconnections among the variables, as established in the literature review. The conceptual framework, as described by Salkin et al. (2018), identifies the core concepts, theories, expectations, beliefs, and assumptions underlying the research. The current study's conceptual foundation is based on how the independent and dependent variables interact, as stated in the introduction, validated by prior research. The conceptual framework will elucidate the direct impact of stakeholder influence on the correlation between corporate financial performance and sustainability reporting within the aerospace and defense industry. The firm's financial success is influenced by two dependent variables, namely return on assets and Tobin's Q. The independent factors in this study essentially encompass stakeholder influence (STAKE), ROI, GRI, and firm size and growth. These variables include both long-term and short-term equity.

## Summary and Conclusions

The empirical findings from the current literature review suggested that the company's profitability, growth, size, ROI, GRI rating, and ESG score, among other factors, are essential variables that affect the corporate financial performance of the aerospace and defense industry. Furthermore, many theories and models have been

examined to provide a rationale for the impact of stakeholder influence on the correlation between corporate financial success and sustainability reporting within the aerospace and defense industry. The literature established and emphasized the negative, positive, and inconstancy among scholars in the relationship between corporate financial performance and sustainability reporting. Additionally, whereas large organizations are perceived as having greater sustainability transparency, this transparency is unrelated to their financial behavior (Alcaide González et al., 2020). Alcaide González et al. questioned the apparent benefits of consistent behavior and undeniable superiority over other environmental positions. They highlight that the market values visibility and responsiveness to environmental challenges, as evidenced by their environmental disclosure (Amores-Salvadó et al., 2022), which might cause doubt on the ostensible advantages of consistency in conduct and undisputed dominance over other environmental views.

Amores-Salvadó et al. (2022) argued that specific corporate environmental postures have managerial consequences based on environmental accomplishments and communication, describing their nature and critical implications for company market performance. For example, decision-makers want to consider the ideal board size for firms with various specialties, a cost-benefit analysis for frequent board meetings, and value addition to the time being watched. Thus, disclosing ESG scores will considerably improve corporate moral conduct and the long-term viability of shareholder wealth.

The literature review provided in this chapter explored the relative conceptual frameworks and significant themes related to sustainability, sustainability reporting, stakeholder influence, and corporate financial performance in previous studies. Then,

sustainability reports and the relationship between voluntary sustainability reports and corporate financial performance and the associated variables were expanded to further explain the sustainability financial performance connection.

Although sustainability is gaining acceptance, the relationship between sustainability practices and financial performance is unclear. By its very nature, corporate social responsibility is a multifaceted process that includes multiple perspectives. Organizational legitimacy and stakeholder pressure were also discussed as they are essential areas of study for researchers to understand better how sustainability is related to financial results. The need to better understand the connection between sustainability practices and economic results and the ancillary elements that underpin these relationships was also discussed. In addition, the conversation encompassed the theoretical framework, the variables commonly linked to sustainability reporting and corporate financial performance, the aerospace and defense sector, and the impact of stakeholders.

Several studies have shown the interconnectedness between diverse stakeholder groups, the sustainability strategies of organizations, and how companies can impact the environment and society (see Appendix A) for a full summary of previous studies.

However, none of the reviewed studies investigated the role of stakeholder influence as a moderator or mediation variable to financial performance, particularly within the aerospace and defense industry. This lack of research has resulted in a gap in the existing literature, prompting an inquiry into the relationship between stakeholders' influence on voluntary sustainability reporting and corporate financial performance.

Thus, the current study examined stakeholder influence over the aerospace and defense industries' sustainability reporting and corporate financial performance.

# Chapter 3: Research Method

## Introduction

Scholars continue to engage in academic debate over the necessity of using a socially responsible approach to determine a company's future trajectory. Scholarly research has extensively explored the financial implications of CSR and the possible economic benefits of sustainability measures (Ben Saad & Belkacem, 2022). According to Almashhadani (2021), further examination of the relationship between sustainability and stakeholder satisfaction is necessary to address stakeholders' concerns effectively and justify allocating resources towards sustainability projects. Almashhadani argued that additional research is needed to investigate additional variables that may act as moderators or mediators to examine the influence of ethical attributes on the relationship between CFP and CSR.

The subject matter has garnered growing importance in scholarly investigations as corporate leaders perceive sustainability as a crucial determinant for attaining a competitive edge, fostering expansion, and ensuring enduring prosperity (Ben Saad & Belkacem, 2022). According to Freeman (1984), CSR significantly impacts a business's reputation, resulting in a competitive advantage that improves CSR. Consequently, the significance of sustainability initiatives and their correlation with financial performance has emerged as a crucial concern for corporate executives and stakeholders according to Blake and Gano-an (2020). Ismail Hussien et al. (2019) asserted that there is an increasing need for a more comprehensive comprehension of how organizational leaders

may augment a company's worth and long-term sustainability by implementing sustainability initiatives.

This chapter provides an overview of the research methods employed to conduct the study, achieve the stated objectives, answer the research question, and test the hypothesis. The chapter encompasses various components that are integral to the research project, including the research methodology and design, the selection of the population and sample, the utilization of appropriate instrumentation, the establishment of operational definitions for variables, the delineation of study methods, the collecting and analysis of data, the identification of assumptions, the recognition of limitations and delimitations, the provision of ethical guarantees, and a concise summary of the chapter's content.

The study will investigate the potential correlation between VSR and CFP, specifically in the aerospace and defense industry. The study will attempt to control variables, including firm size, growth, and losses from the previous year, as it investigates the impact of stakeholders on this correlation.

The chosen approach for this investigation and exploring the study and research topic was a quantitative research technique. Bell et al. (2022) posited that there are multiple conceptions regarding the manifestation of reality. By gathering and examining empirical data, it is possible to operationalize these theoretical frameworks to clarify the fundamental elements of the phenomenon under consideration. This methodology is predicated on deductive reasoning, which establishes a measurable correlation between theory and practice and verifies the validity of a hypothesis. The hypothesis will provide

corroborating information for the collection of data and will be subjected to empirical investigation (Bell et al., 2022; Mugizi, 2019). The deductive approach exhibits a linear methodology, although it establishes connections over the entirety of the research endeavor when accounting for relationships (Bell et al., 2022). Bell et al. asserted that positivism constitutes an integral element of the quantitative research paradigm, advocating for applying scientific methodologies in research. In quantitative research, objectivism is typically favored as it aims to minimize the potential influence of researchers on the collected data.

A conceptual framework was developed using the IV of the research to clarify a specific hypothesis. The research comprises four discrete, autonomous variables, specifically: (a) GRI-2019, (b) GRI-2020, (c) GRI-2021, and (d) GRI-2022. The research contains two dependent variables, specifically return on assets (ROA) and Tobin's Q. The study incorporated four control variables, specifically, (a) the firm's size, (b) the firm's growth rate, (c) return on investment (ROI), and (d) stakeholder influence (STAKE). The covariates STAKE and ROA will be employed to evaluate the causal impacts on the response variable. The study also incorporated a moderating and mediating variable, return on investment ROI.

The single moderation and mediating variable, ROI, is used to measure stakeholders' influence on CFP. According to the assertions of Liu et al. (2022), financial indicators such as profit, market share, return on assets, return on equity, and return on investment can be employed to evaluate economic performance. The investigation will

additionally examine if a company incurred a financial deficit in the preceding fiscal year.

The conceptual framework utilized in the study adopts a single moderator model 1 and a single mediating model 4 with covariates (see Figure 1 and Figure 2). The approach provides a comprehensive understanding of how the IVs exert influence on the moderating and mediating variable ROI, thereby affecting the dependent variable CFP through both direct and indirect pathways (Mugizi, 2019). Mugizi (2019) argued that to offer a comprehensive explanation for the cause, it is necessary to ensure that two conditions have been met. A crucial need is that causality demonstrates a unidirectional association.

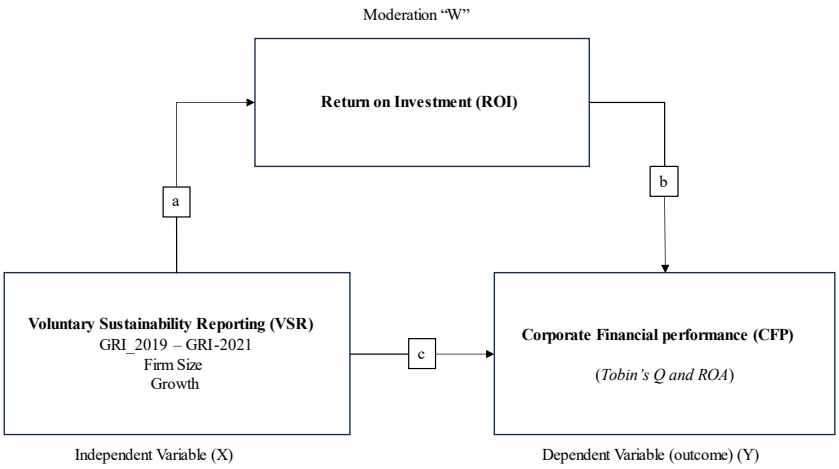
To demonstrate a causal relationship, it is necessary for a modification in one stage to lead to a subsequent alteration in the subsequent phase. Thus, the second criterion necessitates the inclusion of an operator that establishes a connection between the independent variables and the dependent variable (Mohajan, 2020). To elucidate the modus operandi, four conditions must be satisfied. The initial occurrence of X must precede Y. Secondly, the condition suggests a causal relationship exists between moderator ROI and Y. Thirdly, the moderator serves the identical purpose as X (Mugizi, 2019). Thus, the research will incorporate two control variables “covariates,” STAKE and ROA, and one moderator and mediating variable ROI, within the conceptual framework to mitigate the impact between the independent and dependent variables, using Hayes PROCESS Model 1 and 4.

Figures 1 and 2 show conceptual frameworks that illustrate a singular moderator Model 1 and a mediating Model 4 with covariates. These theoretical frameworks integrate an additional variable into the relationship between the IV "X" and the dependent variable "Y." These models represent the causal sequence, where the IV influences the moderator variable (ROI), and the ROI subsequently influences the DV. Similarly, In the regression model, statistical control is implemented on a single independent variable (*X*), a single mediator (*M*), an outcome variable (*Y*), and mediator covariates ($C^1$ and $C^2$). In other words, the direction of causality is represented as $X \rightarrow M \rightarrow Y$ and $X \rightarrow W \rightarrow Y$. Mugizi (2019) asserted that including a mediating and moderating variable in research design is crucial as it serves as an intervention to influence behavior. The framework illustrates the influence of the IV on the mediating or moderating effect, contributing to the dependent variable's influence.

Bouzakhem et al. (2023) and Yadav et al. (2023) found that incorporating a moderator variable is a practical approach to enhance business research design, leading to more genuine and accurate outcomes. The moderating variable, frequently referred to as the moderator seeks to determine the extent and direction of the relationship. A moderator refers to a variable that possesses an autonomous impact on the magnitude, orientation, or presence of a connection between variables, whereas a mediating variable (or mediator) elucidates the mechanism by which two variables are interconnected according to MacKinnon (2011) and Mugizi (2019).

## Figure 1

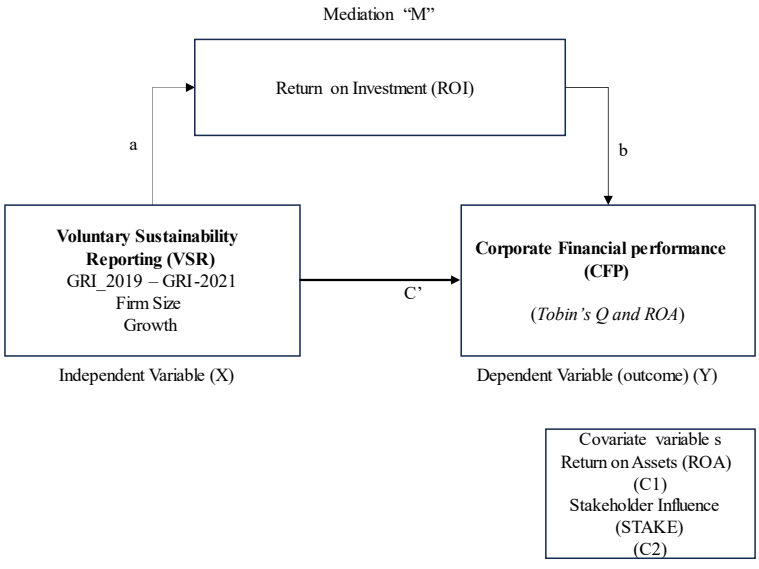
*Conceptual Framework Hayes PROCESS Model 1 (Simple Moderation)*




*Moderation model showing the moderating effect of Return on Investment – Model 1*

## Figure 2

*Conceptual Framework Hayes PROCESS Model 4 (Simple Mediation)*




*Simple Mediation Model 4 with Covariate variables*

## Measurement of variables

**Environmental, Social, and Governance (ESG) Rating**. Several agencies offer ESG ratings, including Sustainalytics, Bloomberg, and Thomson Reuters. This research will utilize the ratings from Bloomberg's ESG framework and Sustainalytics. The ESG ratings encompass the assessment of environmental criteria as a percentage of revenue, as outlined by Minutolo et al. (2019). The Bloomberg ESG database determines how much firm management has integrated ecologically and socially responsible investments or efforts, as measured by environmental and social scores. A rise in ratings from one year to the next can be attributed to improved environmental or social performance. The collection of ESG data will encompass the selected organizations within the aerospace and defense industry for the period spanning from 2019 to 2022. For a description of variables, (see Table 2).

**Table 2**

*Description of Variables*

| Variable | Type of Variable |
|---|---|
| GRI-2019 | Independent variable |
| GRI-2020 | Independent variable |
| GRI-2021 | Independent variable |
| GRI-2022 | Independent variable |
| Firm Size (FS) | Control variable |
| Firm Growth (FG) | Control variable |
| Stakeholder influence (STAKE) | Control variable |
| Return on Assets (ROA) | Dependent variable |
| Tobin's Q (TOBINQ) | Dependent variable |
| Return on Investment (ROI) | Mediation "W" and Moderator "M" variables |
| *Note.* The ROA and STAKE are used as covariates in the study. The ROI is used in both Hayes PROCESS Models "Model 1 and Model 4." | |

The primary objective of this research is to examine financial performance over four years. The chosen metric for this evaluation is ROA, as it is deemed suitable for assessing economic performance in the short term. Tobin's Q is a quantitative measure employed to evaluate the value of a company, with a specific emphasis on the market price that exceeds the book value. As a result, Tobin's Q has been widely utilized in previous research to assess the long-term performance of firms and is widely regarded as a suitable metric for measuring business value.

The profitability financial performance indicator, ROA, will be determined by the formula: ROA = (operating profit plus net income) divided by total assets. Tobin's Q is a

financial metric that can be computed using the following formula: Tobin's Q = market value evaluation (MVE) plus preference shares (PS) plus Debt)/total assets (TA) (Al-Slehat et al., 2020). According to Al-Slehat et al. determining a company's market value, known as MVE, involves multiplying the number of shares by the share price. Additionally, Al-Slehat et al. claimed that the liquidation value of a firm's preference shares is represented as PS. Al-Slehat et al. asserted that debt combines a company's long-term and short-term liabilities, subtracted from its current assets. Total assets (TA) represent the whole value of a company's assets.

A business firm's success is measured using the economic theory of investment behavior, commonly called Tobin's Q (Al-Slehat et al., 2020). According to Al-Slehat et al. the ratio, denoted as "Q" in financial literature, is the comparison between the market value of the existing shares (share capital) and the replacement cost of all tangible assets. Tobin's Q is a frequently employed measure for assessing operational performance, as it reflects the extent to which shareholders influence managers to generate value on their behalf, thereby impacting Tobin's Q, as claimed by Al-Slehat et al. The computation of Tobin's Q ratio involves the division of the market value of a security by the cost incurred in substituting the security inside the market (Al-Slehat et al., 2020; Ishaq, 2021). Market value, or market capitalization, is determined by dividing the current stock price by the total number of active outstanding shares in the market according to Al-Slehat et al. (2020) and Ishaq (2021). According to Al-Slehat et al., investors ascribe value creation capability to firms with a "Q" value exceeding one, as opposed to firms with a Q value falling below one.

The financial variables of ROA and Tobin's Q will exhibit a lag of four years, encompassing the ratio differences between 2019 and 2020, 2020 and 2021, and 2021 and 2022. Kim et al. (2019b), stated that it is necessary to conduct a comprehensive evaluation of financial outcomes across a broader time frame. This is particularly important for sustainability investments, as they are more likely to exhibit longer time lags regarding their impact on economic results. The financial data about each firm listed in the S&P 500 industry index will be collected and afterward juxtaposed with the electronic data collection, analysis, and retrieval system (EDGAR) of the Securities and Exchange Commission (SEC) database, which is within the purview of the SEC. The key indicators used to evaluate financial performance are the ROA and Tobin's Q.

This quantitative research aims to analyze the relationship between voluntary sustainability reporting (VSR) and corporate financial performance (CFP) in the aerospace and defense sector. It will specifically focus on the influence of stakeholders (STAKE) on this correlation. This study also aims to account for the potential effects of firm size, firm growth, and whether the firm experienced a loss in the previous year. The research will employ regression analysis to ascertain the correlation among the variables. Subsequently, separate multiple regression procedures will be conducted for ROA and Tobin's Q, the two dependent variables, to investigate the presence of a predictive trend between the variables.

This study addresses the research gap concerning the potential association between VSR and CFP on STAKE within the aerospace and defense industry. Furthermore, this study aims to include factors such as the size of the firm, its growth

rate, and whether the firm had a loss in the preceding year, aforementioned. This research endeavor investigates the effects of sustainability performance over four consecutive years. This study will conduct a comparative analysis to assess the company's ESG performance change from 2019 to 2022 while examining the corresponding change in its financial performance over the same time frame. The study's reporting years necessitate providing ESG, GRI, and financial data for each organization included in the sample. The assessment of ESG data and GRI performance is contingent upon a corporation's publication of such information. Similar to the previously described example, it is impossible to estimate the financial success in 2022 using only financial data from 2019.

Thus, this chapter describes the research methodology, demographics, and samples. This chapter provides operational definitions for the variables, study protocols, and data collection and analysis methodologies. The research will employ a quantitative approach, utilizing regression analysis, to examine a statistically significant association between the independent and dependent variables. This analysis will be conducted while accounting for the influence of firm size, growth, and financial losses in the preceding year (Somer, 2022). The archival data collection will encompass the yearly financial statements of the aerospace and defense industry from the S&P 500 industry index database, the Worldwide Reporting Initiative (GRI), Bloomberg's ESG platform, and Sustainalytics, a prominent provider of real-time and historical financial data worldwide.

**Research Methodology and Design**

In this study, a quantitative research methodology will be utilized. According to Rahi et al. (2021), quantitative approaches encompass the systematic examination and

exploration of conditions or events using statistical analysis to discover causal relationships among numerical data. Sileyew (2019), stated that quantitative research primarily involves quantifying and evaluating variables to identify correlations. Sileyew asserted that quantitative methods establish links by gathering numerical data and using mathematical research methods, as asserted. Similarly, Al-Ababneh (2020) stated that quantitative methods use statistics to test hypotheses because quantitative methods evaluate dataset correlation hypotheses. Replicability is an indication of a well-designed study. If duplicated, the results are more credible. Quantitative research is organized with pre-established hypotheses and variables (Vu, 2021). A quantitative study's data is utilized to prove or disprove theories. This study will use factual data from reliable sources rather than interpreting what is unknown, explainable, or verifiable.

Utilizing a qualitative technique would prove inadequate in addressing the research challenge due to the necessity of hypothesis testing, which the availability of appropriate data can facilitate. According to Rahman (2020), one significant drawback of qualitative research is the absence of statistical characterization. Qualitative analysis is an approach to study based on subjective viewpoints, wherein the data collected is not quantitatively assessed. In situations necessitating the examination of numerical data, a quantitative methodology is essential. Another drawback of a qualitative approach is the potential reliance on subjective perceptions and personal experiences instead of objective facts when gathering data (Rahman, 2020).

The perspectives of individuals can generate a diverse range of distinct data points, which may or may not have direct relevance to the subject of investigation.

Individual subjective reactions can also yield information that necessitates categorization and extrapolation, potentially yielding inaccurate outcomes due to the researcher's viewpoint and preconceived notions. Rahman (2020) argued that the challenge lies in establishing the alignment between the gathered data in quantitative research and the research aim, as personal viewpoints often serve as the underlying basis for such data. It is common for individuals to selectively remember events in a manner that aligns with their desired recollection, even if it deviates from complete accuracy. The inherent inclination to recall positive thoughts and memories might challenge researchers in establishing their findings' credibility (Rahman, 2020; Gray et al., 2020).

One limitation of employing a mixed method design is the potential loss of the open-ended nature inherent in qualitative research while attempting to quantify qualitative data. The occurrence of the information coding process can be attributed to its complex nature (Dawadi et al., 2021). Furthermore, using a mixed-method approach presents certain statistical limitations in measuring qualitative data that has been quantified. Rahman (2020) stated that this may result in the researcher's inability to attain adequate statistical power to substantiate the research findings. Another issue associated with a mixed-method design is upholding research transparency when integrating qualitative and quantitative elements inside a single study (Plastow, 2016). The mixed method approach frequently involves a complex and time-consuming iterative process, including the cyclical movement between gathering data and generating inferences. Successfully executing this methodology requires careful and thorough documentation at

each stage, which presents challenges in accurately capturing the necessary information, especially when generating reports, according to Plastow (2016).

Thus, the completion period of mixed-method studies is generally more extended than that of qualitative or quantitative research. Data analysis requires a comprehensive understanding and proficiency in qualitative and quantitative methodologies, rendering it challenging. Moreover, mixed-method research investigations may necessitate additional time due to the inherent difficulty in quantifying qualitative data. Implementing specific documentation procedures for each research type is of utmost importance, as shifting from a qualitative narrative approach to a quantitative computational approach may present some difficulties.

The present study will utilize a quantitative methodology to investigate the presence of a statistically significant relationship between the independent variables, GRI-2019, GRI-2020, GRI-2021, GRI-2022, ROI, stakeholders influence (STAKE), firm size, firm growth, and the dependent variables ROA and Tobin's Q. ROI is used as the moderating and mediating variable. The dependent variables in this study are return on assets (ROA) and Tobin's Q. This study will acquire data related to the independent variables from Bloomberg's ESG and Sustainalytics database. Simultaneously, the financial data ROA and Tobin's Q will be obtained from publicly available sources, including corporate websites, the S&P 500, and the SEC EDGAR database. The research will incorporate controls to account for the impact of firm size, growth, and pre-existing losses from the prior year.

The inclusion of mediation and moderation variables serves to acknowledge the multifaceted nature of behavior. In this context, the dependent variable is denoted as Y, representing the outcome of interest. The independent variable is represented by X, the factor the researcher manipulates or controls. The coefficient of determination (ROI) commonly represented as "Z" serves as the moderator variable that impacts the association between the independent variable (X) and the dependent variable (Y). According to MacKinnon (2011), the relationship between the moderator variable (Z) and the independent variable (X) is represented as XZ. The mediation variable ROI is used when a researcher wants to understand, clarify, or investigate how variable X influences Y. MacKinnon asserted that the mediator variable, represented as "M," is positioned within a causal link between X and Y. It functions as the conduit through which X influences Y.

