



University of Bahrain
College of Business Administration
Accounting Department

The Impact of Corporate Social Responsibility on Financial Distress Risk: Evidence from GCC Stock Markets

A Thesis Submitted in Partial Fulfilment of the Requirements for the
master's degree in Accounting

Prepared by:
Lulwa Esam Ali Almulla
20157021

Supervised by:
Dr. Omar Juhmani
Professor of Accounting
University of Bahrain
Kingdom of Bahrain

April 2025

Abstract

This study empirically examines the impact of Corporate Social Responsibility (CSR) on a company's financial distress risk (FDR). The Environmental, Social, and Governance score serves as a proxy for CSR, and three models are employed to measure FDR levels (i.e., Altman's Z-Score, Ohlson's O-Score, and Zmijewski's ZM-Score). The study sample comprises 302 non-financial companies publicly listed on GCC stock exchanges from 2018 to 2022. After analyzing a dataset of 1,510 observations, using the Altman Z-Score, the results show that CSR is positively and significantly associated with FDR. A high Z-Score indicates a lower FDR. This implies that firms with better CSR performance and higher Z-Scores are likely to face a lower risk of financial distress. Therefore, companies that engage in more substantial positive CSR activities are less likely to declare bankruptcy during severe financial distress and are more likely to recover swiftly. The results using Ohlson's O-Score and Zmijewski's ZM-Score show a negative and significant relationship between CSR and FDR. Since a higher O-Score and ZM-Score indicate higher FDR. This result confirms that higher CSR scores are associated with a lower probability of FDR, supporting the study's hypothesis of a negative and significant relationship between CSR and FDR in non-financial GCC-listed companies. The findings support the stakeholder theory of CSR, which suggests that meeting stakeholder expectations enhances a firm's legitimacy and long-term viability performance. It also supports signaling theory, which indicates that strong CSR engagement signals stability and ethical standards to investors, reducing perceived risk. Also, the results of this study show that older and larger firms are less likely to face FDR. Leverage remains a significant predictor of FDR, indicating that highly leveraged firms face a greater risk, while firms with higher liquidity enjoy a lower risk. Overall, this study provides new empirical evidence on the role of CSR in enhancing firm resilience and contributes to filling a critical gap in the CSR and FDR literature within the GCC context.

Keywords: Corporate Social Responsibility, Financial Distress Risk, Altman Z-Score, Ohlson O-Score, Zmijewski ZM-Score, GCC Stock Markets.

Publication

L. E. Almula and O. I. Juhmani, "The Impact of Corporate Social Responsibility on Financial Distress Risk: Evidence from GCC Countries," 2024 International Conference on Sustainable Islamic Business and Finance (SIBF), Bahrain, 2024, pp. 1-4, doi: 10.1109/SIBF63788.2024.10883883.

DEDICATION

To my beloved family and dear friends,
for your endless love, encouragement, and unwavering support throughout this journey.

This achievement would not have been possible without you.

ACKNOWLEDGEMENT

I want to express my sincere gratitude to my supervisor, Prof. Dr. Omar Juhmani, for his valuable guidance, continuous support, and encouragement throughout the research process.

I also appreciate the College of Business Administration at the University of Bahrain for providing the academic environment and resources that enabled me to complete this work.

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(iii) List of Abbreviations

Abbreviation	Explanation
Altman Z	Altman Z-Score
ANOVA	Analysis of Variance
CSR	Corporate Social Responsibility
ESG	Environmental, Social, and Governance
FAGE	Firm Age
GCC	Gulf Cooperation Council
FDR	Financial Distress Risk
FSIZE	Firm Size
LEV	Leverage
LIQ	Liquidity
LSEG	London Stock Exchange Group
Ohlson O	Ohlson O-Score
SD	Standard Deviation
U.S.	United States
Zmijewski ZM	Zmijewski ZM-Score

Chapter One

Introduction of the study

This chapter provides a general overview of the study, including the introduction, research problem, research question, research aims, research importance, and study constraints.