To gain a deeper understanding of the impact of sustainable practices on company profitability, it is possible to examine various scenarios. Quantitative methods enhance the study's external validity and possibility of reproducibility due to the data's accessibility. The study will adhere to rigorous procedures and guidelines to eliminate personal judgments, intuitions, and conjectures. This enhances the replication of the study according to Amin et al. (2020). This study will employ quantitative research methods and utilize publicly accessible data, making the involvement of individuals optional. This mitigated biases in data collection. According to Amin et al., the absence of researcher-student engagement ensures that the participants' preferences, prejudices, and opinions do not influence the course of the research. Statistical procedures serve as the

fundamental basis for the development of hypotheses, the provision of explanations, and the derivation of conclusions about the data. In other words, the integrity of the research will not be compromised.

Almeyda and Darmansya (2019) asserted that scholars often employ the Bloomberg ESG database because of its reputation for being reliable and credible. The correlational design is an appropriate method for examining potential connections between measurable independent factors, such as GRI-2019, GRI-2020, GRI-2021, GRI-2022, STAKE, firm size, and firm growth, and independent moderation and dependent financial variables, such as ROI, ROA, and Tobin's Q. This methodology facilitates the analysis of the magnitude and direction of the association between these factors, as well as the assessment of the presence and magnitude of a relationship between VSR and CFP outcomes.

The determinants of a relationship are contingent upon the temporal relationship between the variables under analysis. It is imperative to comprehend and substantiate the occurrence of the primary independent variables before the outcome variable, specifically the financial outcomes (Aras et al., 2010; Wu et al., 2020). Thus, an analysis will assess the potential financial impacts of sustainability performance, considering a time gap of one, two, three, and four years between investing in sustainability and observing financial gains. This modification will consider the comparative analysis between long-term sustainability practices and short-term financial rewards.

Scholars have recently developed a keen interest in ESG. Okafor et al. (2021) examined the impact of corporate social responsibility (CSR) on the financial

performance of technology companies in the United States. The researchers employed the Bloomberg ESG database as a surrogate measure to assess the extent of company engagement in socially responsible initiatives. Similarly, Nitlarp and Mayakul (2023) examined the correlation between corporate social responsibility (CSR) and the financial performance of energy firms. The researchers employed a regression model to assess CSR performance and utilized the Bloomberg ESG database as a proxy. Comparably, Oprean-Stan et al. (2020) investigated the correlation between sustainability and economic prosperity using ESG data.

**Population and Sample**

The scope of this study encompasses the firms operating within the aerospace and defense industry included in the S&P 500 and Stockanalysis.com databases. Stockanalysis is a publicly available platform that functions as a dependable provider of stock data and information according to rigorous requirements of data accuracy that hold significant significance for this research. The focus will be on the aerospace and defense industry, particularly those companies that are listed in the S&P 500 and Stockanalysis.com databases. Stockanalysis, a free website, offers users up-to-date stock information and statistics. The sample will include all the specified aerospace and defense enterprises. However, the company's financial and ESG data must be readily accessible to be eligible for inclusion in the sample. Thus, the potential reduction of the projective sample of 150 aerospace and defense companies with financial data available for comparative years may depend on the accessibility of financial data and ESG ratings. This reduction is necessary to study the potential relationship between VSR and CFP.

The G*Power software was employed to determine the necessary sample size, effect size, significance level, and power level as a substitute for including all aerospace and defense industries (Kang, 2021). The sample size according to Kang is determined using the software choices F test and linear regression - fixed model R square deviation from zero. This process will involve the consideration of an effect size, a significance level, and a power level. As the magnitude of power increases, there should be a corresponding increase in the sample size. According to G*Power's guidelines for determining sample sizes, it may be necessary to reduce the sample to include only firms with financial and ESG data available for the years being compared (Kang, 2021).

Using data obtained from the Morningstar Sustainalytics ESG database, also known as Sustainalytics, will be implemented. According to Wanday and Ajour El Zein (2022), university academics can get a broader range of environmental, social, and governance (ESG) statistics by subscribing to Sustainalytics' complete data, in addition to the accessible data that is already available. The Sustainalytics database evaluates the ESG risks linked to a firm and examines the efficacy of its risk management approaches in mitigating these risks.

In order to utilize the Bloomberg ESG database for this study, it is imperative to procure a Bloomberg terminal and secure a paid subscription. Wanday and Ajour El Zein (2022) asserted that the ESG ratings offered by Bloomberg assess companies' sustainability performance, encompassing evaluations of environmental aspects such as energy usage, carbon emissions, and resource depletion. The ESG scores offered by the Bloomberg ESG database assess how corporate management has integrated

environmentally or socially responsible investments or activities into their business operations. If the Bloomberg ESG or Sustainalytics databases do not include sufficient information for analysis, the companies under consideration will be excluded from the sample.

The S&P 500 small, medium, and large aerospace and defense organizations (SMLADOs) are considered appropriate samples for analysis due to their significant exposure to ESG risks. This exposure is primarily attributed to their presence in tightly regulated industries subject to intense regulatory scrutiny, as supported by Sharma et al. (2020) and Raghunandan and Rajgopal (2020). This study will select aerospace and defense companies listed on the S&P 500 and Stockanalysis. In comparison, Kooskora et al. (2019), examined the association between financial performance and corporate social responsibility. Data were collected from a random sample of 30 organizations from the Fortune 500 and KLD databases using a multiple regression analysis technique. In a separate investigation of social responsibility, Kooskora et al. chose to employ CSRHub, an extensive repository encompassing data on more than 17,000 companies.

A prerequisite for undertaking the research is the availability of historical data from the company under investigation. Chiek et al. (2021) utilized Bloomberg's ESG database as a data source for their investigation of environmental and social responsibility ratings. The researchers utilized the data to analyze the correlation between ESG disclosure and financial performance.

**Instrumentation**

The data for this study will be gathered from various sources, such as Bloomberg's ESG, S&P 500 industry index, Sustainalytics, and the annual financial reports of the listed firms. The ESG ratings, "VSR" disclosure for GRI reporting, and financial information will be obtained from these sources. The data relating to the control variables will be gathered from the annual financial reports of the listed companies. The data related to the mediating and moderating variable will be collected from the official annual financial reports of the companies selected for this research.

The utilization of survey instruments was deemed unnecessary. Using electronic or internet-based platforms for producing and disseminating firm annual reports has gained significant acceptance in contemporary business practices. In their study, Giannopoulos (2022) investigated the impact of ESG initiatives on the financial performance of Norwegian firms. The researcher selected a sample from the Norwegian Stock Exchange (Oslo Børs) and employed correlation and regression analysis to evaluate the association between the performance of ESG initiatives, as determined by the Norwegian Stock Exchange, and financial indicators. Similarly, the study undertaken by Ahmad et al. (2021) employed data sourced from Thomson Reuters ASSET4 databases and corporate annual reports. Data on sustainability performance indicators was collected using annual reports and company websites. Zhou et al. (2022) employed secondary data from the Wind database and SynTao Green Finance in their study to examine the role of financial performance as a mediating variable. They developed linear regression and mediating effect models to explore the relationship between ESG

performance, financial performance, company market value, and their respective influencing factors.

The data for this study was sourced from Bloomberg ESG and Sustainalytics, which provide corporate sustainability and environmental performance scores. These scores comprise a comprehensive set of environmental and social performance metrics. The necessary data for evaluating the theoretical framework and hypothesis proposed in this research can be sourced from various reliable sources, aforementioned, including company annual reports, Bloomberg's ESG data, the S&P 500 Industry index, Sustainalytics databases, and financial reports of relevant organizations.

## Operational Definitions of Variables

The analysis will utilize a set of seven independent variables, namely GRI-2019, GRI-2020, GRI-2021, GRI_2022, STAKE, firm size, and firm growth, and one moderator and mediation variable return on investment (ROI). The two dependent variables will be return on assets (ROA) and Tobin's Q.

### *Corporate Financial Performance (CFP)*

A company's financial performance indicates its ability to generate revenues and effectively manage its assets, liabilities, and the financial interests of its stockholders and stakeholders. While numerous methodologies exist for assessing financial performance, it is advisable to consider all metrics in aggregate. When evaluating a company's financial performance, it is essential to consider multiple factors such as assets, liabilities, equity, expenses, revenue, and overall profitability. It is quantified using various business formulas that enable users to compute precise information concerning the prospective

efficacy of a company. CFP is the dependent variable that will be calculated using the ROA and Tobin's Q. The measurement level employed in this study is ratio, indicating that the financial measurements under consideration can vary from zero to positive values.

**Firm growth**. Sales growth is evaluated as the average annual growth rate for the preceding four years, serving as a control variable. The formula for calculating sales growth is defined as the difference between the sales for the current year (t) and the sales for the previous year (t-1) divided by the sales for the previous year (t-1) (Kurniawati & Anggraini, 2023). Helfaya et al. (2023) believed that generating sustainability reports can be attributed to growth, as businesses with higher growth prospects might employ information disclosure to mitigate knowledge asymmetry and agency costs. Moreover, the practice of sustainability reporting has the potential to facilitate business expansion, thereby acting as a source of inspiration. Consequently, enterprises with more excellent prospects for expansion are inclined to divulge their sustainability initiatives to secure investors' confidence and reap benefits (Rauf et al., 2020; Respati & Oktaviani, 2022).

**Firm size**. The variable of business size, which is a control variable, will be quantified using the nominal measure of total assets. This study investigates the influence of social limitations on the sustainability performance of organizations, with a specific focus on the variable of company size. Empirical research conducted in corporate finance has established that firm size is a notable and intrinsic characteristic of a firm (Barros, 2022; Shaikh, 2022). The legitimacy of large enterprises is derived from their publication

of sustainability reports that address their growth requirements in terms of scale (Shaikh, 2022).

**Global Reporting Initiative (GRI)**. The GRI includes "Sustainability performance" as an independent indicator, encompassing elements of ESG factors. The GRI functions as the standard by which VSR is assessed. A measurement of a nominal nature will be conducted. To evaluate the adherence of reporting organizations to GRI criteria and analyze the indicators contained in sustainability reports, a grading system known as "content analysis" will be utilized. I intend to employ a simplified grading system akin to the one proposed by Utami (2015), wherein a score of zero signifies the absence of publication for either the GRI or VSR indicators, while a score of one indicates the publication of the GRI indicator.

The determination of a comprehensive score occurs upon evaluating each indicator, which is subsequently divided by the maximum attainable points for a corporation, resulting in a conversion to a percentage. Consequently, it is possible to obtain an outcome that can illustrate the efficacy of the sustainability report. The utilization of grading as a distinct criterion will be discussed afterward. The evaluation of ESG disclosure in sustainability reports will not be conducted individually; instead, the assessment of sustainability disclosure will be conducted based on the year it was published. This implies that all indicators are evaluated on an annual basis. Consequently, the independent variables GRI-2019, GRI-2020, GRI-2021, and GRI-2022 from the study will be employed to characterize the sustainability reporting during the execution of the regression analysis.

**Return on assets (ROA)**. The dependent variable, ROA, evaluates a company's profitability by considering its pre-tax profit and underlying assets. The ROA is a financial metric utilized to evaluate the profitability of a company's assets. It is computed by dividing the operating profit and finance income sum by the total assets (Ahmad et al., 2021; Beck et al., 2018; Kimmel et al., 2018). ROA is a highly recognized and extensively employed term for evaluating a company's profitability. Numerous scholarly investigations have employed the ROA metric to examine the correlation between financial success and sustainability reporting. These studies include the works of Beck et al. (2018), Utami (2015), and Zhou et al. (2022).

**Return on investment (ROI)**. In contrast to initial impressions, moderation, and mediation are separate processes conceived in unique ways. The mediation model suggests that X directly and indirectly influences Y through a single intermediary variable, M, which is causally positioned between X and Y (Bouzakhem et al., 2023). Bouzakhem et al. claimed that the mediating and moderating variable, also known as the ROI in this study, is one factor that can affect the relationship between a dependent variable and an independent variable. Investigating the correlation between an independent and dependent variable is a subject of significance within the field of regression analysis. The return-on-investment ratio is commonly referred to as ROI. The benchmarking method in question is widely employed due to its ability to assess a company's return on investment in a manner that facilitates comparison with other institutions (Wang et al., 2022).

**Stakeholder influence (STAKE)**. Integrating CFP and VSR gives rise to the covariate variable, stakeholder influence (STAKE), measured by a company's involvement in foreign sales. The measurement level can be classified as nominal. A corporation will receive a value of plus 1 if it mentions foreign sales in its financial statement; otherwise, a zero value will be assigned. When stakeholders work together, their combined influence can be increased, especially when these stakeholders have secondary interests. To establish a competitive advantage, companies must establish a relationship based on transparency with their stakeholders as asserted by Franco et al. (2020).

In their study, Franco et al. (2020) examined the impact of CSR on CFP. Their findings revealed a U-shaped relationship between CSR and CFP, indicating that CSR incurs costs but can yield higher rewards when it fosters strong connections between businesses and their stakeholders. Franco et al. employed a contingency method to assess the role of quality management in the relationship between CSR and CFP. According to Franco et al., it has been found that the combined implementation of CSR and quality management may not provide as much benefit to CFP as the implementation of CSR alone. This is attributed to duplicating several actions to achieve the same objective: stakeholder satisfaction.

**Tobin's Q**. Prior studies have frequently utilized Tobin's Q, a quantitative measure to assess an organization's worth to analyze a company's enduring performance (Giannopoulos et al., 2022; Shaikh, 2022). Conversely, there are alternative financial metrics used to assess the worth of a company that can be easily modified to reflect

various profit-driven activities in the short term. Fortunately, this assertion is not supported by Tobin's Q. Tobin's Q is an exceptionally suitable metric for evaluating the worth of a company due to its ability to quantify the additional margin by which the market price surpasses the book value. The study undertaken by Giannopoulos et al. (2022) demonstrated the increasing prominence of Tobin's Q as a metric in scholarly research examining the influence of CSR disclosure on corporate value. The calculation of Tobin's Q is derived in the following manner by summing the market value evaluation (MVE), preference shares (PS), and debt, and then dividing the result by the total assets (TA). This study will utilize an approximation of this value.

The market value of the business, represented as MVE, is determined by multiplying the quantity of shares by the price of each share. The liquidation value of the preference shares is represented as PS. Additionally, the company's debt is found by subtracting the current assets from its long-term and short-term obligations. TA refers to the aggregate value of assets, "total assets" owned by a corporation. Based on Utami's (2015) findings, it is widely held among investors that companies exhibiting a Q-one ratio exceeding one have the potential to enhance shareholder value through the optimized utilization of their existing resources. On the contrary, investors believe enterprises exhibiting a Q-one ratio below one can generate reduced owner value (Shaikh, 2022).

**Study Procedures**

The primary emphasis of this study pertains to the aerospace and defense industry. Inclusion will be limited to firms exclusively engaged in aerospace and defense

works. The study will employ a sample size derived from the population of companies listed in the S&P 500 and Stockanalysis. The S&P 500 and Stockanalysis datasets can be accessed online and include several sorting options. The study will focus on the period spanning from 2019 to 2022. The additional fiscal year, namely "2022," is chosen to assess whether the corporation had a financial loss in the preceding year. This study focuses on the comprehensive analysis of organizations within the aerospace and defense industry, namely those that offer services exclusively to the aerospace and defense trade. The S&P 500 and Stockanalysis databases offer comprehensive data about various financial metrics such as revenues, profit, assets, market value, change in rank, and number of employees. In this study, the variables used for analysis were restricted to return on investments (ROIs), return on assets (ROAs), Tobin's Q, firm size, and firm growth. The provided information is adequate for the computation of financial ratios.

The aerospace and defense firms shall be categorized according to their respective industry sectors, and financial data shall be acquired for the period spanning from 2019 to 2022. The relevant data, including the company name, industry, ROI, ROA, Tobin's Q, firm size, and firm growth for each year, will be extracted from the websites stated and imported into an Excel spreadsheet. The calculation of various metrics, including the ROI, ROA, Tobin's Q, firm size, firm growth, and ESG score, will be conducted.

The companies must show presence for two consecutive years to compute the financial ratios of ROI, ROA, and Tobin's Q. For instance, if a firm is incorporated into the S&P 500 for the year 2019 but is omitted from the subsequent 2020 rankings, its exclusion would be justified because the essential information required to determine

possible improvements in its financial performance would be unavailable. The Excel spreadsheet encompasses several data points, such as the sector classification, company name, ROI, ROA, Tobin's Q ratio, firm size, firm growth rate, and ESG score. The data will be aggregated for each calendar year from 2019 to 2022. Furthermore, a comprehensive examination will be undertaken to compute the fluctuations in return on assets (ROA) and net profit margin during the periods spanning from 2019 to 2020, 2020 to 2021, and 2021 to 2022. This examination aims to ascertain whether there has been an enhancement or deterioration in the CFP.

Once the CFP for the selected years is determined, the ESG ratings for 2019 to 2022 will be obtained using Bloomberg's ESG and Stockanalysis databases. To access information from the Bloomberg ESG database, it is necessary to have access to a Bloomberg terminal and a valid subscription to the corresponding services. Once access has been obtained, the names of all the listed companies in the Excel file will be entered into the Bloomberg interface. The subsequent action requires inputting the ESG score into the designated field in an Excel spreadsheet. The selection process will involve choosing either the ESG or GRI scores. The ESG scores for 2019 through 2022 will then be systematically chosen and transformed into a provisional Excel spreadsheet. Subsequently, the data will be copied and pasted to the Excel spreadsheet containing the pertinent financial information. To be eligible for inclusion in the sample, the organization must possess accessible financial, environmental, social, and governance (ESG) data. The potential reduction of the projective sample of 150 aerospace and defense companies with financial data available for comparative years may depend on the

accessibility of financial data and ESG ratings. This reduction is necessary to study the potential relationship between VSR and CFP.

The scores will be subjected to a comparative analysis between consecutive years. In the event of a rise in a company's environmental, social, and governance (ESG) score between consecutive years, a binary value of 1 will be allocated; conversely, 0 will be assigned. To enhance comprehension of the association between VSR and CFP, a moderator and mediation Model or dichotomous variables (STAKE) and ROI will be utilized to control potential confounding variables. The moderator variable, also known as a construct, can modify the relationship between two constructs inside a model, influencing the magnitude or orientation of said interaction as stated by Hair Jr. et al (2021). Hair Jr. et al. (2021) asserted that moderators can be single entities or multifaceted organizations.

The mediation variable aims to identify and explain the relationship between the dependent variable, Y, and the independent variable, X; the interaction of a third variable, M, can alter this. In this case, M serves as a mediating variable (ROI), representing the mechanism by which X influences Y. Mediation analysis is used when the researcher wants to understand, explain, or test a hypothesis about how or via which process or mechanism a variable X affects Y. Although not the only method for elucidating causal mechanisms, mediation analysis is extensively applied in numerous fields that employ social and behavioral science methodologies. According to Igartua and Hayes (2021), behavioral science methodology extensively uses book and journal citations regarding mediation analyses. Igartua and Hayes asserted that a mediator can be almost anything—

a psychological state, a cognitive or affective reaction, or a bodily change, for example—caused by X but causally influencing Y.

The VSR score combines an organization's ESG score and GRI data. The company's VSR score will receive a plus1 score, indicating the presence of GRI. If not mentioned, a score of 0 will be assigned, indicating that it has not been implemented. The merging of CFP and VSR creates the mediation variable, ROI with stakeholder influence (STAKE), which is assessed by a company's participation in foreign sales. The measurement level can be classified as nominal. If a corporation includes foreign sales in its financial statement, it will receive a value of plus 1; otherwise, it will be assigned a 0 value.

The collected data will be inputted into SPSS 29.0.2.0 software, for linear and hierarchical multiple regression analyses. These analyses will examine the potential relationships between the dependent variables of financial performance, specifically ROA and Tobin's Q, and the independent variables of ROI, GRIs, firm size, firm growth, and the mediation, and moderating variable ROI. The Bloomberg ESG ratings will be utilized to assess whether there has been a year-on-year enhancement in sustainability performance among the companies included in the sample. A value of 1 will be granted to companies with improved sustainability ratings, while those who do not will be assigned a 0. The evaluation of corporate financial performance will be conducted by utilizing two key metrics, namely ROA and Tobin's Q.

To estimate the relationship between the variables of interest, a statistical model will be developed using regression analysis. The statistical analyses will be conducted

using SPSS version 29.0.2.0 software. The software will receive data input directly. Before importing the data into the SPSS version 29.0.2.0 software, a preliminary step will involve filtering the data to address missing information.

Additionally, an analysis will be performed to ensure the absence of extreme outliers and multicollinearity, enhancing the reliability and validity of the subsequent statistical procedures. The data will go Winsorization at the 1st and 99th percentiles to eliminate outliers that could introduce noise into the analysis. In the context of univariate studies, Pearson correlations will be computed to ascertain the presence of a positive correlation between the independent variables (Shrestha, 2020). As a subsequent procedure following the estimate, the variance inflation factors (VIFs) will be computed to assess further and mitigate the presence of multicollinearity. The significant level of the regression model in explaining the relationship between sustainability performance and financial success will be evaluated using the coefficient of determination, commonly represented as $R^2$ (Kamel & Abonazel, 2023). The level of significance refers to the threshold at which one remains impartial in deciding whether to reject or accept the null hypothesis. The current relevance thresholds range from 1% to 5%. These numbers are suitable as they reduce the probability of making type I errors when the null hypothesis is erroneously rejected. The degree of significance refers to the likelihood of making a type I error while rejecting the null hypothesis. A significance level of 1% implies a probability of 1% that the null hypothesis would be rejected erroneously (Brooks, 2019).

R-squared ($R^2$) is a statistical metric used to assess the degree of fit between the observed data and a regression model (Kamel & Abonazel, 2023; Pal et al., 2019). The

measurement assesses according to Kamel and Abonazel the extent to which the independent factors may explain the variability observed in the dependent variable. The $R^2$ statistic quantifies the degree of association between the independent and dependent variables (Kamel & Abonazel, 2023; Pal et al., 2019). Pal et al., and Kamel and Abonazel, exclaimed that a p-value of less than or equal to 0.05 should be employed to ascertain whether the null hypothesis may be rejected.

**Data Collection and Analysis**

Previous studies have established a link between companies' sustainability performance and financial outcomes (Arbogast & Agrawal, 2019; Brulhart et al., 2019). This study is a novel endeavor to measure the variables of GRI 2019–2022, business size and growth, and stakeholder influence. It aims to establish a comparative analysis between these independent variables and the dependent variables of financial performance, namely ROA and Tobin's Q.

This study will also be the inaugural endeavor to investigate the aerospace and defense industry nationally. This study might contribute to the existing body of research by expanding our understanding of the potential effects of stakeholder influence on sustainability reporting and financial performance. For instance, the research conducted by Okafor et al. (2021) might improve understanding of how executives of aerospace and defense industry firms integrate environmental and social responsibilities with company objectives. In their study, Jell-Ojobor and Raha (2022) investigated the potential correlation between a company's supply chain sustainability initiatives and financial

success. Their findings indicated a positive association between sustainability performance and economic outcomes.

Similar to the study conducted by Jell-Ojobor and Raha (2022) that centered their attention on the various supply chain management activities. The researchers employed regression analysis to ascertain the potential correlation between ESG scores derived from the Bloomberg ESG database and financial outcomes acquired from companies' financial reports. Similar to the studies conducted by Arbogast and Agrawal (2019) that investigated the correlation between profitability and social responsibility, revealing a positive association. Arbogast and Agrawal proposed that further research should be undertaken to promote sustainability and improve society. Brulhart et al. (2019) argued that promoting sustainability activities is paramount in preserving the natural environment while generating positive effects on economic performance.

The dependent variable in this study is the difference in financial ratio performance, which will be measured across a time lag of four years. The study will employ the difference in financial ratio methodology to analyze ROA and Tobin's Q-dependent variables. Separate linear and hierarchical multiple regression analyses will be done for each variable—the metric known as ROA, which is calculated by dividing a company's net income by its total assets. The control variables in this study encompassed several factors. First, firm size measures the total assets of a company. Secondly, firm growth measures total sales minus the previous year's divided turnover sales. Additionally, ROI was included as a mediation and moderator variable and measured by net income divided by the cost of investment. Lastly, the presence or absence of a loss in

the prior year will be incorporated as a control variable, with 0 indicating no loss and 1 indicating a loss.

The sample selection method will involve the extraction of an initial sample of companies from the prestigious S&P 500 and Sustainalytics lists. The ESG scores will be derived from Bloomberg's ESG database, while the financial data will be sourced from companies on the S&P 500 list. The data required to evaluate the hypotheses and address the research issue will be obtained from various sources, including the S&P 500 list, Bloomberg's ESG database, and yearly business reports.

Linear regression analysis will be utilized to examine the hypotheses. By adding control variables, potential confounding factors that could have caused the observed relationships in the correlation and regression studies were lessened. This methodology enabled the examination of the hypotheses and the identification of potential associations within the dataset (Lai et al., 2022). Multiple regression analysis examines whether one or more independent variables possess statistical significance in predicting a criterion variable (Sanasa et al., 2022; Yu et al., 2015). The histograms and scatterplots to assess the presence of non-linearity between the predictor variable and the criterion are examined (Lai et al., 2022).

The study will employ hierarchical multiple regression analysis using SPSS version 29.0.2.0. SPSS is a software tool for statistical analysis, enabling researchers to do various statistical computations and provide visual representations to aid in data analysis and result interpretation. According to Lai et al., hierarchical multiple regression is a statistical technique used to determine the variables that most effectively account for

the distribution of a given phenomenon. Another crucial diagnostic procedure involved examining the presence of multicollinearity among the independent variables. Multicollinearity among the independent variables will be estimated using the variance inflation factor (VIF) function within the SPSS 29.0.2.0 software (Marcoulides & Raykov, 2019). According to Marcoulides and Raykov (2019), multicollinearity may not be a concern if the variance inflation factor (VIF) value is below five.

**Assumptions**

The study made assumptions on the linearity of the relationship between the independent variables X and Y. According to Silver (2021), the linear assumption posits that the anticipated value of a dependent variable will exhibit a uniform rate of change, irrespective of the values assigned to the independent variables. The assumptions of this study encompassed several key elements. Firstly, the moderator-dependent variable must be measured continuously, explicitly falling within the interval or ratio measurement levels. Additionally, the study assumed the presence of one moderator variable that was dichotomous, independent of residuals, and exhibited a linear relationship with the dependent variable.

Like regression analysis, mediation analysis relies on linear regression analysis, necessitating that mediating variables adhere to the same assumptions as regression analysis. The research is based on the supposition that a solitary mediating variable is present. This mediating variable is the ratio between the independent variable (X) and one of two continuous variables (Igartua & Hayes, 2021). The binary variable is denoted by the values 0 and 1. Therefore, it is necessary for the mediating (M) and dependent (Y)

variables to have continuous data and be assessed at the interval level or above. X, M, and Y distributions are expected to adhere to a normal distribution, and the relationship between X, M, and Y follows a linear pattern. Finally, it is imperative that each level of the independent variable, as well as the mediating and dependent variables, have a normal distribution (Abu-Bader & Jones, 2021). The errors, Abu-Bader and Jones stated are commonly called residuals and must follow a normal distribution. Lastly, it is assumed that the distribution of the dependent and independent variables followed an approximately normal distribution.

The software package SPSS 29.0.2.0 will be utilized to test residual normality and assess if the residuals conform to the assumption of a normal distribution. The power of statistical tests can be limited when there is a breach of the assumption of a normal distribution. Removing outlier data becomes necessary when the assumption of normalcy is violated (Silver, 2021).

Another assumption pertains to the measurement of the variables. The measurement of environmental and ESG scores posed a significant challenge due to the extensive data collection process involved and the inherent difficulties in validating the authenticity of the information provided by corporations. According to Scotti et al. (2016), the Bloomberg ESG database is widely regarded as a precious resource for scholars aiming to assess sustainability performance. It is assumed that the data from Bloomberg is accurate and appropriate for this study. Furthermore, the sustainability information and financial data are presumed to be precise and verifiable. An additional premise posited in this study is that ROA and Tobin’s Q metrics are deemed valuable in

assessing financial success. Furthermore, it is essential to consider the underlying premise that the chosen research methodology and design are suitable for effectively addressing the research inquiry while ensuring that the selected sample is representative enough to allow for generalizability to the broader community.

Another assumption pertains to the measurement of the variables. The measurement of environmental, social, and governance (ESG) scores presents a potential challenge owing to the extensive data collection process and the inherent complexities associated with confirming the authenticity of information disclosed by enterprises operating in the aerospace and defense industry. Harrison et al. (2023) and Rezaee & Tuo (2017) have identified the Bloomberg ESG, KLD, Sustainalytics, and Asset4 databases as prominent resources for scholars seeking to assess sustainability performance. The reliability and appropriateness of the data obtained from Bloomberg ESG, KLD, Sustainalytics, and Asset4 are assumed for this inquiry. Moreover, the financial data and sustainability information are anticipated to be accurate and reliable.

Before analyzing mediation or moderation, the mediation and moderation assumptions must be met. Continuous scales are needed for the variables of interest—DV, IV, and mediator. The DV, IV, and mediator variables should be linear, as shown by a scatterplot. Variable distributions should be approximately normal, multicollinearity absent, and spurious outliers absent. DV and IV should be measured on a continuous scale with a nominal moderator variable with at least two groups. A scatterplot can verify that the DV, IV, and moderator variables are linear. As with the Mediation assumption,

the data must not demonstrate multicollinearity, have no notable outliers, and have nearly normal variable distributions.

**Limitations**

Limitations refer to deficiencies in the methodology, sample selection, or measurement techniques employed in a research study that may compromise the reliability of the study's findings and conclusions (Theofanidis & Fountouki, 2018). The authors Theofanidis and Fountouki and Queirós et al. (2017) discuss biases, data collection methods, limitations, and unforeseen circumstances as further constraints. In addition, limitations refer to various aspects, conditions, or events that are outside the control of the researcher and have the potential to impose limits or qualifications on research methodologies and the outcomes of tests.

One notable constraint of this research is the lack of mandatory, voluntary sustainability reporting (VSR) that corporations must disclose in their sustainability reports according to the GRI criteria. To accommodate this constraint, a score of 0 is assigned to GRIs, signifying that the GRI indicator is not referenced and will not be implemented. Similarly, another constraint pertains to the assessment of solely one metric of fiscal performance and the limited quantity of observations within the timeframe in which the data were accessible. The financial performance will be evaluated using ROA and Tobin's Q measures to address these constraints. In multicollinearity, appropriate actions such as eliminating one of the correlated variables or augmenting the sample size will be taken.

ESG ratings serve as a dependable metric for assessing the sustainability efforts undertaken by organizations, drawing from the information provided in their respective reports. However, it is essential to acknowledge the potential presence of flaws within the data, which might introduce biases and impact the outcomes of this study. Another constraint that should be considered is the need for a universally accepted methodology for assessing financial performance. The utilization of ROA as a measure of financial performance is commonly seen in academic research. Consequently, the selection to operationalize the measurement of economic performance by incorporating ROA and Tobin's Q could influence the study's conclusions. A diverse range of businesses, including those of various sizes, such as large, small, and medium-sized businesses, may potentially impact the study's findings because they may introduce a variety of data. Another potential problem can be identified in this context.

**Delimitations**

The research will adhere to a fact-based and objective approach. Electronic files will be assigned numerical codes rather than firm names to ensure confidentiality. Including consent documentation, confidentiality agreements, and letters of collaboration are unnecessary as the research does not include human participants. The data employed in this study will be securely preserved, with measures in place to protect the confidentiality and identification of companies in the sample.

Delimitations refer to the deliberate decisions researchers make to establish the boundaries and constraints within a particular study, as outlined in a research report. This study is limited in scope by focusing on the relationship between stakeholder influence

and sustainability reporting. This study will examine a single element among the numerous variables that can influence a firm's financial success. This study examined the sustainability practices of enterprises of varying sizes, including large, medium, and small organizations, instead of solely analyzing the sustainability operations of a single-sized company. This approach was adopted to ensure a comprehensive understanding of the topic and to avoid potential biases that could have influenced the findings. A potential drawback of the study is the selection of moderator and mediation criteria factors, as their values may be susceptible to unknown confounding or criterion variables. An additional constraint pertains to the utilization of publicly accessible financial data as the primary source for the archival data in this investigation. This study will utilize the widely employed financial measures of ROI, ROA, and Tobin's Q. The consensus on the most suitable financial metrics for research objectives remains elusive despite various financial indicators that could potentially be employed for research purposes.

**Ethical Assurances**

The required data is archival and accessible to the public. Therefore, obtaining informed consent from the companies included in the sample is unnecessary. Moreover, acquiring the requisite data for the research did not result in any adverse consequences on the rights and well-being of the participating companies and only posed minimal risks. Nevertheless, measures will be implemented to preserve the data's confidentiality and anonymity.

The data collected for this study will be securely stored using the Statistical Package for the Social Sciences (SPSS) software, widely recognized, and utilized for

efficient data entry, storage, and analytic purposes. The data will be securely stored in a database that requires an encrypted password. The researcher possesses professional expertise in quality control within the context of a prominent industrial organization. The researcher is obligated to select appropriate data for analyzing the research problem. The data will be gathered utilizing a predetermined sample to extract information from archival databases maintained by companies' annual financial statements, the S&P 500 industry index database, the Global Reporting Initiative (GRI), Bloomberg's ESG, Sustainalytics, and other publicly accessible websites.

The requirement for consent forms was deemed unnecessary in this study, as the material being utilized is publicly available and preserved. Moreover, obtaining consent would not adversely affect the rights or well-being of the companies being sampled. The preservation of the participating companies' reputations will be ensured during the study. By mitigating potential sources of bias, the preservation of objectivity is ensured, hence upholding the integrity of the research process. This is achieved by diligently attending to accurate data acquisition and processing. This study aims to present its findings objectively without bias or subjective assessment.

The research conducted in this study was approved by Walden University's Institutional Review Board (IRB) under permission number 11-17-23-0175948. The IRB assessed the research proposal to ensure it met the institution's regulations and professional behavior standards before data collection commenced (Wright, 2024).

The research will adhere to a fact-based and objective approach. Electronic files will be assigned numerical codes rather than firm names to ensure confidentiality.

Including consent documentation, confidentiality agreements, and letters of collaboration are unnecessary as the research does not include human participants. The data employed in this study will be securely preserved, with measures in place to protect the confidentiality and identification of the participating companies in the sample.

**Summary**

This chapter comprehensively describes the research technique, methodology, and sample. The discussion encompassed the operational definitions of the variables, study methods, and the data collection and analysis approach, including the software to be employed. This part additionally encompassed assumptions, constraints, boundaries, and ethical considerations. The research will utilize quantitative methodologies and regression analysis to ascertain whether a correlation between the independent and dependent variables is statistically significant. The archival data collection will encompass the yearly financial statements of aerospace and defense businesses, the S&P 500 Industry index database, the Global Reporting Initiative (GRI), Bloomberg's ESG data, and Sustainalytics. The subsequent section will elucidate the outcomes of the investigation.

# Chapter 4: Results

## Introduction

This study examined the relationship between VSR and CFP on stakeholders' influence while controlling firm size and growth in the aerospace and defense industry. The analysis employed archive data obtained from the retrieval system of the Securities and Exchange Commission (SEC) electronic data gathering analysis and retrieval (EDGAR) database, stock market capitalization, and information from 150 aerospace and defense businesses included on the Fortune 500. The objective was to examine a correlation between VSR and CFP results while considering the effect of stakeholders' influence on CFP. The Bloomberg environmental, social, and corporate governance (ESG) database, Sustainalytics, and CSR Hub supplied environmental, social, and sustainability performance statistics.

The dependent variables consisted of return on assets (ROA) and Tobin's Q, sourced from corporations listed on finance.yahoo.com, macrotrends.net, barchart.com, stockmarketcap.org, and the Fortune 500 list. The data were verified by accessing the SEC EDGAR database and published annual reports. The magazine Fortune compiles the Fortune 500 dataset yearly, ranking the largest corporations in the United States based on their total revenue. Additionally, it provides information on profits for the fiscal year, changes in revenues and profits, market value, total assets, number of employees, sector, industry, and location (city and state), including changes in rank compared to the previous year.

Stock market capitalization is comparable to the Fortune 500 dataset. The dataset also provides information on profits for the fiscal year, changes in revenues and profits, market value, total assets, number of employees, sector, industry, location (city and state), and changes in rank from the previous year. Additionally, it includes the market capitalization of the companies. The companies featured in the Fortune 500 are categorized based on industry sectors, including aerospace and defense, chemicals, manufacturing, automotive, apparel, food and beverages, tobacco, household products, materials, and technology. Access to the Fortune 500 statistics is available by online subscription, and the data can be sorted using several methods.

The control variables encompass stakeholders' influence "STAKE," GRI data from 2019 to 2022, ROI, firm size, and growth. To evaluate the existence of multicollinearity in the regression studies, the correlation matrix was analyzed and computed for the variance inflation factors (VIF) values (see Appendix B and Appendix C for Test Multicollinearity and VIF collinearity of the multiple regression). Thus, the VIF values are between 1-10. I conclude that the VIF values are less than 10, meaning there is no multicollinearity in the independent variables, including the two independent moderating and mediating variables. The VIFs calculated for each year did not exceed 1-10, suggesting no multicollinearity in the regression analyses.

For this study, I defined the Global Reporting Initiative (GRI) as incorporating sustainability reporting disclosure from 2019 to 2022. This information was sourced from the GRI and corporate register, a comprehensive online directory of corporate responsibility reports, which is continuously updated. The GRI sustainability reporting

variable is a dichotomous variable that takes on a value of 0 when GRI disclosure is not reported and 1 when GRI disclosure is mentioned. The moderating variable for 2019-2022 was ROI.

The purpose was to investigate whether stakeholder influence affected corporate financial performance, specifically the gain or loss from an investment relative to the initial investment. A dichotomous variable was also used, with 1 indicating a firm with foreign sales and 0 indicating otherwise. The dependent variables, ROA, and Tobin's Q, for 2019-2022 strongly correlate at the 0.01 and 0.05 levels, (2-tailed; see Appendix J). These variables were examined to assess the financial success of the organization. The data included in this study were obtained from the company's annual report spanning 2019 to 2022. The annual report's income statement and balance sheet are utilized to evaluate the company's financial performance through the computation of financial ratios, including return on income, current ratio, operating margin, and ROA, which is appropriate due to its focus on short-term financial performance.

The organization of this chapter commences with an examination of the research question and the corresponding hypothesis, followed by assessments of assumptions and outcomes. The evaluation of assumptions involved identifying variables that could influence the outcomes, and the findings consist of an analysis of the entire study structured according to the research question and hypothesis. The results also involve evaluating and analyzing the data, identifying common themes and patterns, and exploring how stakeholder influence affects the relationship between VSR and the CFP of aerospace and defense companies. Finally, an empirical analysis is performed to

investigate the role of ROI as a mediator and moderator between voluntary sustainability reporting (VSR) and corporate financial performance (CFP).

The study utilized Pearson's partial correlation analysis to evaluate the strength and direction of the linear relationship between the predictor and outcome variables, considering the covariates' impact. Pearson's partial correlation test was used due to the presence of control factors that could impact the outcomes of the statistical tests in this investigation. In this study, I utilized hierarchical multiple regression to evaluate the prediction of a dependent variable using various independent variables while also considering the impact of control variables. Hierarchical multiple regression is a statistical method that allows for systematically entering variables in a particular order. This approach helps to assess the impact of control factors on the outcomes. It considers the potential causal effects of independent and control variables when investigating a possible association with a dependent variable. SPSS 29.0.2.0 software and Hayes PROCESS Models 1 and 4 were used to test the conceptual framework and the direct and indirect effects of mediating and moderating.

This study employed a single research topic and its corresponding hypothesis. The research question aimed to ascertain the correlation between VSR and CFP in the aerospace and defense industry, as measured by ROA and Tobin's Q. Additionally, it sought to determine whether stakeholders' influence has any impact on corporate financial performance while considering factors such as firms' growth and size. The study question necessitated the formulation of null and alternative hypotheses, which were subsequently subjected to statistical testing.

In this research study, one quantitative research question was examined:

RQ: What is the relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry?

$H_1$: There is no relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

$H_2$: There is a relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

The hypothesis proposes a connection between the moderating variables to establish a robust relationship between the autonomous and subordinate variables. This can be examined through a statistical model by manipulating the independent, dependent, and control variables. Given the research question and the underlying assumptions, it was necessary to conduct a statistical analysis. Therefore, Pearson's partial correlation and hierarchical multiple regression tests were used. The data were accessed using Statistical Package for Social Science (SPSS) version 29.0.2.0 to examine the impact of stakeholders' influence on the relationship between VSR and CFP in the aerospace and defense industry. Given that the study aimed to establish the correlation between the variables rather than to assess disparities between groups, analysis of variances (ANOVA) was not employed.

Partial correlation and multiple regression techniques effectively establish the relationships between environmental, sustainability, and financial performance. These strategies facilitate the development of statistical models for testing hypotheses and uncovering links in the data (Igartua & Hayes, 2021; Tredennick et al., 2021). The study employed simple mediating and moderation analysis to assess and ascertain how stakeholders influence business financial performance. The moderating effect is determined from the Hayes PROCESS moderation model 1. The model consists of a single moderator, where the variable M represents the degree of moderating or interaction, determining the impact of X on Y (Igartu & Hayes, 2021). To put it another way, moderating variables can modify the relationship between X and Y variables by either enhancing or diminishing it or changing its direction. The phrases “interaction” and “moderation” can be used interchangeably because they both refer to the influence of X on Y at different degrees of a moderator (Andersson et al., 2020). The Hayes technique automatically generates an interaction term (X*M) between the independent and moderating components.

Igartua and Hayes (2021) employed mediation analysis to explore the null hypothesis regarding how variable X transmits its effect on Y. This analysis was conducted using SPSS 29.0 and Hayes PROCESS Model 4. The potential influence of including a mediator (W) in the regression analysis on the association between the independent variable (X) and the dependent variable (Y) was examined by Igartua and Hayes (2021) using the Sobel test. The study conducted by Igartua and Hayes revealed that the outcomes of the indirect effect, as determined using 5000 bootstrap samples,

demonstrated a statistically significant negative indirect association between physical health and depressed symptoms. Thus, Hayes PROCESS Model 4 with covariates will be used to assess the presence of an indirect effect of ROI on the relationship between VSR and CFP using 5000 bootstrap samples. The ROA and STAKE were included as covariates to account for potential differences in firm performance and likelihood of influence from stakeholders.

**Validity and Reliability of the Data**

Data credibility requires validity and dependability (Sürücü & Maslakci, 2020). The data utilized in this study are accessible to the public through exclusive databases. The government and reputable research businesses maintain several databases, including the SEC's EDGAR, GRI, Sustainalytics, S&P 500, and Bloomberg's ESG databases. Additionally, these entities maintain the yearly financial statements of the company listed on the Fortune 500. The data were initially input into an Excel spreadsheet, subsequently imported into SPSS, and meticulously verified for accuracy on multiple occasions. The calculations of ROA, Tobin's Q, ROI, and firm size and growth were validated and scrutinized for reasonableness. The magazine Fortune has published its Fortune 500 rankings for over 65 years, while Bloomberg, a well-regarded research organization, has been operating for over 40 years. Both organizations are dedicated to providing precise and dependable statistics. Nevertheless, the data were verified by comparing it with the company's annual financial statements and corporate social responsibility, or sustainability reports as they are known.

Before the inclusion of the final data in the separate databases, a thorough cleaning process was carried out. ROA and Tobin's Q are dependable indicators for assessing an organization's financial performance. They measure a firm's capacity to generate a satisfactory return on its assets and determine its profitability. ROA is widely recognized as the primary statistic for evaluating a company's financial success and is therefore regarded as a reliable indicator of the financial performance construct (Nguyen et al., 2021).

To ensure precise measurement, the instruments utilized must be dependable. The Bloomberg ESG database is a highly dependable tool for assessing active engagement in environmentally and socially responsible initiatives (Wong & Petroy, 2020). Bloomberg's ESG ratings are highly regarded criteria for researchers to assess environmental and social performance (Rajesh & Rajendran, 2020). To determine the trustworthiness of the data, an examination was performed to assess the assumptions of multicollinearity, normality, linearity, homoscedasticity, and independence of residuals. (See Appendix D). Variance inflation factors (VIF) were used to measure multicollinearity, whereas scatterplots and Q-Q plots were used to examine normality, linearity, homoscedasticity, and independence of residuals.

**Threats to Validity**

Threats to a research study's validity encompass internal and external factors that can compromise the overall validity and quality of the research (Sürücü & Maslakci, 2020). The research for this study included extensive and reputable databases, including Bloomberg's ESG and EDGAR, which provide information on Fortune 500 businesses.

The accuracy of the data was further confirmed by the scrutiny of publicly available yearly reports, all of which underwent auditing by the Big 4 public accounting firms Deloitte, PWC, EY, and KPMG. The sample comprised the most prominent aerospace and defense companies that disclosed their environmental and social ratings for the study's designated years. The independent environmental and social performance variables were directly sourced from the Bloomberg ESG database. ROA and Tobin's Q are widely recognized and commonly used dependent variables that serve as fundamental financial performance indicators in the corporate context. This study aimed to establish evidence of a relationship; it was not an experimental analysis, reducing the risk of internal validity.

Threats to statistical conclusion validity pertain to the accuracy of the study's outcome in determining the relationship between variables. These threats include situations that lead to the incorrect rejection of the null hypothesis when it is true (Type I error) and the incorrect acceptance of the null hypothesis when it is false (Type II error) (Xu et al., 2020). To ensure statistical validity, I evaluated the assumptions of linearity, normalcy, multicollinearity, homoscedasticity, and independence of residuals, thus mitigating potential threats. To evaluate the assumptions of linearity and homoscedasticity, scatterplots were examined to identify any deviations from these assumptions. The multicollinearity in the data is assessed by analyzing the tolerances and variance inflation factor (VIF), which indicates no multicollinearity. A Durbin-Watson test evaluated the independence of residuals to verify if the errors were independent and unaffected by other factors in the models.

Histograms and standard Q-Q probability plots were used to evaluate the normality assumption and ensure the normal data distribution. The data is sourced exclusively from reputable sources, and rigorous statistical analysis procedures were employed to ensure its validity. The independent and control variables were systematically implemented, and the sample selection method mitigated the possibility of confounding effects.

## The Result

The sample comprised aerospace and defense firms listed in the Global Reporting Initiative, Sustainalytics, S&P 500, Bloomberg's ESG, and Fortune 500 databases. Out of the total 15,285 firms observed, 14,930 were categorized as subsidiary companies in the aerospace and defense industry, while 115 companies were either not listed in the stock market capitalization database or did not belong to the aerospace and defense sector under significant aerospace and defense companies. Eleven entities lacked financial and share market data, while 16 entities failed to disclose yearly financial statements for the specified comparison years in the study. The sample size was decreased to 166 due to the study's requirement for both financial data and ESG scores. The sample size was further reduced to 150 to include only the environmental and social performance scores for the relevant years of the study (see Appendix E for Sample Size and Industry Distribution).