1.1 General Introduction

The CSR is gaining recognition from both academics and business executives. Over the past three decades, scholars and policymakers have shown increasing interest in this area. It is an effective tool for attracting investors and maintaining favorable connections with stakeholders (Yang et al., 2019; Boubaker et al., 2020; Khan et al., 2021).

Consequently, CSR emerged as a significant component of company strategy in today's business environment. As global markets become interconnected and stakeholders demand greater transparency and accountability, businesses are adopting CSR strategies to enhance their social and environmental impact.

Another dimension of CSR relates to a company's commitment to ethical business practices, environmental sustainability, community participation, and strong corporate governance. In addition, CSR encompasses a company's efforts to address environmental, social, and governance (ESG) issues, extending beyond compliance to provide long-term benefits for stakeholders (Carroll & Shabana, 2010).

Firms that engage in CSR attempt to enhance their reputation, stakeholder trust, and market positioning while also positively benefiting society and the environment (Cheng et al., 2013).

The discussion around CSR has evolved, with increased research being conducted into its connections to various economic and financial factors. Academic scholars investigated the impact of CSR on firm performance, value, risk, financial stability, cost of equity capital, shareholder wealth, stock price, and credit ratings (Boubaker et al., 2020; Tarighi et al., 2022). The extent of CSR disclosure remains a concern in financial research due to its importance to investors, shareholders, capital market experts, and policymakers (Boubaker et al., 2020; Tarighi et al., 2022).

Financial distress is a vague term, and it is referred to in the literature as failure, insolvency, bankruptcy, or default risk. Financially distressed companies often struggle to access external financing and are perceived to have weaker credit ratings (Khan et al., 2021).

Hence, firms strive to fulfill the demands of their stakeholders by lowering firm risk and boosting firm value. There are several ways available to reduce a firm's risk and avoid financial distress. In today's economic world, one of the most significant strategies is paying attention and providing CSR practices to attract investors and maintain positive relationships with stakeholders (Khan et al., 2021; Koohi et al., 2022). In this context, CSR is becoming increasingly significant in enhancing a firm's reputation and financial status, as well as attracting potential investors, and can be a critical factor in decreasing FDR (Tarighi et al., 2022). The topic of CSR and FDR is one of the most pressing financial issues today. However, these difficulties have not been well addressed (Al-Hadi et al., 2017; Koohi et al., 2022).

CSR and FDR are important study issues; however, they received little attention in the literature, with relatively few studies on the subject, and they are frequently examined separately (Al-Hadi et al., 2017; Khan et al., 2021; Koochi et al., 2022). The rationale for corporate CSR participation is multidimensional, encompassing cultural, social, economic, and financial aspects. Firms participate in CSR activities to improve their reputation, strengthen stakeholder relationships, and contribute to sustainable development. However, the financial consequences of CSR remain debatable, particularly its impact on FDR, and remain disputed in both academic and corporate circles (Boubaker et al., 2020).

This study is theoretically anchored in stakeholder theory, signaling theory, and the resource-based theory. According to the stakeholder theory, firms are expected to address the interests of various stakeholders, not just shareholders, as a means of securing long-term survival and legitimacy (Freeman, 1984). From this perspective, CSR is seen as a strategic approach to fulfilling stakeholder expectations and reducing external pressure, which may consequently mitigate FDR.

Likewise, signaling theory suggests that CSR engagement can serve as a positive signal to investors, creditors, and other market participants, indicating strong governance, ethical standards, and operational robustness (Spence, 1973).

On the contrary, the resource-based theory considers CSR as an intangible strategic asset that can enhance a firm's competitiveness by building reputation, customer loyalty, and employee satisfaction—factors that collectively contribute to financial resilience (Barney, 1991). These theoretical perspectives collectively guide the analysis of how CSR activities

may influence a firm's financial stability, particularly in the context of emerging markets like the GCC.

Theoretically, CSR can reduce FDR by boosting reputation, lowering risk premiums, and strengthening connections with investors and regulators (Dhaliwal et al., 2011). However, its financial implications remain a topic of debate. Some studies claim that CSR may operate as a risk-management tool that enhances financial stability and improves stakeholder relationships, while others argue that it can lead to overinvestment and resource misallocation (Barnea & Rubin, 2010), which might strain business performance and heighten FDR, especially during economic downturns.