Four industries that depict the sample firms were selected using the industry sector. The list of industries and the number of firms are listed in Table 3. Table 3 shows the aircraft, aviation, industrial, and technology firms, with over 95.3% of the companies in the aerospace and defense industrial sector, followed by Technology at 2.7%, Aircraft

at 1.3%, and aviation at 0.7%, which accounts for the total aerospace and defense companies examined.

**Table 3**

*List of Firms by Industry*

| Industry | Firms | Percentage |
|---|---|---|
| Aircraft | 2 | 1.3% |
| Aviation | 1 | 0.7% |
| Industrials | 143 | 95.3% |
| Technology | 4 | 2.7% |
| Total | 150 | 100% |

Source. SPSS 29.0.02.0 (2022).

Bloomberg and Sustainalytics ESG ratings were examined to analyze and evaluate VSR and CFP adherence to sustainability. (see Table 4). The ESG rating has a mean of 20.82 and a standard deviation of 17.48, respectively, indicating a normal distribution.

**Table 4**

*ESG Rating Descriptive Statistics*

| | *n* | *Min* | | *M* | *SD* |
|---|---|---|---|---|---|
| ESG Rating | 150 | 0.0% | 59.0% | 20.82% | 17.48% |
| Valid N (listwise) | 150 | | | | |

Source. SPSS 29.0.02.0 (2022).

Appendix F presents the summary data for the key variables. The statistics provide minimum, maximum, mean, standard error, standard deviation, skewness, and kurtosis information. The firm's growth ratios, as derived from the firm's annual reports, indicate the rate at which the company or the business is expanding. The firm's growth

and size were widely reported for 2019-2022. The firm's growth rates are as follows: 4.22%, -2.67%, 0.31%, and -0.18%. The standard deviation for these growth rates is 21.43%, 32.0%, 30.3%, and 27.6%. Firm size represents the average and variability of the scale at which a corporation operates. The average size of the firms, measured in assets, is $75B, 69B, $71B, and $81,8B with a standard deviation of $9.21B, $8.43B, $8.67B, and $9.99B, respectively.

The GRI Reports and the moderating variable stakeholder for 2019-2022 are dichotomous variables that take the value of 1 if the GRI Indicator is stated and 0 otherwise. Similarly, they take the value of 1 if foreign sales are mentioned and 0 otherwise. The average values for GRI Reports were 0.15, 0.22, 0.43, and 0.84, whereas the measures of variability, represented by the standard deviation, were 0.36, 0.42, 0.50, and 0.37 accordingly. The average value for Stakeholders was 0.43, 0.44, 0.43, and 0.43, and the measure of variability for the year presented was 0.50 correspondingly. The ROA and Tobin's Q statistics exhibit minimum mean and standard deviation values, indicating that the data is tightly concentrated around the mean. The mean and standard deviation statistics for ROI 2019-2022 suggest that the data falls within a normal distribution range. The mean values for 2019, 2020, 2021, and 2022 are 2.7%, 2.5%, 1.2%, and 2.2%, respectively. The corresponding standard deviations are 3.9%, 6.4%, 2.3%, and 3.8%, respectively.

The independent variables for firm size, growth, and GRI Reports 2019–2022 are also displayed in Appendix F. The distribution of firm growth is negatively skewed, meaning that the tail is located on the left side and extends towards more negative values.

A skewness number greater than 2 indicates a significant deviation from normality, especially when considering the size of a corporation. The GRI Report 2019-2022 indicates a positive skewness value, indicating that the distribution has a tail on the right side that stretches towards higher positive values of 2.02, 1.37, and 0.27, respectively. In contrast, the GRI Report 2022 shows a tail on the left side of the distribution, extending towards more negative values of -1.9. The skewness of the dependent variables ROA 2019-2022 and Tobin's Q 2019-2022 exhibit positive values. A skewness value of zero indicates a perfectly symmetrical distribution. In contrast, a negative skewness suggests that the tail of the distribution is on the left side. Kurtosis quantifies the degree of probability in the tails of a distribution, and a value exceeding 7 indicates a significant deviation from normalcy (Demir, 2022). The control variables, firm growth, firm size, ROI, and the dependent variable, ROA, are not generally distributed except for firm growth. The data on various facets of the firm's performance and features from 2019 to 2022 are also included in Appendix F.

In the initial, plotting the expected values of the independent variables versus the predicted values did not account for the presence of observed irregularities, hence failing to build a linear relationship between the variables. In regression analysis of data distribution, measurement mistakes, and outliers are expected to be encountered according to Demir (2022). Several approaches have been suggested to address these challenges, emphasizing the importance of data purification before parameter estimates. The cleaning strategies employed in the study conducted by Li et al. (2023), included trimming, winsorization, and dichotomization. Li et al. cleaning strategies used in the

study were winsorization. The factors included firm growth, size, GRI Reports, ROA, ROI, STAKE, and Tobin's Q. The results after applying winsorization with a 0.5% winsorization level to the main variables are presented in Appendix G.

Although eccentric, they effectively embodied the possible unexpected events and unpredictability inherent in the corporate system. By eliminating it, the model would create an illusion of greater predictability than what truly exists according to Li et al. (2023). There was no valid justification for removing those points. Despite the significant impact of this atypical data, it does not affect the assumptions, thus including outliers in the models.

Eliminating data points to attain a more precise model or statistically significant results is seen as an unsuitable methodology as stated by Frost (2021). Subsequently, Q-Q plots were generated for the independent variables (see Appendix H for Q-Q plots). According to Frost, if the extreme value is a valid observation inherent to the population being studied, it is advisable to retain it in the dataset. Therefore, to retain the inherent outliers and data integrity, the data variable firm size was transformed for all four years by combining them into groups according to the revenue the company obtained each year. When utilizing data in SPSS, it is frequently imperative to manipulate variables to examine them efficiently. These transformations enable researchers to change and restructure their data to meet their analysis requirements more effectively (Almquist et al., 2019).

Firm size denotes the mean and fluctuation in the magnitude at which a corporation conducts its operations. There was no change in the average size of the

enterprises, as defined by their assets, and there was no change in the GRI Reports and Stakeholders for 2019-2022. The GRI Reports and STAKE for 2019-2022 are dichotomous variables with a value of 1 if the GRI indicator is mentioned and 0 if it is not. The values of ROA and Tobin's Q slightly changed. There was only a slight change in the mean and standard deviation statistics for these variables. This suggests that the data points were closely grouped around the mean. Specifically, before winsorization, the mean for ROA ranged from 0.00 to 0.02, while for Tobin's Q, it ranged from 0.01 to 0.11. After winsorization, these ranges remained the same. Similarly, the mean and standard deviation for ROI exhibited minimal changes, with values ranging from 0.01 to 0.02 and 0.03 and a standard deviation of 0.01. (See Appendix G). The control variables were not subjected to winsorization.

Appendix G shows the independent variables for firm size, firm growth, and GRI Reports 2019–2022, no skewness was displayed. The skewness in the GRI Report for 2019-2022 did not change after winsorization. The dependent variables ROA and Tobin's Q from 2019 to 2022 exhibited minimal changes skewness, with certain variables displaying positive values while others showed negative values. A skewness value of zero indicates an entirely symmetrical distribution. In contrast, a negative skewness indicates that the distribution's tail is located on the left side, notably for the variable ROA 2019-2022, and it extends towards greater negative values. Kurtosis estimates the degree of probability in the tails of a distribution, and a number exceeding 7 indicates a considerable deviation from normalcy (Demir, 2022). A skewness value greater than 2

indicates a significant deviation from normality. Following the process of winsorization, all variables, except for the control variables, exhibited a skewness value below 2.

**Research Question 1 and Hypothesis**

RQ: What is the relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry?

$H_1$: There is no relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

$H_2$: There is a relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry.

To show a statistical model, the relationship between the variables must have an inherent linearity. On the other hand, the outcome could be influenced by bias (Brown, 2021). The presence of linearity was assessed by examining scatterplots to find if there were any notable deviations from the assumption. (see Appendix H). Brown linearity refers to the presence of a relationship between the predictor factors in a correlation and the result variables, as observed through the visual analysis of scatterplots. Scatterplots were constructed to examine the linearity between the independent variables and the financial performance variables of ROA and Tobin's Q over several periods, specifically 1-year, 2-year, 3-year, and 4-year. Several scatterplots showed a marginal positive slope,

while others displayed a slight negative slope, and a few scatterplots had a substantially horizontal trend line.

The $R^2$ statistic in Table 5 explains between 6% and 11% of the variance in return on assets and between 8% and 11% of the variance in Tobin's Q. A moderate strength association is shown by the *R* statistic for ROA 2019-2022 and Tobin's Q 2019-2022, which are 0.34, 0.33, and 0.28, respectively. The Durbin-Watson statistics approximate a value of 2. The Durbin-Watson test is a metric used to assess the presence of autocorrelation in residuals (Brown, 2021). A score close to 2 suggests a lack of significant autocorrelation. Durbin-Watson values below 2 imply a slightly positive correlation, while values above 2 show a slightly negative correlation (Brown, 2021). Considering the sample size, these numbers are not considered troublesome and do not necessarily show positive or negative autocorrelation.

**Table 5**

*Model Summary RQ ROA as Predictor after Winsorization*

| Dependent Variables | *R* | $R^2$ | *Adj.* $R^2$ | *SE* | Durbin-Watson |
|---|---|---|---|---|---|
| ROA 2019 | 0.3 | 0.1 | 0.1 | 3.4% | 1.9% |
| ROA 2020 | 0.2 | 0.0 | 0.0 | 4.7% | 1.9% |
| ROA 2021 | 0.3 | 0.1 | 0.0 | 3.1% | 2.0% |
| ROA 2022 | 0.2 | 0.0 | 0.0 | 3.5% | 1.9% |
| Tobin's Q 2019 | 0.3 | 0.1 | 0.0 | 0.2% | 1.7% |
| Tobin's Q 2020 | 0.3 | 0.1 | 0.1 | 14.6% | 2.2% |
| Tobin's Q 2021 | 0.1 | 0.0 | 0.0 | 12.1% | 2.3% |
| Tobin's Q 2022 | 0.1 | 0.0 | 0.0 | 14.6% | 2.3% |

Source. SPSS 29.0.02.0 (2022).

Appendix K shows the scatterplot that illustrates the correlation between sustainability reporting and ROA for the four-year comparative time frames after winsorization. The line of best fit for ROA 2019-2022 is trending slightly downward. Similarly, the relationship between sustainability reporting and Tobin's Q for the four-year comparative time frames after winsorization. The chart shows that the best fit for Tobin's Q 2019 is relatively flat, while the line for Tobin's Q 2020-2022 shows the fit line slightly downward and relatively flat.

Considering the control factors, the associations between sustainability reporting and financial ratios are near 0 rather than approaching plus 1 or -1. Table 6 shows that there is no statistically significant correlation between sustainability reporting and ROA or Tobin's Q. The lack of a significant association between sustainability reporting and ROA and Tobin's Q can be due to the limitations in evaluating sustainability reporting and the presence of other complicating variables, such as the influence of stakeholders.

**Table 6**

*RQ: Correlations and Significance (2-tailed) with Control Variables*

| Dependent variables | Correlation | *Sig. (2-tailed* |
|---|---|---|
| ROA 2019 | -0.03 | 0.72 |
| ROA 2020 | -0.03 | 0.11 |
| ROA 2021 | 0.19 | 0.02 |
| ROA 2022 | 0.59 | 0.47 |
| Tobin's Q 2019 | -0.03 | 0.72 |
| Tobin's Q 2020 | -0.03 | 0.11 |
| Tobin's Q 2021 | 0.19 | 0.02 |
| Tobin's Q 2022 | 0.59 | 0.47 |

Source. SPSS 29.0.02.0 (2022).

The findings are consistent with the Spearman correlation matrix, as cited in the study by Carvajal and Nadeem (2023). No notable correlation was found between the independent dummy variable and any dependent variables measuring firm performance ROA, ROE, and Tobin's Q. On the other hand, the SPINDEX independent variable showed a positive correlation with ROA (0.22) and ROE (0.27), both with a significance level of $p < 0.01$. Nevertheless, no notable correlation was found between SPINDEX and Tobin's Q, similar to Carvajal and Nadeem findings.

Carvajal and Nadeem (2023) conducted a study to investigate the relationship between sustainability reporting and firm performance in New Zealand. The researchers directed their attention towards the issue of materiality in sustainability reporting, employing the sustainability reporting standards set up by the Sustainability Accounting Standards Board (SASB). This study employed an ordinary least squares statistical approach to investigate the performance of corporations in New Zealand between 2017 and 2019. The sample consisted of 84 companies. Carvajal and Nadeem's research aimed to find if firms that provide sustainability reporting and financial material sustainability information outperform those that do not.

Carvajal and Nadeem (2023) cited that the results were consistent with the Spearman correlation matrix. No statistically significant association was found between the independent dummy variable and the dependent variables of financial planning, including ROA, ROE, and Tobin's Q. Nevertheless, Carvajal and Nadeem found no notable correlation between SPINDEX and Tobin's Q. Carvajal and Nadeem suggested that there might be a connection between sustainability reporting and firm performance,

but only when the disclosed sustainability information is financially material. This aligns with the SASB sustainability reporting standards and is supported by recent literature by Grewal et al. (2021), which showed that financial material sustainability reporting can enhance firm value.

Multicollinearity is when two or more independent variables are significantly correlated (Marcoulides & Raykov, 2019). When multicollinearity is high, the output from statistical tests becomes unreliable. The variance inflation factor (VIF), $R^2$, and size of the coefficients are useful in evaluating multicollinearity. When an independent variable has a substantially linear relationship with other predictor variables, the VIF is more significant than five and shows multicollinearity. Correlation coefficient analysis was used to examine the potential relationship between the study predictor variables to show the possible strength and association of the relationship between variables (Shrestha, 2020). The presence of multicollinearity was evaluated by implementing a correlation coefficient study. The VIF scores for all variables were less than five, and the tolerance scores were more significant than 0.2, suggesting that multicollinearity is not a concern. Concerning return on assets (ROA), the findings obtained from the collinearity diagnostics showed a minimal likelihood of multicollinearity. (See Appendix B).

The presence of a statistically meaningful association between variables is contingent upon the normal distribution of all variables (Silver, 2021). As aforementioned, normality is verified by examining scatterplots, Q-Q plots, and histograms. A histogram with an asymmetric, bell-shaped curve is a normal distribution. Using Q-Q plots and scatterplots helped identify no substantial violations of this premise.

The Q-Q plot depicted the likelihood of the data points being aligned in a linear diagonal pattern, suggesting that the normality assumption was not broken. Q-Q plots were constructed to assess the normalcy of the data visually. The conventional Q-Q plot of ROA showed that most data points are near the diagonal line, except for a few that deviate below the normal distribution line at both ends. This deviation is a consequence of winsorizing the data points. (See Appendix H).

Histograms were employed to assess the normalcy of the ROA data after its winsorization. The study reveals that the histogram shows a bell-shaped, symmetrical curve with a minor rightward skewness. The normalcy of the histogram is proven by its symmetrical shape. (See Appendix I).

**Hayes Process Model 1 and 4**

Andrew F. Hayes PROCESS models 1 and 4 were employed as analytical tools for modeling path analysis, using observed variable ordinary least squares (OLS) and logistic regression techniques (Igartua et al., 2021; Hayes, 2017). Process models are widely used in social, business, and health sciences to help compute direct and indirect effects inside models with one or more mediators, encompassing parallel and serial configurations. Furthermore, Igartua et al. asserted that this process effectively manages interactions in moderation models, both two-way and three-way. Igartua et al. and Hayes found that this allows for analyzing bare slopes, regions of significance, and conditional indirect effects in moderated mediation models, including one or more mediators or moderators.

**Moderation Analysis**

The study used a simple moderation analysis to evaluate the hypothesis of the paths of stakeholders' influence "STAKE" on voluntary sustainability reporting "GRI" through corporate financial performance "TOBIN'S Q." The moderation impact was calculated using Hayes' (2013) PROCESS Model 1 (Hayes, 2017). The model has one moderator, W (STAKE), that determines how X affects Y by altering the link between X and Y by strengthening or weakening it or altering its direction. Because moderation denotes the impact of X on Y at various moderator levels, the terms "interaction" and "moderation" can be used interchangeably (Igartua & Hayes, 2021). According to the Hayes interaction term (X*M), is automatically generated between the independent and moderating components. Appendix L presents the outcome of the moderation analyses and regression results on the variable "STAKE" influence on the association between voluntary sustainability reporting (VSR) and corporate financial performance (CFP).

Multiple regression analysis was conducted to assess the hypothesized Hayes PROCESS moderated model utilizing PROCESS Model 1. $H^1$ argued that there is no correlation between VSR and CFP on stakeholders' influence in the aerospace and defense industry. In contrast, the hypothesis put forth by $H^2$ suggests that there exists a direct correlation between VSR and CFP, on stakeholders' influence in the aerospace and defense industry. Before conducting the analysis, the variables were centered around the mean to reduce multicollinearity (Salmerón-Gómez et al., 2020). Appendix L shows the moderation analysis, predictors, and moderating effect figures associated with the variables that accounted for nonsignificant and significant amounts of variance in CFP,

for years 2019, (ƒ (3, 146) = .293; $R$ =.077, $R^2$ = .006; $p$ <.001). For the year 2020, (*f* (3, 146) =1.8; $R$ =.02, $R^2$ = .004; $p$ < .001). For the year 2021, *f* (3, 146) = 2.7; $R$ =.0.23, $R^2$ = .05; $p$ < .001). Finally, for the year 2022, *f* (3, 146) = 1.06; $R$ =.15, $R^2$ = .002; $p$ < .001, respectively. The result is not significant at p < .05 for the years 2019-2022.

Next, I examined whether the relationship between VSR and CFP is moderated by STAKE influence. I observed that the interaction term is not statistically significant for years 2019, b = -6.6, $p$ <.05; 2020, b = - 2.5, $p$ <.05; 2021, b = -1.3, $p$ <.05; 2022, $b$ = -0.2, $p$ <.05. Therefore, $H^2$ was rejected. Next, I conducted simple slope analyses and probed interactions (Appendix K). When STAKE influence is high, for years (2019, $b$ = -4.1, $p$ <.05; 2020, b = 7.9, $p$ <.001; 2021, $b$ = 6.9, $p$ <.001; 2022, b = 4.4, $p$ <.05) and medium for years (2019, b = 2.5, $p$ <.05; 2020, b = 5.4, $p$ <.01; 2021, b = 5.6, $p$ <.001; and 2022, $b$ = 4.2, $p$ <.05), VSR was moderately associated with higher levels of CFP. However, when STAKE influence is low, this relationship becomes non-significant. Therefore, STAKE influence amplifies the impact of VSR on CFP. (See Appendix L). Therefore, the $H^2$ hypothesis is rejected. The results are similar to the study performed by Hafsyah and Choiriah (2023).

In their research, Hafsyah and Choiriah examined the influence of green accounting and company size on the performance of banks while also considering firm growth as a moderating factor. A sample of 37 companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2021 was chosen based on their continuous publication of annual and sustainability reports. EViews software was used in this study to conduct data analysis by applying multiple linear regression analysis. Hafsyah and Choiriah's research

findings showed that the intervention variable “firm growth” did not significantly affect the relationship between green accounting and bank performance, despite previous data suggesting that it was significant for company development. In the context of bank performance, the association between green accounting and business size was diminished by the moderating variable: asset growth.

According to Hafsyah and Choiriah, the rate at which a firm grows does not necessarily provide increased transparency in implementing green accounting standards. Additionally, the size of a company does not necessarily ensure its performance, particularly when considering its impact on growth. Therefore, the augmentation of assets and the enhanced ability of enterprises to provide services must also be fortified through external financing. The legitimacy hypothesis posits that businesses are constrained by a social compact, wherein enterprises consent to engage in diverse social activities believed acceptable by society, safeguarding the company’s viability. Hafsyah and Choiriah and the legitimacy theory, society has a significant role in the development of companies, as it influences the public’s belief in the company’s size and future growth.

Therefore, the hypothesis that stakeholders influence the VSR relationship and CFP can be rejected. To conclude, businesses are responsible to stakeholders and shareholders. This notion has been reinforced by the emergence of stakeholder theory as the prevailing paradigm. According to Deb et al. (2020), stakeholder theory posits that the implementation of green accounting and stakeholder intervention is contingent upon the interplay between companies and stakeholder influence, specifically in terms of the notion of utility, which fosters collaboration to achieve sustainable company growth.

**Meditation Analysis**

To evaluate the hypothesis further regarding the paths of stakeholders' influence (STAKE) on voluntary sustainability reporting (VSR) through corporate financial performance (CFP), the study utilized a simple meditation analysis for the years 2019-2022. This meditation impact is calculated using Hayes' (2013) PROCESS moderation model 4. The model delineates a solitary mediator that is causally positioned between X and Y. (See Figure 2 for simple moderation Model 1).

In a basic mediation model, a mediator variable M (ROI) influences the link between the antecedent variable X and the result variable Y. The relationship between VSR and CFP on STAKE is represented by a straightforward mediation model, specifically Hayes PROCESS model 4 (Hayes, 2013). The PROCESS model includes covariates that control independent variables (or predictors) suitable for regression analysis to help explain some of the variability in the dependent variable. A meditation variable is used as a means to assess further the hypothesis of the mechanisms through which stakeholders' influence on voluntary sustainability reporting (VSR) is mediated on corporate financial performance (CFP) from 2019 to 2022.

The mediation analysis is widely used to test and inform a theory and debate about the mechanism(s) by which causal effects operate, quantitatively operationalized as an indirect effect in a mediation model (Park et al., 2024). Ideally, it is recommended that researchers gather a comprehensive range of relevant covariates by drawing upon established theoretical frameworks, external empirical data, and expert opinions in the field (Cuartas & McCoy, 2021). The variable "ROI" is used as the meditating variable,

computed in Model 4. The covariates are independent control variables used in regression models as predictors to check how another variable affects different groups or populations (Garg et al., 2023). Garg et al. mediation analysis is frequently used to understand how some presumed causal antecedent variable (hereinafter, X) influences an outcome of interest (hereinafter, Y) by affecting one or more mediator(s) (hereinafter, M) that, in turn, influence the outcome. Garg et al. asserted that mediation models focus primarily on estimating the indirect effects of X on Y—are abundant in behavioral science research.

The model delineates a solitary mediator causally positioned between X and Y. Consequently, a simple mediation model with multi-categorical predictors examines the impact of the mediation variable. In practice, the parameters of this model are commonly calculated using two regression equations, one for the variable M and one for the variable Y (Park, 2024). Bootstrap and Monte Carlo confidence intervals are employed to make indirect effect inferences, encompassing diverse effect size measurements (Coutts & Hayes, 2023). In practice, Coutts and Hayes asserted that the parameters of this model are commonly calculated using two regression equations, one for the variable M and one for the variable Y. Because Hayes PROCESS Model 4 does not use dichotomous variables such as STAKE as a mediator variable, STAKE was used as a covariate to deal with spuriousness or other explanations for observed associations that compete with a causal interpretation. Utilizing the same seed number and 5,000 bootstrap samples in aggression analysis, a significant association is interpreted when the 95% confidence interval (CI) excludes zero.

Covariates are called nuisances because they can increase both variability and bias. However, including these nuisance variables in the model statistically controls their impact on the dependent variable, which can increase statistical power and reduce confounder bias. Covariates in the stricter context perform the same function as continuous predictors in the broader definition and are used in statistical models to account for factors that may influence the relationship between the independent and dependent variables. In other words, a covariate is a possible predictive or explanatory variable of the dependent variable that can influence the outcome of a given statistical trial, but which is not of direct interest.

The study assessed the mediating role of ROI, on the relationship between VSR and CFP. The results revealed a significant indirect impact of GRI19 and TOBINQ19 through ROI2019 ($b$= -0.022, $t$ = 0.503), supporting $H^1$. Therefore, hypothesis $H^2$ is rejected. Furthermore, the direct effect of GRI2019 on TOBINQ19 in the presence of the mediator was found insignificant ($b$ = -.039, $p$ < 0.649). Hence, ROI2019 did not partially mediate the relationship between GRI2019 and TOBINQ19. Additionally, ROA2019 was found to have a significant covariate affecting TOBINQ but had an insignificant impact on ROI2019. Therefore, GRI2019 is significant because it has a significant impact on ROI2019. However, ROA2019 and STAKE19 were found insignificant because they did not have an impact on GRI2019. TONINQ19 was also found insignificant, no impact was found on ROI2019. The mediation summary of all indirect and direct effects is presented in Table 7.

**Table 7**

*Mediation Summary*

| Year | Total Effect (GRI -> TobinQ) | Direct Effect (GRI -> TobinQ) | Relationship | Indirect Effect | CI | | *t* | Conclusion |
|---|---|---|---|---|---|---|---|---|
| 2019 | -0.041 (0.628) | -.0386 (0.649) | H¹: GRI-> ROI -> Tobin's Q | 0.239 | -0.025 | 0.013 | 0.503 | Completely mediated |
| 2020 | 3.641 (0.194) | 3.641 (0.205) | H¹: GRI-> ROI -> Tobin's Q | 0.073 | 0.245 | -0.445 | 0.297 | Completely mediated |
| 2021 | -0.287 (0.879) | -.0985 (0.958) | H¹: GRI-> ROI -> Tobin's Q | -0.188 | -0.899 | 0.267 | -0.657 | Completely mediated |
| 2022 | 4.459 (0.156) | 0.039 (0.649) | H¹: GRI-> ROI -> Tobin's Q | -0.060 | 1.011 | 0.895 | -0.134 | Completely mediated |

*Note.* The conclusion indicates that the result is not statistically significant. The effect is fully mediated, meaning that the impact of X on Y is entirely transmitted through the modeled mediator (Fairchild & McDaniel, 2017).

Source. SPSS 29.0.2.0 (2022).

This study also employed hierarchical multiple regression. Hierarchical multiple regression is a statistical method that enables the prediction of a dependent variable by considering several independent factors. It also considers the influence of covariates on the findings and considers the potential causal effects of independent variables when making predictions about the dependent variable. Hierarchical multiple regression allows for the quantification of the contribution of each set of factors to the prediction of the dependent variable, as indicated by the increase in $R^2$. The datasets are incorporated into the regression equation in a predetermined, consecutive sequence. The discrepancy in $R^2$ between Model 1 and Model 2 is the supplementary amount of variance accounted for in the dependent variable by incorporating extra variables. Hierarchical multiple regression

not only computes the increase in $R^2$ but also assesses if the increase is statistically significant.

The control variables of firm size and growth are included in Model 1, followed by the addition of the independent variable GRI in Model 2. This approach facilitates a more comprehensive comprehension of the distinct impact of several variables in forecasting the dependent variable. Table 8 describes two regression models, labeled Model 1 and Model 2. The initial model incorporates the control variables, while the subsequent model introduces the independent variable to the preceding model.

**Table 8**

*Hierarchical Multiple Regression*

| | Model 1 | | | Model 2 | | | |
|---|---|---|---|---|---|---|---|
| Dependent Variable | $R^2$ | Change in $R^2$ | *p*-value | $R^2$ | Change in $R^2$ | *p*-value | Durbin Watson |
| ROA 2019 | 0.02 | 0.02 | 0.23 | 0.03 | 0.03 | 0.28 | 1.83 |
| ROA 2020 | 0.07 | 0.07 | 0.01 | 0.07 | 0.07 | 0.02 | 1.94 |
| ROA 2021 | 0.00 | 0.00 | 0.73 | 0.01 | 0.01 | 0.57 | 1.99 |
| ROA 2022 | 0.02 | 0.02 | 0.21 | 0.05 | 0.05 | 0.08 | 1.93 |
| Tobin's Q 2019 | 0.01 | 0.01 | 0.69 | 0.01 | 0.01 | 0.76 | 1.98 |
| Tobin's Q 2020 | 0.05 | 0.05 | 0.02 | 0.06 | 0.06 | 0.03 | 2.00 |
| Tobin's Q 2021 | 0.01 | 0.01 | 0.42 | 0.02 | 0.02 | 0.52 | 2.12 |
| Tobin's Q 2022 | 0.00 | 0.00 | 0.81 | 0.01 | 0.01 | 0.62 | 1.94 |

Source. SPSS 29.0.2.0 (2022).

The change in the $R^2$ value from the previous model is recorded in the "$R^2$ change" column, along with whether this change is statistically significant in the corresponding "Sig. *f* Change" column, which contains the *p*-value. Model 1 reflects the control variables of firm size, debt-to-equity ratio, industry type, and sales growth. The $R^2$ for Model 1 = .02 and is not significant, $p = .23, < .05$. Model 2 increases $R^2$ by .03 for a combined total $R^2$ of .23, however, the addition of Model 2 is not statistically significant as the Sig. *f* change = .28, which is also greater than < .05. (See Table 9).

The unstandardized coefficients, denoted as "$\beta$," in Table 9 represent the amount by which the dependent variable changes when the independent variable increases by one unit. Typically, the $\beta$ statistic is either 0 or higher, indicating that a change in either the control variables or the independent variables lead to a change in ROA or Tobin's Q. The

Beta statistic ranges from -1 to 1, with the strength of the link increasing as the value approaches 1 or -1, depending on the direction. All of the Beta statistics described below have values that are closer to 0 than either -1 or 1. This suggests that there is a minimum correlation between the dependent variables and the control and independent variables.

**Table 9**

*Hierarchical Multiple Regression β and Beta Statistics*

| | | Model 1 | | Model 2 | |
|---|---|---|---|---|---|
| Dependent Variable | Variable | β | Beta | β | Beta |
| ROA 2019 | (Constant) | 2.3 | | 2.22 | |
| | Firm Size | -2.1E-10 | -0.07 | -2E-10 | -0.08 |
| | Firm Growth | 0.02 | 0.12 | 0.02 | 0.12 |
| | GRI2019 | | | 0.77 | 0.08 |
| ROA 2020 | (Constant) | 2.21 | | 2.23 | |
| | Firm Size | -1.1E-10 | -0.03 | -1.1E-10 | -0.03 |
| | Firm Growth | 0.04 | 0.25 | 0.04 | 0.25 |
| | GRI2020 | | | -0.10 | -0.01 |
| ROA 2021 | (Constant) | 1.731 | | | |
| | Firm Size | -1.1E-10 | -0.049 | -7.3E-11 | -0.03 |
| | Firm Growth | 0.01 | 0.05 | 0.00 | 0.03 |
| | GRI2021 | | | -0.65 | -0.10 |
| ROA 2022 | (Constant) | 1.94 | | 3.14 | |
| | Firm Size | -2.9E-10 | -0.145 | -2.6E-10 | -0.13 |
| | Firm Growth | 0.00 | 0.03 | 0.00 | 0.02 |
| | GRI2022 | | | -1.44 | -0.16 |
| Tobin's Q 2019 | (Constant) | 0.308 | | 0.32 | |
| | Firm Size | -2.4E-11 | -0.06 | -2.0E-11 | -0.05 |
| | Firm Growth | -0.001 | -0.04 | 0.00 | -0.04 |
| | GRI2019 | | | -0.08 | -0.06 |
| Tobin's Q 2020 | (Constant) | 10.58 | | 9.94 | |
| | Firm Size | 1.7E-09 | 0.17 | 1.7E-09 | 0.17 |
| | Firm Growth | -0.07 | -0.15 | -0.06 | -0.14 |
| | GRI2019 | | | 3.03 | 0.09 |
| Tobin's Q 2021 | (Constant) | 8.41 | | 9.00 | |
| | Firm Size | 7.7E-10 | 0.10 | 8.5E-10 | 0.11 |
| | Firm Growth | -0.02 | -0.05 | -0.02 | -0.06 |
| | GRI2019 | | | -1.40 | -0.06 |
| Tobin's Q 2022 | (Constant) | 10.634 | | 7.60 | |
| | Firm Size | 4.26E-10 | 0.052 | 3.6E-10 | 0.04 |
| | Firm Growth | 0.004 | 0.009 | 0.01 | 0.02 |
| | GRI2019 | | | 3.64 | 0.10 |

Source. SPSS 29.0.02.0 (2022).

The hierarchical multiple regression analysis was conducted to assess if the inclusion of control variables enhanced the accuracy of predicting ROA and Tobin's Q beyond the independent variables. The model did not show statistical significance for either ROA and Tobin's Q, as indicated by the $R^2$ values ranging from .05 to .20, *p*-values greater than .05, and both the "*β*" and Beta statistics being closer to zero than -1 or 1. The β statistic represents the unstandardized regression coefficient, which quantifies the rate of change in the independent variable resulting from a change in the dependent variables. On the other hand, the Beta statistic indicates the standardized coefficient, which measures the magnitude of the impact of each independent variable on the dependent variables. The magnitude of the Beta statistic directly correlates with the strength of the impact. The inclusion of the independent variables in the prediction of ROA and Tobin's Q did not lead to a statistically significant improvement in $R^2$.

**Evaluation of the Findings**

The study discovered that there is no significant relationship between VSR and CFP. This result is consistent with the findings of Budiman et al. (2021), who discovered no relationship between sustainability performance and financial performance. Contrary to previous claims, the study done by Friske et al. (2023) demonstrated a distinct correlation between sustainability activities and financial gains. The model employed in this investigation is insufficient in elucidating the data, as evidenced by the $R^2$ statistic, which only accounted for a mere 0% to 7% of the fluctuation in return on assets and 5% to 15% of the fluctuation in Tobin's Q. The Durbin-Watson statistics displayed values close to 2, suggesting that autocorrelation was not considered to be a problem. The

existence of multicollinearity was not considered worrisome. The predictor variable of environmental performance did not have a statistically significant relationship with either ROA or Tobin's Q, as evidenced by a coefficient $\beta$ close to 0 and a $p$-value more than < .05.

In terms of normalcy, the histograms showed a generally symmetrical and slightly right-skewed distribution resembling a bell-shaped curve for both the independent and dependent variables. (See Appendix I). To assess the degree of asymmetry in the histograms, normal Q-Q plots were used to determine whether the data sets could be properly believed to follow a normal or exponential distribution. The Q-Q plots show that in many cases, both sets of quantiles were drawn from a normal distribution, resulting in a primarily linear connection. In some cases, the existence of a little right skewness on the histogram inhibits complete confirmation of normalcy by Q-Q plot analysis. The presence of homoscedasticity was assessed by examining the error term across all values of the independent variables for their connections with ROA and Tobin's Q. The test findings showed no correlation between the studentized residuals and the unstandardized projected values.

The statistical analysis revealed that there was no significant association between VSR and CFP. This finding aligns with the study conducted by Grewatsch & Kleindienst (2019) that yielded inconclusive findings regarding the correlation between social performance and financial outcomes. The findings differ from those of Arbogast and Agawal (2019), indicating that there is no substantial relationship between social responsibility and profitability. The $R^2$ statistic indicates that the model used in this

investigation does not provide a significant explanation for the observed data. The coefficient of determination ($R^2$) accounted for just 5% to 15% of the variability in return on assets and 5% to 21% in net profit margin. The Durbin-Watson statistics were approximately 2, indicating that autocorrelation was not considered problematic. The existence of multicollinearity was not considered worrisome. The predictor variable of VSR did not show a statistically significant correlation with either Return on Assets (ROA) or Tobin's Q. This is evidenced by the coefficient ($\beta$) being proximate to zero and the p-value exceeding .05.

The histograms displayed a distribution that was almost symmetrical with a tiny skewness to the right and left. The distribution resembled a bell-shaped curve, indicating that both the independent and dependent variables met the normality requirement. To assess the asymmetry of the histograms, normal Q-Q plots were utilized to determine if the data sets could be properly believed to have a normal or exponential distribution. Many of the quantiles in both sets of Q-Q plots appear to have been drawn from a normal distribution, resulting in a highly linear pattern. The presence of homoscedasticity was evaluated by analyzing the error term across all values of the independent variables concerning ROA and Tobin's Q. The test results indicated a lack of association between the studentized residuals and the unstandardized projected values.

The correlation between VSR and CFP was determined to be statistically insignificant. The outcome aligns with the findings of Kowsana & Muraleetharan (2021), who found no definitive evidence of a correlation between sustainability performance and financial outcomes. The model used in this study did not effectively explain the data, as

evidenced by the $R^2$ statistic, which only accounted for 0% to 11% of the variation in return on assets and 0% to 23% of the variation in Tobin's Q. The Durbin-Watson statistics have values near 2, indicating that autocorrelation was not considered problematic. The presence of multicollinearity was not considered to be troublesome. The predictor variable of sustainability performance did not exhibit a statistically significant correlation with either ROA or Tobin's Q, as the coefficient ($\beta$) was close to zero and the p-value was more than 0.05. The histograms exhibited an almost symmetrical and slightly right-skewed bell-shaped distribution for both the independent and dependent variables, indicating conformity to the assumption of normality.

To analyze the asymmetry of the histograms, normal Q-Q plots were utilized to determine if the data sets likely originated from a normal or exponential distribution. It seems that in numerous instances, the quantiles in both sets of Q-Q plots originated from a normal distribution, leading to a rather linear relationship. Several Q-Q plots showed deviations from a normal distribution, with the distribution line falling significantly below or above the expected normal curve. In many instances, the presence of a minor rightward skewness on the histogram prevents complete confirmation of normality when examining the Q-Q plots. The presence of homoscedasticity was assessed by examining the error term overall values of the independent variables for the connections with ROA and Tobin's Q. The test results indicated that there was no relationship between the studentized residuals and the unstandardized predicted values.

## Summary

The empirical findings from the current literature review suggested that the company's profitability, growth, size, ROI, GRI rating, and ESG score, among other factors, are essential variables that affect the corporate financial performance of the aerospace and defense industry. Furthermore, many theories and models have been examined to provide a rationale for the impact of stakeholder influence on the correlation between corporate financial success and sustainability reporting within the aerospace and defense industry. The literature established and emphasized the negative, positive, and inconstancy among scholars in the relationship between corporate financial performance and sustainability reporting. Additionally, large organizations are perceived as having greater sustainability transparency, this transparency is unrelated to their financial behavior (Alcaide González et al., 2020). Alcaide González et al. questioned the apparent benefits of consistent behavior and undeniable superiority over other environmental positions. They highlighted that the market values visibility and responsiveness to environmental challenges, as evidenced by their environmental disclosure (Amores-Salvadó et al., 2022), which might cause doubt on the ostensible advantages of consistency in conduct and undisputed dominance over other environmental views.

Amores-Salvadó et al. argued that specific corporate environmental postures have managerial consequences based on environmental accomplishments and communication, describing their nature and critical implications for company market performance. For example, decision-makers want to consider the ideal board size for firms with various specialties, a cost-benefit analysis for frequent board meetings, and value addition to the

time being watched. Thus, disclosing ESG scores will considerably improve corporate moral conduct and the long-term viability of shareholder wealth.

The literature review provided in this chapter explored the relative conceptual frameworks and significant themes related to sustainability, sustainability reporting, stakeholder influence, and corporate financial performance in previous studies. Then, sustainability reports and the relationship between voluntary sustainability reports and corporate financial performance and the associated variables were expanded upon to further explain the sustainability financial performance connection.

Although sustainability is gaining acceptance, the relationship between sustainability practices and financial performance is unclear. By its very nature, corporate social responsibility is a multi-faceted process that includes multiple perspectives. Organizational legitimacy and stakeholder pressure were also discussed as they are essential areas of study for researchers to understand better how sustainability is related to financial results. The need to better understand the connection between sustainability practices and economic results and the ancillary elements that underpin these relationships was also discussed. In addition, the conversation encompassed the theoretical framework, the variables commonly linked to sustainability reporting and corporate financial performance, the aerospace and defense sector, and the impact of stakeholders.

Several studies have shown the interconnectedness between diverse stakeholder groups, the sustainability strategies of organizations, and how companies can impact the environment and society (see Appendix A).

However, none of the reviewed studies investigated the role of stakeholder influence as a moderator and mediation variable to financial performance, particularly within the aerospace and defense industry. This lack of research has resulted in a gap in the existing literature, prompting an inquiry into the relationship between stakeholders' influence on voluntary sustainability reporting and corporate financial performance. Thus, the current study examined stakeholder influence over the aerospace and defense industries' sustainability reporting and corporate financial performance initiatives.

# Chapter 5: Discussion, Recommendations, and Conclusions

## Discussion

This study investigated whether there is a relationship between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and defense industry. It addressed whether stakeholder influence is related to financial results for companies in the aerospace and defense industry. Although much research has been undertaken on the relationship between sustainability reporting and corporate financial performance, the existing literature is inconclusive, as noted (Grewatsch & Kleindienst, 2019). There is little research that has investigated whether stakeholders influence a firm's VSR and subsequently its financial performance (Xie et al., 2019).

This quantitative study aimed to analyze factors that could establish a relationship and enhance the ability to predict the impact of VSR on the CFP of companies in the aerospace and defense sector while controlling for sales growth and firm size, measured by total assets, as control variables. The study utilizes indicators such as VSR, stakeholder influence (STAKE), and CFP, which encompasses ESG factors. Greater engagement and integration in ESG domains are correlated with improved financial success. Financial performance directly impacts a company's involvement in an ESG strategy. Furthermore, several academics argue that ESG practices not only boost stakeholders' trust in the company but also lower financing costs, leading to an improvement in CFP (Gebhardt et al., 2023 & Hamdi et al., 2022). Past studies have used ESG integration to explore possible synergies among the metrics (Liu et al., 2022).

Connecting ESG to create the sustainability factor indicates progress in social and environmental efforts within companies. Business executives participating in both activities may discover cost efficiencies within ESG programs (Hamdi et al., 2022). Hamdi et al. stated that the study of sustainability responsibility and its outcomes has been a significant concern for various stakeholders, such as government and non-government organizations, investors, and scholars, in recent decades.

The researcher applied a non-experimental, correlational methodology to investigate Fortune 500 aerospace and defense VSR policies and their impact on CFP. The correlational design was ideal for investigating potential correlations between the known quantitative independent factors of VSR and the dependent financial variables. This strategy proved appropriate for determining the strength and direction of the association between the variables. To accomplish this, the prospective financial impact of VSR was assessed at one, two, three, and four-year intervals. This strategy accounted for the long-term nature of VSR vs the relatively short-term nature of financial results, as demonstrated in previous studies (Friske et al., 2023).

Additionally, the study examined the potential ramifications of stakeholder influence “STAKE” on VSR. Through analyzing stakeholder feedback, organizations have identified opportunities to enhance the effectiveness of their signals. As stated by Christensen et al. (2021), businesses are compelled to disclose information about sustainability hazards due to investor pressure. In response to this demand, businesses disclose this information by publishing sustainability reports. The demand for information regarding CSR and the ESG activities and policies of businesses is increasing

in tandem Christensen et al asserted with the growing interest in sustainable investing. Certain sustainability information is included in regulatory filings by companies registered with the US Securities and Exchange Commission (SEC) (SASB 2017). Nonetheless, a large portion of this data is optional. Thus, it should be no surprise that investors lament the absence of comparable and independent data (Bernow et al., 2019).

This study investigated the possible connections between VSR and CFP. The research question focused on the relationship between sustainability reporting and CFP and concluded that there was a minimal correlation between the variables that did not reach statistical significance. P-values were greater than .05, and two-tailed significance values were close to zero. The null hypothesis, which posits no connection between voluntary sustainability reporting and corporate financial performance on stakeholders' influence in the aerospace and military industry, could not be rejected.

Limitations encompass deficiencies in the research process that may affect the outcome of the undertaking and are associated with the methodology employed, sample selection, or measurement techniques (Theofanidis & Fountouki, 2018). The cohort for this research comprised leading aerospace and defense corporations in the United States, excluding small and medium-sized organizations. The inclusion of companies of various sizes could have potentially impacted the study's findings and yielded different data. Additionally, the study's scope was limited to four industries that are classified as aerospace and defense industry. In addition to addressing the study's implications and limitations, this chapter provides suggestions for future research and practice. In

conjunction with concluding remarks, this chapter also addresses potential avenues for future research.

**Limitations of the Study**

The study overcame several barriers and limitations, which did not affect the overall success of the investigation. The primary constraint was the accessibility of financial data and ESG ratings for the aerospace and defense companies. The sample comprised 150 aerospace and defense businesses. The data were collected from various sources, including companies' financial statements, Fortune 500, Morningstar, Securities and Exchange Commission (EDGAR), Sustainalytics, and Bloomberg ESG databases. Acquiring the financial statements and ESG ratings of 150 aerospace and defense companies proved difficult. Data for variables such as ROA, ROI, GRI, firm size, and growth were rarely available. The data analyzed was represented as a two-dimensional rectangular array. The second constraint was the data's secondary nature. The data were derived from financial statements. The third limitation is the total number of firm-year observations that lack a published ESG Risk Rating from 2019 to 2022. The study successfully achieved its aims despite the restrictions.

Access to secondary data from financial reports of aerospace and defense industries and other confidential publications may have been restricted, thus limiting the quality and quantity of data acquired. This data is frequently valuable for understanding how capital is financed in many aerospace and defense companies. Aerospace and defense companies could hesitate to disclose vital organizational data or publish data

quarterly. Analyzing leverage ratios, debt levels, market prices per share, and weighted average capital costs can be challenging due to the large data sets involved.

**Implications**

There is an ongoing debate about the connection between VSR and CFP. Further investigation into this relationship is necessary as policies promote sustainable practices and strategies to improve society, which can influence firms' performance (Ortiz-Martínez et al., 2023). Stakeholder effects can vary greatly and impact competitive advantage, reputation, customer happiness, productivity, access to capital, company image, social resources, and corporate visibility.

Business leaders find it difficult to adopt social and environmental programs due to the weak connection to financial benefits despite the importance of sustainability. This result is attributed partially to the enduring character and influence of sustainability initiatives, which contrast with the short-term financial objectives of numerous business managers and may not be immediately apparent to stakeholders. Therefore, it is inevitable that substantial sustainability practices will influence a vast array of business operations, especially in developing economies where domestic accounting standards have fallen behind global benchmarks designed to enhance the comparability of financial statements. In such contexts, the significance of earnings will extend beyond nonfinancial stakeholders to include shareholders (Thuy et al., 2021). Stakeholders in firms with high CSR are more inclined to offer resources and effort to the company, which may lead them to agree to less advantageous explicit contracts compared to stakeholders in low CSR businesses. Sustainability initiatives are viewed as a means to enhance stakeholder

relationships and cultivate a reputation for environmental and social responsibility (Bartov et al., 2021).

A management approach known as sustainability aims to protect the environment and promote social growth at the same time. The quicker restatement process used by high-CSR businesses can be of interest to the market. If a company demonstrates a strong commitment to corporate social responsibility and any inadvertent faults are seen as isolated instances beyond management's control, then lenders and equity investors are more likely to have faith in it. The company's CSR performance may exacerbate the negative reaction of the market to restatement news when there are erroneous restatements. Even if the company keeps up its financial performance, lenders and investors could lose faith in the management (Bartov et al., 2021).