The link between CSR and FDR is theoretically complicated and empirically mixed. On one hand, CSR initiatives may strengthen a business's reputation, enhance stakeholder relationships, and serve as a buffer against financial distress, lowering the probability of FDR. Strong CSR performance may also result in greater capital access, lower borrowing costs, and increased investor confidence, all of which contribute to financial stability. On the other hand, critics argue that CSR investments can impose significant financial obligations, diverting resources away from core corporate operations and increasing exposure to financial distress. Excessive CSR investment without financial returns may strain liquidity and profitability, especially during times of economic instability.

The importance of CSR is gaining recognition in academic literature, though some areas remain unexplored. Recent studies highlight the connection between CSR and access to credit, suggesting that enterprises with strong CSR involvement may leverage their reputation to obtain funding at reduced financing costs (Jiraporn et al., 2014). It argued that there is a direct

correlation between several CSR attributes and business credit ratings (Attig et al., 2013). Similarly, Sun and Cui (2014) discovered that enterprises with high CSR rankings reduce their risk through their high credit ratings. These studies suggest that organizations with high CSR activity have lower default risk and higher credit ratings due to a positive corporate image.

Over the past five decades, significant progress has been made in understanding corporate default risk. Altman (1968) was a pioneer in using accounting and market-based models to assess FDR for firms. In a recent study, Altman et al. (2016) discovered that the Z-Score outperforms hazard and market-based models in predicting FDR. However, the relationship between CSR and financial distress has fared less well, with very little research on the topic in the literature.

Prior literature has demonstrated the role of CSR in mitigating FDR and improving firms' financial stability. Several studies indicate that CSR engagement enhances stakeholder relationships and reduces FDR (Lin & Dong, 2018; Zheng et al., 2019). For instance, Sun and Cui (2014) demonstrate that a higher interest in CSR enhances creditworthiness.

Similarly, Boubaker et al. (2020) provide evidence that CSR enhances creditworthiness, leading to better access to external financing. Khan et al. (2021) argue that investing in CSR improves firms' reputation and creditworthiness, and CSR enhances the company environment, leading to more significant economic outcomes.

Furthermore, Attig et al. (2013) highlight that firms with high CSR activities have higher credit ratings, and credit rating agencies may utilize CSR data to assess the firms' creditworthiness. Therefore, all of these

empirical studies show that CSR enhances credit ratings and access to funding. Thus, CSR plays a crucial role in mitigating corporate risk, underscoring the importance of exploring the relationship between CSR and FDR.

In contrast, other studies found that enterprises with high CSR activities are unable to improve their creditworthiness and access to finance, resulting in increased FDR (Farooq & Noor, 2021; Tarighi et al., 2022).

1.2 Research Problem

Despite the growing emphasis on CSR, its impact on FDR remains unclear. Previous studies have presented mixed findings, with some suggesting that firms with higher CSR have lower FDR and others indicating increased financial distress due to excessive CSR investments. This study aims to address this gap by examining the relationship between CSR and FDR in GCC-listed non-financial firms.

1.3 Research Question

According to Prahalad and Hamel (1994), good CSR practices may ensure a company's future success by increasing stakeholder support and confidence. Therefore, this study aims to answer the following questions: Does engagement in CSR reduce the firms' likelihood of experiencing FDR? Can CSR activities be used as a risk management tool in the GCC market?

The response to this question can help stakeholders when assessing both CSR and financial performance when making decisions.

1.4 Research Objectives

The main objective of this study is to examine the impact of CSR on FDR of the GCC-listed non-financial firms during the period from 2018 to 2022. The Altman Z-Score (1968), Ohlson O-Score (1980), and Zmijewski ZM-Score (1984) models are used to measure FDR, and CSR is measured using ESG scores obtained from the Refinitiv (LSEG) database, one of the most reputable global ESG datasets. The ESG score captures a firm's performance across environmental impact, social responsibility, and corporate governance, providing a holistic measure of CSR engagement.

1.4 Research Significance

Despite extensive studies on CSR and its consequences, evidence linking CSR to FDR remains limited. This gap in research is significant, as understanding whether CSR practices influence financial distress can provide a valuable perspective when evaluating company value. Financial distress can hinder a company's ability to secure financing and capitalize on tax benefits. Consequently, if effective CSR engagement reduces the risk of financial distress, overall company performance is likely to improve. Thus, management may consider strategic tools to enhance shareholder value and meet stakeholder expectations.

Furthermore, incorporating CSR into corporate strategy can lower costs associated with capital, debt, and financing restrictions (Boubaker & Nguyen, 2019). Therefore, policymakers and regulators can mitigate FDR and support

economic stability by encouraging sustainability reporting and establishing new regulations to promote CSR initiatives.

This study makes significant contributions to the existing literature in several ways. First, it is the first to investigate the relationship between CSR and FDR in the context of non-financial firms listed in the GCC region.

While prior research has explored this relationship in other parts of the world; such as the U.S. (e.g., Sun & Cui, 2014; Mecaj & Bravo, 2014; Lin & Dong, 2018; Zheng et al., 2019; Boubaker et al., 2020), Australia (e.g., Al-Hadi et al., 2017), China (e.g., Shahab et al., 2018; Wu et al., 2020; Rahman et al., 2023; Ding et al., 2024), Pakistan (e.g., Khan et al., 2021; Farooq & Noor, 2021; Farooq et al., 2022), Indonesia (e.g., Theodorus & Rudyanto, 2022; Putra et al., 2022), Iran (e.g., Koohi et al., 2022; Tarighi et al., 2022), and Korean (e.g., Choi et al., 2021; Suganda & Kim, 2023); no empirical study has yet examined it within the GCC region. This makes my research the first of its kind to address this gap in the literature.

Second, it provides a comparative analysis of three widely used financial distress models, allowing for a more robust assessment of CSR's impact on financial stability.

Third, it sheds light on whether CSR engagement can serve as a strategic risk-management tool or if it increases the firm's exposure to distress under certain conditions.

By addressing these gaps, the research aims to provide valuable insights for corporate managers, investors, and policymakers seeking to understand the financial implications of CSR strategies in emerging markets.

1.5 Limitation of the Study

This study has several limitations. This study examines non-financial firms listed in the GCC countries, which may limit the generalizability of the findings to other regions or financial institutions. The financial sector was excluded from the research sample due to several characteristics that distinguish it from non-financial businesses, including reporting requirements, accounting periods, capital structure, and so on.

The study depends on publicly available financial and CSR data, which may have constraints in reporting. Additionally, the study employs CSR data obtained from LSEG Data & Analytics, which, while credible, may reflect variability in disclosure practices or scoring methodologies.

The research also spans a five-year period (2018–2022), which might not fully capture the long-term effect of CSR on financial distress. These limitations are acknowledged, and future studies can build on and extend the existing findings.

1.6 The Structure of the Study

This study has been structured as follows:

Chapter One provides an overview of the study, including the research background, problem statement, main objectives, significance, and limitations.

Chapter Two presents the theoretical perspectives related to CSR and FDR. It discusses relevant theories to build a solid foundation for the study.

Chapter Three provides a comprehensive literature review and empirical findings and formulates the hypothesis related to CSR and FDR.

Chapter Four outlines the research methodology, including the data source, sample selection, variable definitions, and the econometric models used for analysis.

Chapter Five presents the empirical results, including descriptive analysis, correlation, and regression analysis, and interprets the findings.

Finally, Chapter Six summarizes the conclusions, discusses practical implications, highlights the study's limitations, and suggests avenues for future research.

Chapter Two

Theoretical Framework

CSR has evolved as an important strategic tool for businesses seeking long-term growth and sustainability in an unpredictable financial environment. Businesses and scholars are increasingly looking into how CSR activities might affect financial performance, including how CSR can prevent financial crises. FDR can have serious implications, including diminished shareholder trust, higher financing costs, and even insolvency.