Smaller organizations, in addition to major Fortune 500 firms, place a high importance on environmental and social responsibility. Medium and small enterprises have the opportunity to participate in environmental initiatives. The study's results, based on a sample of leading aerospace and defense companies in the Fortune 500, indicate that there may not be a clear correlation between implementing sustainability measures and a company's financial performance despite the significance of these efforts. Academics, governments, and corporate executives prioritize environmental and social responsibility programs due to their economic implications. Community engagement and environmental preservation are crucial for the sustained prosperity of enterprises and society. Dmytrivev et al. (2021) assert that stakeholder theory is vital for society as organizations play a

significant role in the communities, they are part of, and sustained success necessitates considering the interests of all stakeholders.

Studies have demonstrated that combining social and environmental responsibility efforts can enhance financial performance and reduce organizational risk (Duc et al., 2021). The relationship between sustainability programs and financial success has yielded conflicting results over many years. Various studies, including the current one, have found that adopting sustainable practices can lead to benefits like increased competitiveness, social responsibility, cost savings, and environmental awareness. However, no direct relationship has been proven between these advantages. It is widely believed that sustainability efforts will ultimately be advantageous for organizations despite the equivocal results of several research (Hongming et al., 2020).

President Biden issued an executive order in 2023 to reinstate the nation's commitment to environmental justice for all. Both Vice President Harris and President Biden insist that everyone should have an unalienable right to clean water, air, and communities that are healthy, both now and in the future. President Biden is expected to enact more stringent environmental laws, including higher restrictions for manufacturing, pollution, and emissions. The presidential decree was issued to recommence efforts to strengthen environmental regulations. The White House (2023) stated that this involves stopping the progress of the Keystone XL pipeline and implementing actions including reducing greenhouse gas emissions, enforcing stronger fuel economy regulations, and imposing carbon taxes. President Biden supports legislation or SEC regulations that

require public corporations to report their environmental scores, including greenhouse gas emissions.

The Biden administration will gain a more thorough understanding of ESG reporting through administrative reforms and presidential decrees. The presidential declaration aimed to reignite the push for more stringent environmental rules. In 2023, the White House claims that this will hinder the advancement of the Keystone XL project and supports the enforcement of laws such as carbon taxes, stricter fuel efficiency standards, and decreased greenhouse gas emissions. The policy measures examined in this study are linked to a greater focus on ESG activities, and reporting is anticipated to result in a fresh and improved understanding of their influence on financial performance (Naishadham, 2024).

The research findings showed no notable disparity in the response variables for ROA and Tobin's Q. No extra significance was seen when the dependent variables were delayed for one, two, three, and four years. After one, two, three, or four years, there seems to be little impact of environmental, social, or sustainability performance on financial performance. Given the very nonexistent correlations of each coefficient, it can be inferred that financial performance and sustainability performance are not connected.

Even though several scholars found a financial benefit resulting from environmental and social investments, this study did not find a significant relationship between VSR and CFP, similar to Adamkaite et al., (2023); Alshehhi et al. (2018); and Pillai & Al-Malkawi (2018). Many elements can affect profits, including the degree of competition a firm faces, stakeholders' influence, and the state of the economy. Other

factors include the strength of demand, management, and relative costs. For example, the implementation costs of sustainability programs may be greater than the financial benefits gained over the project's life. Resultantly, many attributes and effects could impact the relationship between VSR and CFP. For example, it may be that some sustainability initiatives take more than three years to recuperate the initial investment or stakeholders influencing an organization's mission and strategy composition. Future research studies could expand their analysis of the variables to a longer time frame. Or investigate the three levels of stakeholder influence posited, namely the macro level (role of the environment in stakeholder influence), middle level (influence between a firm and stakeholders), and micro level (influence between stakeholders themselves embedded in the same network) (Fares, 2023). Also, this study focused only on the aerospace and defense industries, and it may be possible that there are industries such as construction, hospitality, or entertainment that may have a stronger correlation between environmental, social, sustainability, and financial performance.

This research did not offer evidence either supporting or disproving the concept that sustainability activities lead to positive financial consequences. The study utilized mediator and moderating variables such as STAKE, return on investment (ROI), and sustainability performance to investigate their relationship with the dependent variables ROA and Tobin's Q, aiming to identify the relationship between VSR and CFP and the factors influencing financial performance. There may not be enough evidence to confirm or deny the stakeholder hypothesis, given that there is no statistically significant association between ROA and Tobin's Q and GRI ratings. Business executives should

reassess the justification for emphasizing environmental and social responsibility above corporate citizenship when implementing sustainability projects, considering the goals of the Biden administration and the growing importance placed on ESG reporting. Corporate management may need to reassess its economic plans, environmental initiatives, and community engagements. If company CEOs do not act on sustainability objectives, government organizations might enact laws requiring enhanced sustainability practices.

**Recommendations for Practice**

To determine whether the adoption of VSR has an impact on CFP, this study used Tobin's Q and ROA as financial metrics (Hamdi et al., 2022). To better understand the impact of VSR on CFP, carrying out a comparable research study with small and medium-sized businesses based on total sales could be helpful. Despite the lack of evidence linking VSR to CFP or stakeholder influence, this study has led to a greater appreciation of the significance of sustainability programs. Concerns regarding the aerospace and defense industry's environmental and societal effects are growing among stakeholders, including communities, environmentalists, and customers (Dimitrova et al., 2021)

Increased regulatory protections to protect the environment and address societal demands result from stakeholder pressure. Research indicates that customers like businesses that contribute to environmental preservation by recycling, using less energy, and cutting down on waste. Many suppliers and customers are reluctant to work with companies that pollute or use natural resources inefficiently. It has been demonstrated

that a company's reputation and competitive advantage are enhanced by preserving the environment and enhancing community circumstances since these initiatives foster stronger stakeholder interactions (Fares, 2023). Despite the lack of a direct correlation between VSR and financial performance, as established by this study, corporate management stands to gain further insights into the additional advantages that can be gained by adopting sustainability measures. Strong awareness persists regarding the environmental impacts of business, specifically climate change (Hamdi et al., 2022). It is sometimes unclear what causes sustainability and economic outcomes because the consequences of sustainability initiatives are often long-term and never visible in the short run. As time passes, stakeholders and shareholders will gain visibility into initiatives that promote societal well-being and environmental protection (Lambrechts et al., 2019). This shift in mindset, which emphasizes the bottom line and its consequences for society and the environment, is becoming increasingly visible. Corporate management generates shareholder wealth while minimizing harmful environmental or societal repercussions.

This study did not show a significant correlation between ESG ratings and financial performance indicators such as ROA and Tobin's Q, indicating a lack of considerable relationship between VSR and CFP. While there is no empirical evidence to support investing in financial sustainability, promoting initiatives that increase awareness of environmental and societal well-being could nonetheless enhance firm performance. This study might prompt company managers to reevaluate the factors when examining the correlation among environmental, social, sustainability, and financial achievements.

**Recommendations for Future Research**

This study corroborates Mohamed Buallay et al. (2023) need for additional research. Further investigation into the factors that influence stakeholders, in addition to extending the duration of the study and incorporating supplementary financial or nonfinancial indicators, could prove beneficial to future researchers. Reputation, brand recognition, and innovation are all indicators of nonfinancial success. Client retention, employee engagement, and contentment are additional factors to consider. For the success of a business, any one of these elements is mandated. These qualities potentially result in enhanced financial performance as they confer a competitive edge. A comprehensive assessment of a prosperous organization is beyond the scope of the present study, as it solely evaluated financial data and ESG scores.

To better understand the association between sustainability performance and financial performance, I suggest that further research be performed to ascertain whether other nonfinancial factors impact the relationship between sustainability performance and financial performance. Additionally, other financial measures could be used, such as return on equity, cash flow, and net income growth, to analyze whether there is a relationship between sustainability performance and financial performance. Using different financial metrics may allow for an increase in understanding of the relationship between profitability and sustainability endeavors. A more extended period should be studied in tandem using additional financial and nonfinancial measures to explore the relationship between sustainability performance and financial performance due to sustainability investments' long-term nature. Another factor to consider is the influence

the type of industry may have on the relationship between sustainability performance and financial performance. For example, a food and beverage company may appear to be more environmentally friendly than a chemical company. Future research should consider these variances.

Future consideration should be given to the recommendations put forth by President Biden, considering the administration's social and environmental objectives. The Biden administration established the inaugural environmental justice scorecard, a comprehensive evaluation of federal agencies' endeavors to attain environmental justice, intending to reinstate the United States' dedication to environmental justice for all. Additionally, it increases federal environmental justice policy transparency and accountability (The White House, 2023). In addition to input from the general public, environmental justice organizations, and professionals, the Scorecard incorporates suggestions put forth by the White House Environmental Justice Advisory Council (The White House, 2023). A greater degree of stakeholder pressure will be directed at business executives to hold them accountable for their conduct concerning social and environmental issues as a result of these sustainability initiatives.

The Biden administration's executive order mandates that firms offer increased information and transparency regarding environmental issues and greenhouse gas emissions to combat climate change. The Biden administration's social policy prioritizes addressing racial imbalances, environmental regulation, and the welfare of employees and the local community. In addition, to address environmental concerns, the Biden administration banned oil and gas extraction on federal lands, set methane emission

restrictions, and enhanced EPA operations (EPA Press Office, 2023). The societal cost of greenhouse gas emissions was also the subject of a newly created committee.

The SEC has also taken steps to improve and standardize climate disclosures made by publicly traded companies and initial public offerings (IPOs). The final rules are a result of the Commission's attempts to find a middle ground between investor demands for more consistent, comparable, and trustworthy information regarding the financial effects of climate-related risks on a registrant's operations and how those risks are managed and concerns about reducing the costs of the rules (The Securities and Exchange Commission, 2024).

The Biden administration's environmental policies will significantly affect the Aerospace Industries Association. The AIA will encounter opportunities and challenges due to defense budget reductions and the government's focus on addressing climate change through emission reduction and enhanced fuel efficiency (Mason et al., 2020). One of these goals is to cut the carbon footprints of US manufacturing companies by 50%. An official statement was released by AIA President and CEO Eric Fanning on February 24, 2022, in reaction to the announcement made by the Biden administration. The aerospace and defense supply chain, comprising tens of thousands of small and medium-sized enterprises, serves as the backbone of the aerospace industry, according to Fanning (2022). Fanning asserted both he and the Biden administration wish to maintain the sustainability and robustness of the global supply chain. AIA predicts that to preserve the United States' global competitiveness in the 21st century, the strategy will prioritize supply chain strengthening (Admin, 2022).

Over time, Biden's executive order to revitalize our nation's commitment to environmental justice for all is expected to reduce its adverse impact on the environment, decrease carbon emissions, and enforce environmentally friendly standards for aerospace products and activities. Aerospace firms are recognizing the necessity of adopting sustainable practices to ensure the longevity of their business due to the increasing global awareness of environmental protection.

Further investigation is required in the future to ascertain the relationship between CFP and VSR performance so that corporate executives can make more informed judgments concerning their social and environmental obligations, according to the study's results. It is advisable to examine these connections over more extended durations, utilizing a more limited sample size and focusing on distinct sectors within the aerospace and defense industry. VSR performance was not significantly impacted by the change in ESG scores from 2019 to 2022, and the change in financial ratios lagged for four time periods during that same period. The absence of a statistically significant correlation among these variables, coupled with the low $R^2$ values, suggested that the employed models were inadequate for forecasting forthcoming financial outcomes. As a result, it is suggested that forthcoming research incorporate additional variables and extend the duration of the studies to enhance comprehension of these associations.

One limitation of the study is that each firm selected reported a distinct ESG score. Despite differences in business sectors, each corporation in the Bloomberg ESG database is assigned a score based on the same criteria. The aerospace, defense, and automobile manufacturing industries often have significant hurdles in meeting

environmental regulations, unlike the textile and technology sectors. Applying industry-specific criteria may lead to differences in Bloomberg's weighted average rankings. Another constraint is related to the current financial performance measurements; additional indicators could be added. The study excluded small and medium-sized firms as a constraint. The study's conclusions could have differed if these limits had been followed.

**Conclusions**

This quantitative, nonexperimental study examined the relationship between VSR and CFP using statistical analysis techniques. There have been scholarly inquiries into the potential correlation between VSR and CFP for several years. The task of reconciling the financial prosperity of an organization with its social and environmental obligations has demonstrated itself to be a formidable one for corporate leaders. The lack of correlation between VSR activities and CFP outcomes, as determined by the data analysis of this study, provides support for the null hypothesis, and establishes that stakeholder engagement does not have a positive impact on financial performance. It is prudent for business executives to consider the potential financial benefits that social and environmental investments could provide.

Many investigations obtained different conclusions while trying to identify these linkages. This report provides additional information to company leaders to help them decide whether to finance green initiatives. This study demonstrates that people affected by environmental and social activities are actively engaged, regardless of their absence of

financial benefits. Businesses should also consider the environmental and social impacts of their sustainability strategy and financial gains.

The study's emphasis on the relationship between financial performance and environmental accomplishments will offer significant insights for company decision-makers and stakeholders. The study did not find a direct link between implementing sustainable practices and a company's financial performance, but it suggests that the organization's reputation and competitive edge could impact sales. Customer happiness and repeat business are still important factors to consider, although not easily measured financially. Companies that exploit people and the environment face regulatory fines, a damaged public image, and unhappy customers. Businesses can benefit significantly by protecting the environment and investing in the community, such as building a loyal customer base and brand champions. The study found no statistically significant association between financial success and sustainability performance. This is partially due to the shortcomings of the analysis. The study's conclusions provide a basis for additional research on the relationship between financial well-being and environmental conservation. This research narrows the gap between financial outcomes and environmental initiatives.

Numerous academic studies were reviewed throughout the investigation, some supporting and others refuting that financial performance and sustainability achievement are interconnected. It is recommended that business management consider investing in sustainability efforts for their nonfinancial benefits, even if a study found no association between these investments and financial outcomes. Environmental and social projects

should be continued due to their benefits for several stakeholders. This research can help company leaders understand how financial investments in socially and environmentally responsible initiatives can advance corporate responsibility goals.

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# Appendix A: Summary of Previous Studies

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Abdulkarim et al. (2022). | Towards Effective Environmental Sustainability Reporting in the Large Industrial Sector of Bahrain. | Bahrain | Do Bahraini companies have sustainability reports, and if so, are these reports based on GRI guidelines? Has the status of their sustainability reports been analyzed? | Quantitative content analysis | Business social responsibility | Materiality analysis in reporting helps companies monitor and measure their environmental performance and implement SDGs, and. sustainability reports have not been analyzed |
| Alcaide González et al., (2020). | The impact of corporate social responsibility transparency on the financial performance, brand value, and sustainability level of IT companies. | IT sector | H3. The transparency of companies reflected in their sustainability reports relates to their solvency ratings provided by credit rating agencies. | Quantitative content analysis | Survey of the literature | Large companies are more transparent in sustainability rather than financial behavior. Additionally, transparency affects credit ratings. |
| Almeyda & Darmansya (2019). | The influence of environmental, social, and governance (ESG) disclosure on firm financial performance. | Real estate sector | H1: There is multicollinearity | Qualitative and quantitative | Neoclassical | A positive relationship exists between ESG disclosure and firm ROA and ROC, but not with Stock Price or P/E. Environmental factors have a statistically significant positive effect on firm ROC and stock price. There is no correlation between social and governance factors and firms' financial performance. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Amores-Salvadó et al., (2022) | Walking the talk, but above all, taking the walk: Looking green for market stakeholder engagement. | European, American, and Canadian public industrial firms | Which environmental positioning is most valued by investors and financial markets? | Qualitative and quantitative | Signaling & Stakeholder Theory | The empirical analysis of a panel dataset of international industrial firms yields intriguing and novel insights. These findings stress the importance of green practices and image. |
| Aslam et al., (2018) | The impact of corporate governance and intellectual capital on firm's performance and corporate social responsibility disclosure. | Australian | H1: Companies disclose more CSR information when they have strong CG structures. H2: High IC values lead to profit maximization for the company. | Quantitative | Single theory, Legitimacy theory, Stakeholder theory, and Agency theory. | Firms with good corporate governance are more environmentally friendly, and CG and IC improve financial performance. |
| Aureli et al., (2020) | The value relevance of environmental, social, and governance disclosure: Evidence from Dow Jones Sustainability World Index listed companies. | All over the world | (a) Do investors react to the publication of sustainability reports on company websites? (b) Has the market reaction to the publication of the sustainability report increased in the last few years? | Event study analysis | Neo-classical economic theory, | European investors valued information, particularly before the financial crisis, and identified market differences. |
| Beddewela & Fairbrass (2016) | Seeking Legitimacy Through CSR: Institutional Pressures and Corporate Responses of Multinationals in Sri Lanka. | Sri Lanka | How do the host-country institutional actors influence the CSR activities of MNEs? How do MNEs use CSR activities to seek legitimacy from host-country institutional actors? | Quantitative | Legitimacy | Industry control by the government and institutional actor power influenced the ten subsidiaries' CSR activities, with subsidiaries using CSR pragmatically and instrumentally and seeking legitimacy differently. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Ben Saad & Belkacem (2022). | How does corporate social responsibility influence firm financial performance? | French | H1: CSR influences firm financial performance | Quantitative | Social contracts theory, Instrumental theory, and Stakeholder theory | There is a positive correlation between CSR and financial performance, which is mediated by the capital structure channel. |
| Bhat (2018). | Corporate governance and firm value: a comparative analysis of state and non-state-owned companies in the context of Pakistan. | Pakistan | H1: Board size has a positive impact on firm value. H2: Board independence has a positive impact on firm value. | Qualitative | Agency theory and Stewardship theory | Board independence positively affects firm value only in state-owned companies. Both state- and non-state-owned enterprises' substantial value positively correlates with market capitalization and return on assets. |
| Borodin (2019). | The impact of the publication of non-financial statements on the financial performance of companies with the identification of interpectoral features. | Russian | H1: The publication of non-financial statements results in an increase in the ratio of the market value of capital to the balance sheet starting in the year following Publication. H2: The publication of non-financial statements increases the return on assets starting in the year following Publication. | Quantitative | Corporate finance theory | The non-financial publication has a longer-term effect on ROA gains and a faster effect on the Q-Tobin coefficient. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Brotons & Sansalvador (2020). | The relation between corporate social responsibility certification and financial performance: An empirical study in Spain. | Spain | H1: The IQNet SR10 certificate does not alter the value of a company, as opposed to the alternative hypothesis that the differences found are significant, and consequently, the IQNet SR10 certificate does alter the value of a company. | Quantitative | Financial theory | The results show that IQNet SR10 certification increased the value of 67.74% of companies. Neither size nor company sector affects the relationship between IQNet SR10 certification and business value, with a significance of 5% and a confidence level of 1. |
| Buallay (2019) | Sustainability reporting and firm's performance: Comparative study between manufacturing and banking sectors. | Banking sector | Why does ESG sometimes prove to be a net cost while it is a net benefit? Does ESG have different effects on different performance indicators? H1: There is a positive relationship between ESG and operational performance (ROA). | Quantitative | Stakeholder theory and Legitimacy theory | The findings show that ESG positively affects the manufacturing sector's operational, financial, and market performance, while ESG negatively affects the banking sector's operational, financial, and market performance. |
| Camelia Oprean-Stan et al., (2020). | Impact of Sustainability Reporting and Inadequate Management of ESG Factors on Corporate Performance and Sustainable Growth. | Europe | H1: There is no significant correlation between the ROA and the independent factors. H2: There is no significant correlation between Tobin's Q and the independent factors. H3: There is no significant correlation between SGR and the independent factors. | Quantitative and qualitative | Value creation theory | The finding shows no evidence that sustainability reporting positively affects market performance. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Chiek et al., (2021). | The cyclic relationship between environmental, social and governance (ESG) disclosure and corporate financial performance (CFP) in a regional economy. | Malaysian | H1: Company financial performance in period 1 has a significant impact on ESG disclosure in period 2. | Time horizon design | Slack resources theory, Stakeholder theory, and Agency Theory | Malaysian companies benefit financially from sustainability reporting by reducing stakeholder information asymmetry. |
| Cho et al., (2019). | Study on the Relationship between CSR and Financial Performance. | Korean | H1. CSR will exert a statistically significant influence on firm profitability. H2. CSR will exert a statistically significant influence on firm growth potential. | Quantitative | Stakeholder theory | CSR performance significantly boosts firm value and profitability. |
| Crossley et al., (2021). | Sustainability and legitimacy theory: The case of sustainable social and environmental practices of small and medium-sized enterprises. | Korean | Why do SMEs engage in SEPs, based on their type and level of legitimacy on the substantive/symbolic legitimation continuum? | Quantitative | Sustainability and Legitimacy Theory | SME legitimacy extends morally and pragmatically. |
| Dalal et al., (2019). | ESG and corporate financial performance: A panel study of Indian companies. | Indian | H2: There is a significant positive relationship between ESG factors and the profitability of Indian public limited companies. H1: There is a significant positive relationship between ESG factors and the value of Indian public limited companies. | Qualitative | Slack resource theory | Good corporate ESG performance enhances financial performance evaluated through accounting and market-based measures. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Danisch (2021) | The Relationship of CSR Performance and Voluntary CSR Disclosure Extent in the German DAX Indices. | German | H1. There is a relationship between corporate environmental performance and environmental GRI disclosure extent. H2. There is a relationship between corporate social performance and social GRI disclosure extent. | Quantitative | Legitimacy - and voluntary disclosure theory | Environmental performance and disclosure are positively correlated, but social performance and disclosure are not. |
| Darnall et al., (2022). | Do ESG reporting guidelines and verifications enhance firms' information disclosure? | Japan | Do firms that follow ESG reporting guidelines improve the quantity of their information disclosure? H1. Compared to firms that do not follow ESG guidelines, those that follow ESG reporting guidelines are more likely to disclose more sustainability information. H3: Compared to firms that follow ESG guidelines and pursue process-focused verification, firms that follow ESG reporting guidelines and pursue content-focused verification are more likely to disclose a greater quantity of sustainability information. | Quantitative | Institutiona l theory | Companies that use ESG reporting criteria publish 39% more textual information about their environmental sustainability operations. |
| Dragomir et al., (2022). | The Predictors of Non-Financial Reporting Quality in Romanian State-Owned Enterprises | Romanian | H1: The quality of non-financial reporting by SOEs is negatively influenced by the state's ownership concentration. H3: The quality of SOEs' corporate governance mediates the relationship between the state's ownership concentration and the quality of non-financial reporting by SOEs. | Quantitative | Agency theory and Stakeholder theory | The NFR quality score is positively correlated with corporate governance, company size, environmental impact, monopolistic position, and strategic interest but negatively correlated with state ownership concentration. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Gangi et al., (2022). | The sustainable development of the aerospace industry: Drivers and impact of corporate environmental responsibility. | Aerospace companies | H1a. Effective board characteristics positively impact CER engagement in the aerospace industry. | Quantitative | Stakeholder theory | The board of directors' features positively predict CER engagement. |
| Hassan et al., (2020). | Impact of integrated audit management effectiveness on business sustainability in manufacturing firms. | Malaysian | H1: Bangladeshi companies that provide disclosure on sustainability are likely to get their sustainability information assured. | Quantitative | Dynamic capability and Contingenc y theory | Human resources, technology, and quality capabilities strongly influence the internal audit process, leading to effective integrated audit management and corporate sustainability. |
| Hategan et al., (2018) | Doing well or doing good: The relationship between corporate social responsibility and profit in Romanian companies. | Romanian | H1. There is a significant correlation between “doing good” and “doing well.” | Qualitative and quantitative | Stakeholder theory | Companies that implement CSR activities to a greater extent are more economically profitable. |
| Isaksson & Steimle (2009) | What does GRI reporting tell us about corporate sustainability? | Building industry | How well are the main indicators describing the relative level of sustainability compared to other companies in the same industry? | Qualitative | Stakeholder theory | Current GRI rules should be revised for relevant and precise cement sector sustainability reporting. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Janang et al., (2020). | Corporate Governance and Corporate Social Responsibility Society Disclosure: The Application of Legitimacy Theory. | Malaysian | H1: There is a positive relationship between the audit committee and society disclosure. | Quantitative | Legitimacy theory | Audit committees, independent directors, and size greatly affect society's disclosure. |
| Kowsana & Muraleethar an (2021). | Sustainability reporting based on GRI standards and corporate financial performance: a study on selected listed companies in Sri Lanka | Sri Lanka | Is there any relationship between Sustainability Reporting and the Corporate Financial Performance of Listed Companies in Sri Lanka? H1: There is a significant impact of SR on CFP. H1a: There is a significant impact of SR on ROA. H2a: There is a significant relationship between SR and ROE. H2a: There is a significant relationship between SR and Tobin's Q. | Quantitative | Agency theory and Legitimacy theory | SOC has a negative correlation with ROA and Tobin's Q at the 5% level of significance. |
| Machmudda h et al., (2020) | Corporate social responsibility, profitability, and firm value: Evidence from Indonesia. | Indonesia | H1: CSR influences firm value. H2: Profitability has a moderating effect on the firm value of CSR disclosure. | Quantitative | Stakeholder theory and Signaling theory | Corporate social responsibility disclosure positively and significantly affects business value, whereas profitability moderates this effect. |
| Mukherjee & Nuñez (2019) | Doing well by doing good: can voluntary CSR reporting enhance financial performance? | Indian | Is there a significant difference in the Global Reporting Initiative (GRI) reporting level for firms in a high environmental risk sector compared to those in a low environmental risk sector? Does the GRI reporting level significantly influence financial performance?<br>measures, such as the risk ratios and information ratios? | Quantitative | Signaling theory | High-risk enterprises embrace the GRI framework more than low-risk firms. No correlation exists between GRI reporting and aggregate financial performance. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Nguyen et al., (2021). | Factors influencing corporate social responsibility disclosure and its impact on financial performance: The case of Vietnam | Vietnam | H1: There will be a positive relationship between company size and CSRD. H4: There will be a positive association between liquidity and CSRD. H6: There will be a positive relationship between CSRD and financial perform | Quantitative | Stakeholder theory and Legitimacy theory | Firm size, liquidity, government ownership, and environmental industry sensitivity positively affect CSRD levels. Firm age does not affect the listed company's CSRD. The CSRD strongly impacts ROA and ROE. |
| Okafor et al., (2021). | Corporate social responsibility and financial performance: Evidence from US tech firms. | US | H1. CSR has a statistically significant influence on revenue growth. | Quantitative | Stakeholder theory | The tech companies that spend more on CSR have higher revenue and profitability. |
| Rahi et al., (2021) | Do sustainability practices influence financial performance? | Nordic region (Sweden, Denmark, Finland, and Norway) | How does sustainability practice affect FP within the Nordic financial industry? | Quantitative and qualitative | Stakeholder Theory and Agency Theory | Sustainability had both positive and negative effects on FP. |
| Ramzan et al., (2021) | How does corporate social responsibility affect financial performance, financial stability, and financial inclusion in the banking sector? | Pakistan | H1. There is a significant relationship between CSR and FP among banks in Pakistan. | Quantitative | Stakeholder theory and Legitimacy theory | There is a significant positive association between banks' CSR and FP, indicating that CSR efforts foster a positive perception of potential customers' thoughts, attracting them and increasing FP. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Salam et al., (2021). | The Influence of Share Ownership, Funding Decisions, CSR, and Financial Performance of Food Industry. | Packaging industry | H1: Share ownership has a significant effect on Financial Performance of Supply Chain Firms | Quantitative | Signaling theory, Agency theory, Stakeholder theory, and Legitimacy theory, | Financial performance will not change if share ownership increases or decreases. |
| Shabbir & Wisdom (2020). | The relationship between corporate social responsibility, environmental investments, and financial performance: evidence from manufacturing companies. | Manufacturing companies. | H01: There is no relationship between internal environmental investments and firm performance. | Content analysis | Stakeholder theory | Internal environmental investments positively and significantly affect corporate financial performance |
| Siti Istikhoroh et al., (2021). | Does social media marketing as moderating relationship between intellectual capital and organizational sustainability through university managerial intelligence? | East Java | H1: Intellectual Capital (X1) influences organizational sustainability (Y2). H2: Intellectual Capital (X1) affects University Managerial Intelligence (Y1). H3: University Managerial Intelligence (Y1) affects Organizational Sustainability (Y2). H4: Intellectual Capital (X1) affects Organizational Sustainability (Y2) through University Managerial Intelligence (Y1). H5: Social Media Marketing (X2) moderates the influence of Intellectual Capital (X1) on Organizational Sustainability (Y2). H6: Social Media Marketing (X2) moderates the relationship between University Managerial Intelligence (Y1) and Organizational Sustainability (Y2). | Quantitative | Resource-based theory | Intellectual Capital positively impacts the sustainability of private higher education organizations in East Java and University Managerial Intelligence, Organizational Sustainability, and Social Media Marketing. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Wang et al., (2020). | Does environmental information disclosure contribute to improving firm financial performance? | Chinese | H1. Environmental information disclosure is positively related to visibility. | Quantitative | Legitimacy and Asymmetry information theory | Environmental information disclosure directly improves financial performance, but institutional ownership does not. |
| Xie et al., (2019). | Do environmental, social, and governance activities improve corporate financial performance? | Global companies | H1a. Corporate efficiency presents a nonlinear relationship with overall ESG disclosure; a positive relationship exists at a certain disclosure level. | DEA model and nonparametric and parametric regression models | Stakeholder theory, Shareholder theory, and Legitimacy theory | A non-negative link was found between most ESG activities and CFP. |
| Yang et al., (2021). | Does GRI Sustainability Reporting Pay Off? | China | What is the impact of the adoption of GRI guidelines in SR on Chinese firms' profitability? H1: Due to the strong positive signal conveyed, GRI SR has a significant positive effect on firm profitability. | Quantitative | Signaling theory | GRI SR considerably boosts corporate profitability. |
| Yun & Lee (2022). | Analysis of the Relationship between Corporate CSR Investment and Business Performance Using ESG Index—The Use-Case of Korean Companies. | Korean | H1. CSR influences firm financial performance. H2. Firms experience an increase in firm financial performance after the mandatory CSR disclosure. H3. CSR influences firm financial performance through capital structure channels. | Quantitative | ESG Evaluation systems | Only the bottom group positively affected business economic responsibility and financial performance. |

| Author(s) & Year | Title | Country/ Industry | Main Research Question/Hypothesis | Empirical Basis | Theory applied | Main Findings |
|---|---|---|---|---|---|---|
| Zhang & Ouyang, (2021). | Doing well by doing good: How corporate environmental responsibility influences corporate financial performance. | China, | H1: CER has a positive effect on corporate prominence. H3 Prominence partially mediates the relationship between CER and CFP. H5 Prominence and favorability interactively mediate the CER–CFP link, such that the indirect effect of CER on CFP by improving prominence (favorability) is more positive and significant in high levels of favorability (prominence) than in low levels. | Quantitative | Stakeholders' theory | CER indirectly improves CFP by increasing a firm's prominence and favorability. |
| Abdulkarim et al. (2022). | Towards Effective Environmental Sustainability Reporting in the Large Industrial Sector of Bahrain. | Bahrain | Do Bahraini companies have sustainability reports, and if so, are these reports based on GRI guidelines? Has the status of their sustainability reports been analyzed? | Quantitative content analysis | Business social responsibility | Materiality analysis in reporting helps companies monitor and measure their environmental performance and implement SDGs, and. sustainability reports have not been analyzed |

## Appendix B: Test Multicollinearity (VIF)

| VIF | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|
| Firm size | 1.04 | 1.02 | 1.04 | 1.14 |
| Firm growth | 1.02 | 1.04 | 1.06 | 1.01 |
| GRI report | 1.04 | 1.02 | 1.06 | 1.01 |
| ROI | 1.02 | 1.05 | 1.04 | 1.02 |
| Stakeholder influence | 1.02 | 1.04 | 1.04 | 1.01 |

Source. SPSS 29.0.02.0 (2022).

## Appendix C: VIF collinearity of the multiple regression models.

### Table C1

*VIF collinearity of the multiple regression model 2019*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Se* | Beta | *t* | *Sig.* | Tolerance | VIF |
| 1 | (Constant) | 3.380 | 1.033 | | 3.271 | 0.002 | | |
| | A and D firm size 2019 | -0.230 | 0.210 | -0.107 | -1.096 | 0.276 | 0.994 | 1.006 |
| | Firm growth 2019 | 0.043 | 0.015 | 0.279 | 2.848 | 0.005 | 0.994 | 1.006 |
| | GRI report 2019 | 1.360 | 0.949 | 0.140 | 1.433 | 0.155 | 1.000 | 1.000 |

a. Dependent Variable: ROA 2019

Source. SPSS 29.0.02.0 (2022).

### Table C2

*VIF collinearity of the multiple regression model 2020.*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Se* | Beta | *t* | *Sig.* | Tolerance | VIF |
| 1 | (Constant) | 1.097 | 1.335 | | 0.821 | 0.413 | | |
| | A and D firm size 2020 | 0.259 | 0.271 | 0.085 | 0.957 | 0.341 | 0.988 | 1.012 |
| | Firm growth 2020 | 0.026 | 0.013 | 0.175 | 1.972 | 0.051 | 0.982 | 1.019 |
| | GRI report 2020 | -0.500 | 0.988 | -0.045 | -0.506 | 0.614 | 0.988 | 1.012 |

a. Dependent Variable: ROA 2020

Source. SPSS 29.0.02.0 (2022).

### Table C3

*VIF collinearity of the multiple regression model 2021*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Se* | Beta | *t* | *Sig.* | Tolerance | VIF |
| 1 | (Constant) | 0.079 | 0.959 | | 0.083 | 0.934 | | |
| | A and D firm size 2021 | 0.465 | 0.196 | 0.212 | 2.371 | 0.019 | 0.944 | 1.059 |
| | Firm growth 2021 | -0.004 | 0.010 | -0.041 | -0.463 | 0.644 | 0.953 | 1.050 |
| | GRI report 2021 | -1.145 | 0.566 | -0.180 | -2.023 | 0.045 | 0.958 | 1.043 |

a. Dependent Variable: ROA 2021

Source. SPSS 29.0.02.0 (2022).

## Table C4

*VIF collinearity of the multiple regression model 2022.*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Se* | Beta | *t* | *Sig.* | Tolerance | VIF |
| 1 | (Constant) | 3.736 | 1.226 | | 3.048 | 0.003 | | |
| | A and D firm size 2022 | -0.049 | 0.233 | -0.020 | -0.212 | 0.833 | 0.881 | 1.134 |
| | Firm growth 2022 | 0.002 | 0.013 | 0.017 | 0.179 | 0.858 | 0.943 | 1.060 |
| | GRI report 2022 | -1.734 | 0.917 | -0.178 | -1.890 | 0.061 | 0.931 | 1.074 |

a. Dependent Variable: ROA 2022

Source. SPSS 29.0.02.0 (2022).

## Appendix D: Durbin-Watson test of the independence of residuals

**Table D1**

*2019 Statistics of Residuals*

| | Minimum | Maximum | Mean | Std. Deviation | *N* |
|---|---|---|---|---|---|
| Predicted Value | -1.588% | 5.837% | 2.693% | 1.1883% | 97 |
| Residual | -9.7632% | 8.0387% | 0.0000% | 3.3245% | 97 |
| Std. Predicted Value | -3.603 | 2.646 | 0.000 | 1.000 | 97 |
| Std. Residual | -2.891 | 2.380 | 0.000 | 0.984 | 97 |

a. Dependent Variable: ROA 2019

Source. SPSS 29.0.02.0 (2022).

**Table D2**

*2020 Statistics of Residuals*

| | Minimum | Maximum | Mean | Std. Deviation | *N* |
|---|---|---|---|---|---|
| Predicted Value | -1.227% | 4.774% | 2.120% | 0.9809% | 128 |
| Residual | -10.8401% | 11.4595% | 0.0000% | 4.5966% | 128 |
| Std. Predicted Value | -3.412 | 2.706 | 0.000 | 1.000 | 128 |
| Std. Residual | -2.330 | 2.463 | 0.000 | 0.988 | 128 |

a. Dependent Variable: ROA 2020

Source. SPSS 29.0.02.0 (2022).

**Table D3**

*2021 Statistics of Residuals*

| | Minimum | Maximum | Mean | Std. Deviation | *N* |
|---|---|---|---|---|---|
| Predicted Value | -0.258% | 3.314% | 1.767% | 0.7989% | 128 |
| Residual | -6.9101% | 9.2267% | 0.0000% | 3.0785% | 128 |
| Std. Predicted Value | -2.535 | 1.936 | 0.000 | 1.000 | 128 |
| Std. Residual | -2.218 | 2.962 | 0.000 | 0.988 | 128 |

a. Dependent Variable: ROA 2021

Source. SPSS 29.0.02.0 (2022).

**Table D4**

*2022 Statistics of Residuals*

| | Minimum | Maximum | Mean | Std. Deviation | *N* |
|---|---|---|---|---|---|
| Predicted Value | 1.534% | 3.639% | 2.026% | 0.6424% | 121 |
| Residual | -9.3841% | 8.2354% | 0.0000% | 3.4204% | 121 |
| Std. Predicted Value | -0.766 | 2.512 | 0.000 | 1.000 | 121 |
| Std. Residual | -2.709 | 2.377 | 0.000 | 0.987 | 121 |

a. Dependent Variable: ROA 2022

Source. SPSS 29.0.02.0 (2022).

## Appendix E: Sample Size and Industry Distribution

| Sample size | Observations |
|---|---|
| The quantity of firm-year 2019–2022 observations that were of firms in the aerospace and defense sector | 15,285 |
| The cumulative number of firm-year observations for the ESG Risk Rating published between 2019 and 2022. | 122 |
| Less: Number of Aerospace and Defense subsidiary companies. | 14,930 |
| Less: None Aerospace and Defense companies listed on the stockmarketcap.org 2019-2022 | 115 |
| Less: Missing financial and share market data Aerospace and Defense companies listed on the 2019-2022 | 11 |
| Less: Companies that did not publish annual financial statements in 2019-2022 | 16 |
| Less: Companies without ESG Risk Rating published in 2019-2022 | 45 |
| Observation years | 4 |
| Total outlier data | 18 |
| Total samples | 150 |

## Appendix F: Descriptive Statistics for Variables

| | *N* | *Min* | *Max* | *M* | *SD* | *Skewness* | *Kurtosis* |
|---|---|---|---|---|---|---|---|
| Firm Growth 2019 | 150 | -99.2% | 89.0% | 4.22% | 21.43% | -0.60 | 6.46 |
| Firm Growth 2020 | 150 | -100.0% | 90.7% | -2.67% | 32.00% | -0.81 | 2.63 |
| Firm Growth 2021 | 150 | -99.0% | 92.5% | 0.31% | 30.30% | -1.04 | 4.11 |
| Firm Growth 2022 | 150 | -100.0% | 62.1% | -0.18% | 27.66% | -2.09 | 5.83 |
| Firm Size 2019 | 150 | $0.0 | 1.13 | 7.53 | 9.21 | 12.25 | 150.00 |
| Firm Size 2020 | 150 | $0.7 | 1.03 | 6.90 | 8.43 | 12.25 | 150.00 |
| Firm Size 2021 | 150 | $1.2 | 1.06 | 7.10 | 8.67 | 12.25 | 150.00 |
| Firm Size 2022 | 150 | $0.0 | 1.22 | 8.18 | 9.99 | 12.25 | 150.00 |
| GRI Report 2019 | 150 | 0 | 1 | 0.15 | 0.36 | 2.02 | 2.10 |
| GRI Report 2020 | 150 | 0 | 1 | 0.22 | 0.42 | 1.37 | -0.14 |
| GRI Report 2021 | 150 | 0 | 1 | 0.43 | 0.50 | 0.27 | -1.95 |
| GRI Report 2022 | 150 | 0 | 1 | 0.84 | 0.37 | -1.87 | 1.53 |
| ROA 2019 | 150 | -6.6% | 11.0% | 2.4% | 3.5% | 0.43 | -0.25 |
| ROA 2020 | 150 | -9.2% | 13.6% | 2.1% | 4.7% | 0.09 | -0.01 |
| ROA 2021 | 150 | -6.1% | 10.0% | 1.7% | 3.3% | 0.31 | 0.00 |
| ROA 2022 | 150 | -5.8% | 9.9% | 1.9% | 3.4% | 0.44 | -0.44 |
| ROI 2019 | 150 | -8% | 13% | 2.7% | 3.9% | 0.20 | 0.12 |
| ROI 2020 | 150 | -8% | 58% | 2.5% | 6.4% | 4.55 | 38.68 |
| ROI 2021 | 150 | -4% | 7% | 1.2% | 2.5% | 0.46 | -0.07 |
| ROI 2022 | 150 | -6% | 11% | 2.2% | 3.8% | 0.48 | -0.33 |
| Stakeholder 2019 | 150 | 0 | 1 | 0.43 | 0.50 | 0.27 | -1.95 |
| Stakeholder 2020 | 150 | 0 | 1 | 0.44 | 0.50 | 0.24 | -1.97 |
| Stakeholder 2021 | 150 | 0 | 1 | 0.43 | 0.50 | 0.27 | -1.95 |
| Stakeholder 2022 | 150 | 0 | 1 | 0.43 | 0.50 | 0.30 | -1.94 |
| Tobin’s Q 2019 | 150 | -1% | 1% | 0.38% | 0.36% | 0.72 | -0.02 |
| Tobin’s Q 2020 | 150 | 0% | 51% | 11.16% | 14.51% | 1.18 | 0.06 |
| Tobin’s Q 2021 | 150 | 0% | 39% | 8.6% | 11.5% | 1.22 | 0.09 |
| Tobin’s Q 2022 | 150 | 0% | 48% | 10.7% | 13.9% | 1.11 | -0.17 |
| Valid N (listwise) | 150 | | | | | | |

Source. SPSS 29.0.02.0 (2022).

## Appendix G: Descriptive Statistics for Variables after Winsorization

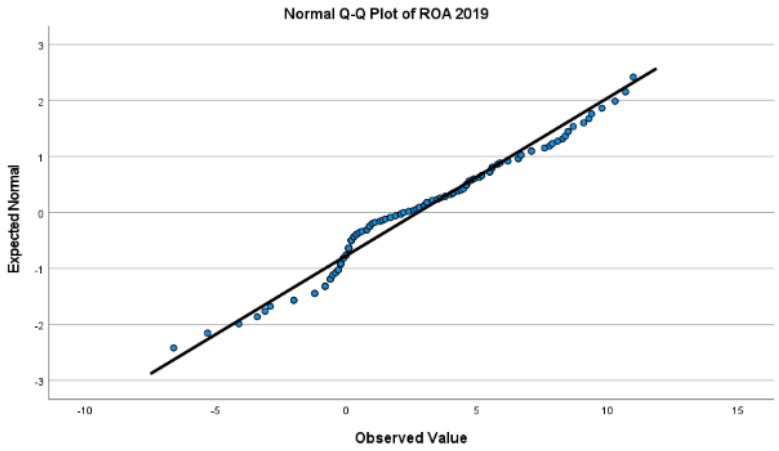
| *Variable* | *n* | *Min* | *Max* | *M* | *SD* | *Skewness* | *Kurtosis* |
|---|---|---|---|---|---|---|---|
| Firm Size 2019 | 105 | 1 | 8 | $4.53 | $1.62 | -0.221 | -0.755 |
| Firm Size 2020 | 128 | 1 | 8 | $4.66 | $1.53 | 0.025 | -0.342 |
| Firm Size 2021 | 129 | 2 | 8 | $4.74 | $1.45 | 0.081 | -0.458 |
| Firm Size 2022 | 129 | 2 | 8 | $4.81 | $1.42 | 0.071 | -0.369 |
| Firm Growth 2019 | 149 | -99.2% | 89.0% | 4.3% | 21.5% | -60.4% | 640.6% |
| Firm Growth 2020 | 150 | -100.0% | 90.7% | -2.7% | 32.0% | -81.4% | 263.1% |
| Firm Growth 2021 | 149 | -99.0% | 92.5% | 0.3% | 30.4% | -103.2% | 406.5% |
| Firm Growth 2022 | 148 | -100.0% | 62.1% | -0.2% | 27.8% | -207.1% | 571.4% |
| GRI Report 2019 | 150 | 0 | 1 | 15.0% | 35.5% | 201.8% | 209.9% |
| GRI Report 2020 | 150 | 0 | 1 | 22.0% | 41.6% | 136.6% | -13.7% |
| GRI Report 2021 | 150 | 0 | 1 | 43.0% | 49.7% | 27.2% | -195.2% |
| GRI Report 2022 | 150 | 0 | 1 | 84.0% | 36.8% | -187.4% | 153.1% |
| ROA 2019 | 136 | -6.6% | 11.0% | 2.6% | 3.5% | 26.7% | -36.9% |
| ROA 2020 | 149 | -9.2% | 13.6% | 2.1% | 4.8% | 8.5% | -2.0% |
| ROA 2021 | 149 | -6.1% | 10.0% | 1.7% | 3.3% | 29.5% | -0.7% |
| ROA 2022 | 139 | -5.8% | 9.9% | 2.0% | 3.5% | 32.4% | -57.8% |
| Tobin’s Q 2019 | 48 | -1.0% | 1.0% | 0.9% | 0.3% | -547.9% | 3107.4% |
| Tobin’s Q 2020 | 129 | 1.0% | 51.0% | 13.0% | 14.9% | 97.0% | -40.4% |
| Tobin’s Q 2021 | 124 | 0.0% | 39.0% | 10.4% | 11.8% | 95.8% | -50.7% |
| Tobin’s Q 2022 | 123 | 0.0% | 48.0% | 13.1% | 14.3% | 83.3% | -72.3% |
| ROI 2019 | 110 | -8.0% | 13.0% | 3.7% | 4.1% | -38.4% | 35.5% |
| ROI 2020 | 113 | -8.0% | 58.0% | 3.2% | 7.2% | 392.0% | 2992.9% |
| ROI 2021 | 96 | -4.0% | 7.0% | 1.8% | 2.9% | -18.6% | -72.2% |
| ROI 2022 | 113 | -6.0% | 11.0% | 3.0% | 4.1% | 1.1% | -71.6% |
| STAKE 2019 | 150 | 0 | 1 | 0.43 | 0.50 | 0.27 | -1.95 |
| STAKE 2020 | 150 | 0 | 1 | 0.44 | 0.50 | 0.24 | -1.97 |
| STAKE 2021 | 150 | 0 | 1 | 0.43 | 0.50 | 0.27 | -1.95 |
| STAKE 2022 | 150 | 0 | 1 | 0.43 | 0.50 | 0.30 | -1.94 |
| Valid N (listwise) | 8 | | | | | | |

Source. SPSS 29.0.02.0 (2022).

# Appendix H: Q-Q plots 2019 -2022

## Figure H1

*Q-Q Plot of ROA 2019*




## Figure H2

*Q-Q Plot of ROA 2020*

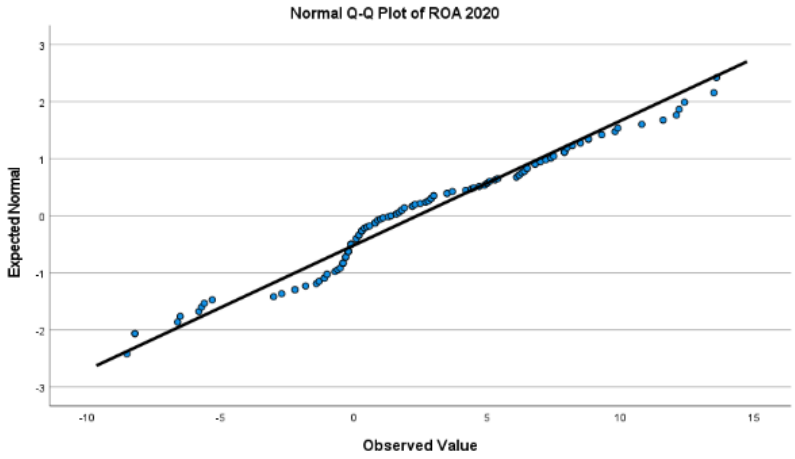


**Figure H3**

*Q-Q Plot of ROA 2021*

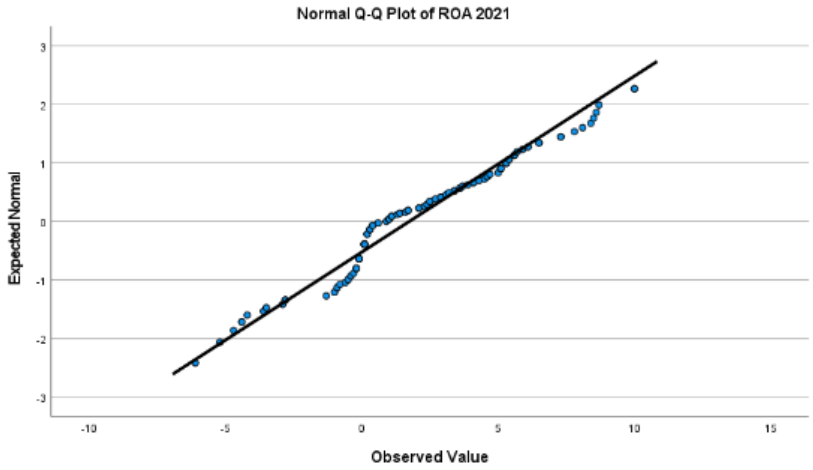
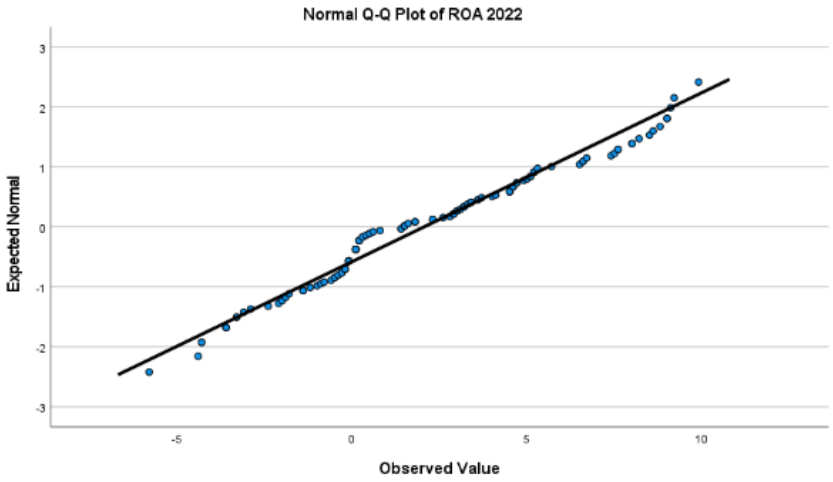



**Figure H4**

*Q-Q Plot of ROA 2022*



## Appendix I: Histogram distribution of the DV ROA 2019 -2022

**Figure I1**

*Histogram Dependent Variable: ROA 2019*

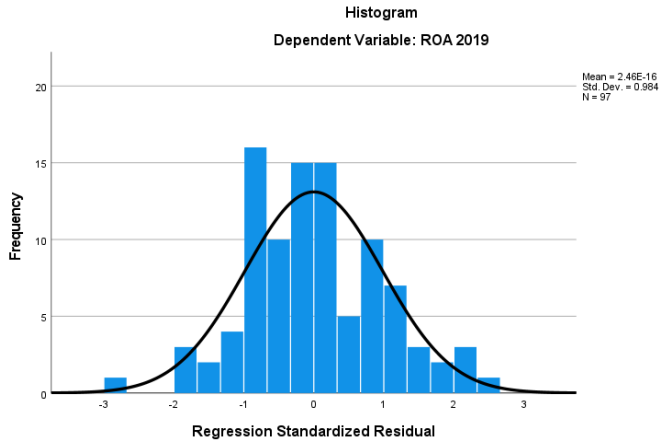



**Figure I2**

*Histogram Dependent Variable: ROA 2020*

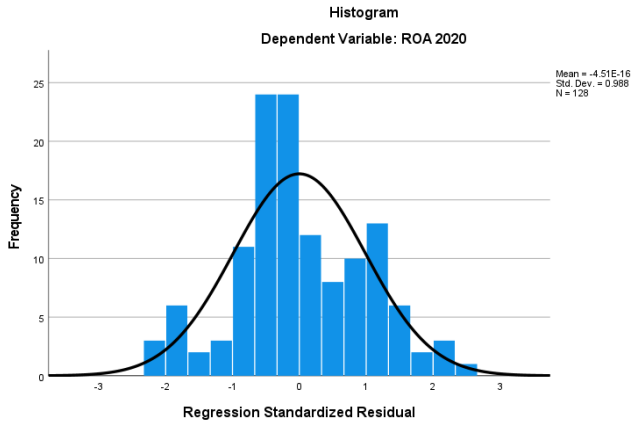


**Figure I3**

*Histogram Dependent Variable: ROA 2021*

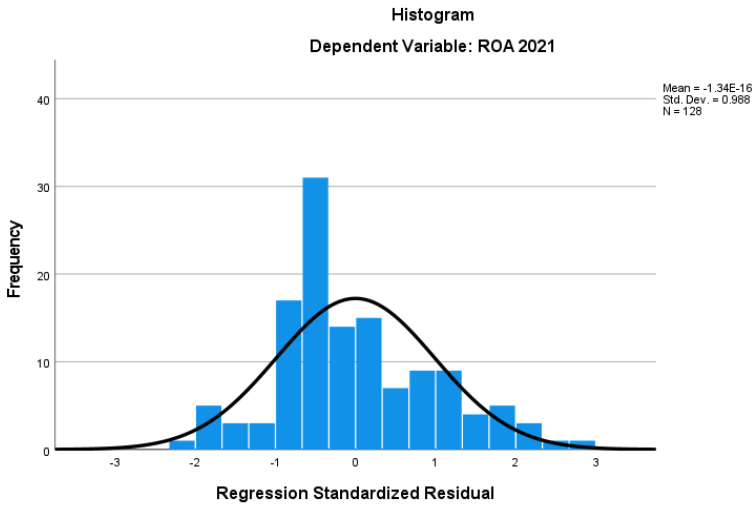
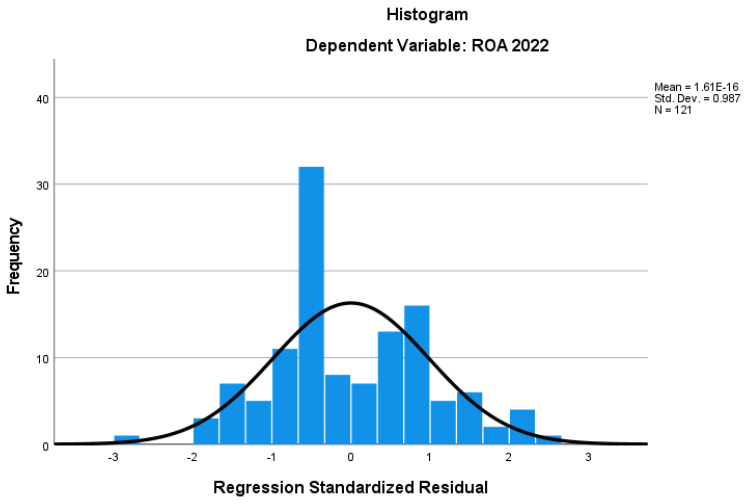



**Figure I4**

*Histogram Dependent Variable: ROA 2022*



## Appendix J: Correlations: ROA and Tobin's Q 2019-2022

| | | ROA 2019 | ROA 2020 | ROA 2021 | ROA 2022 | Tobin's Q 2019 | Tobin's Q 2020 | Tobin's Q 2021 | Tobin's Q 2022 |
|---|---|---|---|---|---|---|---|---|---|
| ROA 2019 | Pearson Correlation | 1 | .29** | .38** | .42** | -0.03 | 0.06 | 0.12 | 0.08 |
| | Sig. (2-tailed) | | 0.00 | 0.00 | 0.00 | 0.73 | 0.48 | 0.13 | 0.31 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| ROA 2020 | Pearson Correlation | 0.29** | 1 | 0.41** | .34** | 0.09 | -0.13 | -0.09 | -0.01 |
| | Sig. (2-tailed) | 0.00 | | 0.00 | 0.000 | 0.26 | 0.11 | 0.29 | 0.89 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| ROA 2021 | Pearson Correlation | 0.38** | 0.42** | 1 | 0.50** | -0.00 | 0.06 | 0.19* | 0.14 |
| | Sig. (2-tailed) | 0.00 | 0.00 | | 0.00 | 0.96 | 0.44 | 0.02 | 0.1 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| ROA 2022 | Pearson Correlation | 0.43** | 0.34** | 0.50** | 1 | 0.14 | 0.04 | 0.06 | 0.06 |
| | Sig. (2-tailed) | 0.00 | 0.00 | 0.00 | | 0.08 | 0.60 | 0.46 | 0.47 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Tobin's Q 2019 | Pearson Correlation | -0.03 | 0.09 | -0.00 | 0.14 | 1 | -0.33** | -0.36** | -0.24** |
| | Sig. (2-tailed) | 0.72 | 0.26 | 0.96 | 0.09 | | 0.00 | 0.00 | 0.00 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Tobin's Q 2020 | Pearson Correlation | 0.06 | -0.13 | 0.06 | 0.04 | -0.33** | 1 | 0.55** | 0.45** |
| | Sig. (2-tailed) | 0.48 | 0.11 | 0.44 | 0.60 | 0.00 | | 0.00 | 0.00 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Tobin's Q 2021 | Pearson Correlation | 0.12 | -0.09 | 0.19* | 0.06 | -0.36** | 0.55** | 1 | 0.66** |
| | Sig. (2-tailed) | 0.12 | 0.29 | 0.02 | 0.46 | 0.00 | 0.00 | | 0.00 |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Tobin's Q 2022 | Pearson Correlation | 0.08 | -0.01 | 0.14 | 0.06 | -0.24** | 0.45** | 0.66** | 1 |
| | Sig. (2-tailed) | 0.31 | 0.89 | 0.10 | 0.47 | 4 | 0.00 | 0.00 | |
| | N | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |

**. Correlation is significant at the 0.01 level (2-tailed).

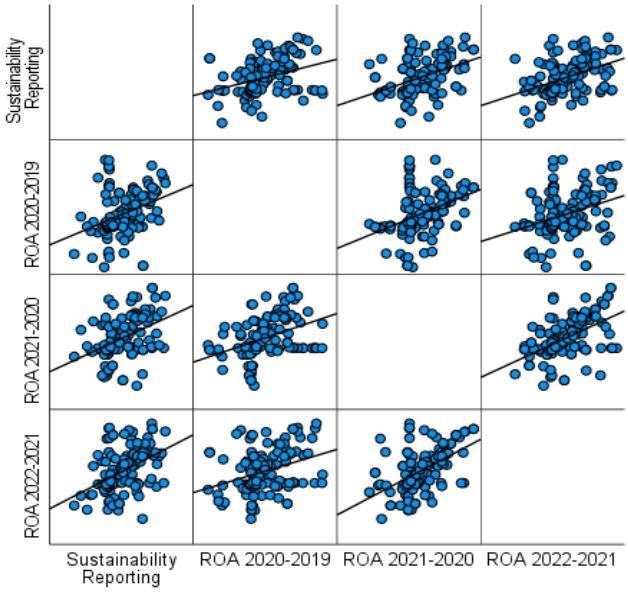
*. Correlation is significant at the 0.05 level (2-tailed).

Source. SPSS 29.0.02.0 (2022).

# Appendix K: Scatterplot of Sustainability and ROA

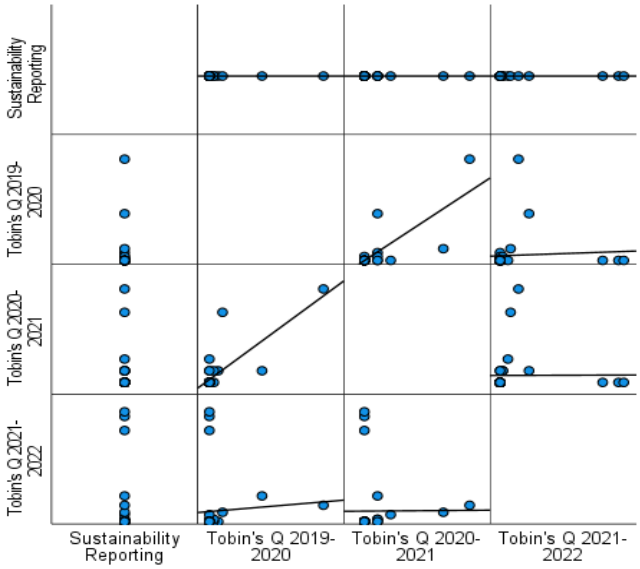
## Figure K1

*RQ: Scatterplot of Sustainability Reporting and ROA*




## Figure K2

*RQ: Scatterplot of Sustainability Reporting and Tobin's Q*



# Appendix L: Moderation Analysis, Predictors, and Moderating Effect

## Table L1

Moderation Analysis 2019 (*n* = 150)

| | *Coeff (b)* | *Se* | *t* | *P-value* | *LLCI* | *ULCI* |
|---|---|---|---|---|---|---|
| Constant | 15.620 | 2.194 | 7.120 | .000 | 11.284 | 19.956 |
| GRI2019 | 2.482 | 6.397 | .388 | .699 | -10.160 | 15.124 |
| STAKE19 | -.602 | 3.410 | -.177 | .860 | -7.341 | 6.136 |
| Int_1 | -6.565 | 8.821 | -.744 | .458 | -23.999 | 10.869 |
| $R^2$ | .077 | | | | | |
| Adjusted $R^2$ | .006 | | | | | |

Source: SPSS (2022).

## Table L2

Predictors - Moderation Analysis 2019 (*n* = 150)

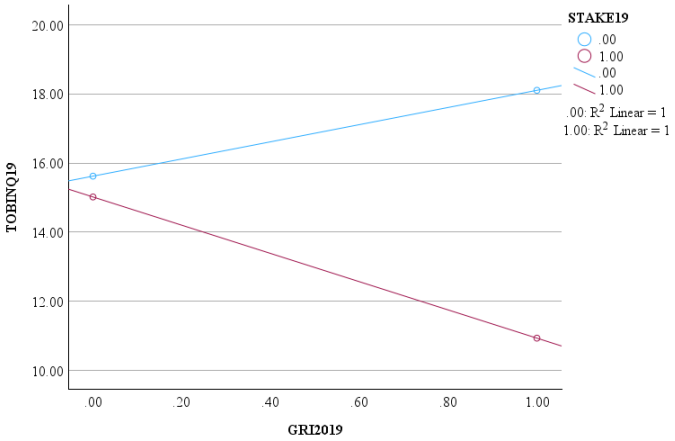
| *Predictors* | *b* | *Se* | *t* |
|---|---|---|---|
| Constant | 15.62** | 2.19 | 7.12 |
| GRI2019 (X) | 2.48** | 6.40 | .388 |
| STAKE19 (W) | -.602*** | 3.41 | -.177 |
| X.W | .006* | 8.82 | -.744 |

*Note.* F (3, 146) = .293***; R =.077, $R^2$ = .006; ***p < .001, ** p < .01, *p < .05. S.E. = Standard error, bs are unstandardized regression coefficients.

Source: SPSS (2022).

## Figure L3

*The conditional effect of the focal predictor*



## Table L4

*Moderation Analysis 2020 (n = 150)*

| | Coeff (b) | Se | t | P-value | LLCI | ULCI |
|---|---|---|---|---|---|---|
| Constant | 11.584 | 1.816 | 6.377 | .000 | 7.994 | 15.174 |
| GRI2020 | 5.405 | 4.038 | 1.339 | .183 | -2.575 | 13.385 |
| STAKE20 | .071 | 2.779 | .025 | .980 | -5.421 | 5.562 |
| Int_1 | 2.527 | 5.877 | .430 | .668 | -9.088 | 14.142 |
| $R^2$ | .188 | | | | | |
| Adjusted $R^2$ | .036 | | | | | |

Source: SPSS (2022).

## Table L5

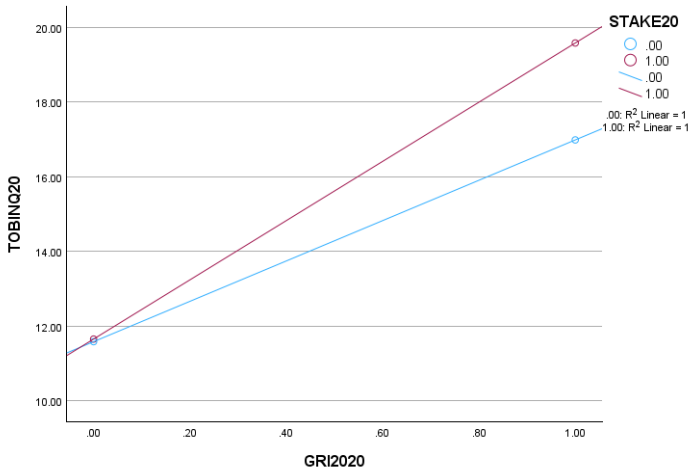
*Predictors - Moderation Analysis 2020 (n = 150)*

| Predictors | *b* | *Se* | *t* |
|---|---|---|---|
| Constant | 11.58** | 1.8 | 6.4 |
| GRI2020 (X) | 5.41** | 4.04 | 1.34 |
| STAKE20 (W) | .07*** | 2.78 | .025 |
| X.W | .2.5* | 5.88 | .43 |

*Note.* F (3, 146) = .07***; R =.19, $R^2$ = .04; ***p < .001, ** p < .01, *p < .05. S.E. = Standard error, bs are unstandardized regression coefficients. Source: SPSS (2022).

## Figure L6

*The conditional effect of the focal predictor*



## Table L7

*Moderation Analysis 2021*

| | *coeff* | *Se* | *t* | *P-value* | *LLCI* | *ULCI* |
|---|---|---|---|---|---|---|
| Constant | 9.133 | 2.134 | 4.280 | .000 | 4.915 | 13.350 |
| GRI2021 | 6.869 | 3.234 | 2.124 | .035 | .477 | 13.261 |
| STAKE21 | 3.293 | 3.234 | 1.018 | .310 | -3.099 | 9.685 |
| Int_1 | -1.250 | 4.917 | -.254 | .800 | -10.967 | 8.467 |
| $R^2$ | .229 | | | | | |
| Adjusted $R^2$ | .052 | | | | | |

Source: SPSS (2022).

## Table L8

*Predictors - Moderation Analysis 2021 (n = 150)*

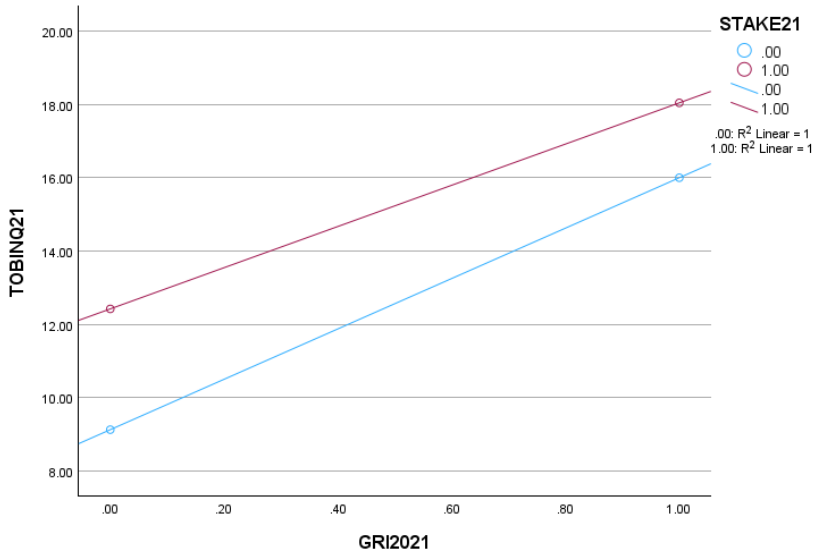
| *Predictors* | *b* | *Se* | *t* |
|---|---|---|---|
| Constant | 9.133** | 2.134 | 4.280 |
| GRI2021 (X) | 6.869** | 3.234 | 2.124 |
| STAKE21 (W) | 3.293*** | 3.234 | 1.018 |
| X.W | -1.250* | 4.917 | -.254 |

*Note.* F (3, 146) = 2.7***; R =.0.23, $R^2$ = .05; ***p < .001, ** p < .01, *p < .05. S.E. = Standard error, bs are unstandardized regression coefficients. Source: SPSS (2022).

Source: SPSS (2022).

## Figure L9

*The conditional effect of the focal predictor*



## Table L10

*Moderation Analysis 2022*

| | *coeff* | *Se* | *t* | *P-value* | *LLCI* | *ULCI* |
|---|---|---|---|---|---|---|
| Constant | 8.443 | 4.305 | 1.961 | .052 | -.064 | 16.950 |
| GRI2022 | 4.409 | 4.640 | .950 | .344 | -4.762 | 13.580 |
| STAKE22 | 3.405 | 6.088 | .559 | .577 | -8.626 | 15.436 |
| Int_1 | -.218 | 6.659 | -.033 | .974 | -13.378 | 12.942 |
| $R^2$ | .146 | | | | | |
| Adjusted $R^2$ | .021 | | | | | |

Source. SPSS 29.0.02.0 (2022).

## Table L11

*Predictors - Moderation Analysis 2022 (n = 150)*

| *Predictors* | *b* | *Se* | *t* |
|---|---|---|---|
| Constant | 8.44** | 4.31 | 1.96 |
| GRI2022 (X) | 4.41** | 4.64 | .95 |
| STAKE22 (W) | 3.41*** | 6.09 | .56 |
| X.W | -.21* | 6.66 | -.03 |

*Note.* F (3, 146) = .1.06***; R =.15, $R^2$ = .002; ***p < .001, ** p < .01, *p < .05. S.E. = Standard error, bs are unstandardized regression coefficients.

Source: SPSS (2022).

## Figure L12

*The conditional effect of the focal predictor*