Using a theoretical perspective, we may better understand how CSR might serve as a buffer amid financial instability and lowering distress risks. This study investigates the complicated link between CSR and FDR, using theories such as stakeholder theory, signaling theory, and resource-based theory to examine the different pathways via which CSR may influence financial distress.

2.1 Corporate Social Responsibility (CSR)

In recent years, the incorporation of CSR into core business strategy has become increasingly important as companies respond to growing expectations from stakeholders, regulatory authorities, and society at large (Jamali & Mirshak, 2007). CSR, encompassing a company's commitment to environmental sustainability, social equality, and good governance, is no longer viewed as purely charitable but rather as a strategic approach that leads to long-term value generation (Oh et al., 2013). Companies are expected to create profits while simultaneously minimizing negative externalities and

promoting ethical conduct, especially as environmental challenges, data privacy concerns, and worker rights become more widely known (Carroll, 1991).

CSR is among the earliest and most important concepts in the academic study of business-society interactions (Windsor, 2001). Howard R. Bowen's conclusions in his 1953 article *Social Responsibilities of the Businessman* served as the foundation for today's growing interest in and debate of various approaches to Corporate Social Responsibility (Carroll, 2021).

Bowen (1953) purposefully avoided creating a clear definition, preferring to leave the decision up to managers in light of specific circumstances (Windsor, 2001). According to his early theory, CSR is associated with firms' commitment to pursue policies, make decisions, or follow actions that benefit society's goals and values (Carroll, 2021).

In this case, there are two preliminaries. First, the corporation must adhere to rules established by the community to conduct business. A firm is bound by a set of rights and duties under the terms of a social contract. The social contract will evolve in line with societal shifts, but no matter what, it will continue to serve as a framework for companies to match their objectives with those of the community, which will be implemented through CSR (Putra et al., 2022). Second, businessmen behave as moral agents in the community. The values of top management are reflected in the decisions that they make. To achieve harmony between corporate and community values, business executives modify their conduct to align with societal norms (Putra et al., 2022).

In this modern era, several parties have variously defined CSR over the years, but no universally accepted definition (McWilliams et al., 2006). However, this adds to the concept's ambiguity and unclearness. CSR is now defined in two broad areas. The first concept of CSR varies from other perspectives, which argue that corporations have wider obligations to society. Keith Davis's (1960) notion of CSR emphasizes corporations' responsibilities to positively contribute to society rather than focusing solely on maximizing profits. The second definition is held by those who argue that corporations' responsibilities are only to maximize profits within legal and ethical restrictions. As Milton Friedman (1970) stated in his works, CSR is running a corporation according to the objectives of the business owners, focusing on maximizing profits as much as possible. At the same time, they should follow the basic principles established in society through laws and regulations. He argues that enterprises should prioritize financial returns since doing so promotes economic growth and wealth creation in the long run (Friedman, 1970).

This idea generally states that a company's top priority should be profit-making, and seeking wealth from other sources will only impede its efficiency and effectiveness (Putra et al., 2022).

CSR has gained widespread acceptance. The World Bank and other global organizations highlight CSR as a critical component of company operations and outline a company's commitment to contributing to long-term economic growth and improving the quality of life for local communities, workers, and society.

2.1.1 The Development and Conceptual Framework of CSR

Understanding the evolution and foundation of CSR in the business and academic contexts needs an examination of the four-part concept first offered by Carroll (1979) and then developed into a pyramid form in 1991. Carroll's framework highlights that effective CSR implementation inside a business involves three fundamental principles: a clear understanding of CSR, identification of stakeholders to whom the firm is accountable, and a defined method for resolving these obligations (Carroll, 1979).

The CSR pyramid has four dimensions: economic, legal, ethical, and philanthropic, which are hierarchical but interrelated (Carroll, 1998). Economic responsibility, which forms the pyramid's foundation, requires businesses to operate efficiently while making a profit. Above this comes the legal obligation, which represents the commitment to follow laws and regulations. The third layer represents ethical responsibility, which addresses society's expectations that firms engage in moral norms and activities that exceed legal requirements. Finally, the apex is philanthropic responsibility, which represents discretionary contributions intended to give back to society (Carroll, 1991).

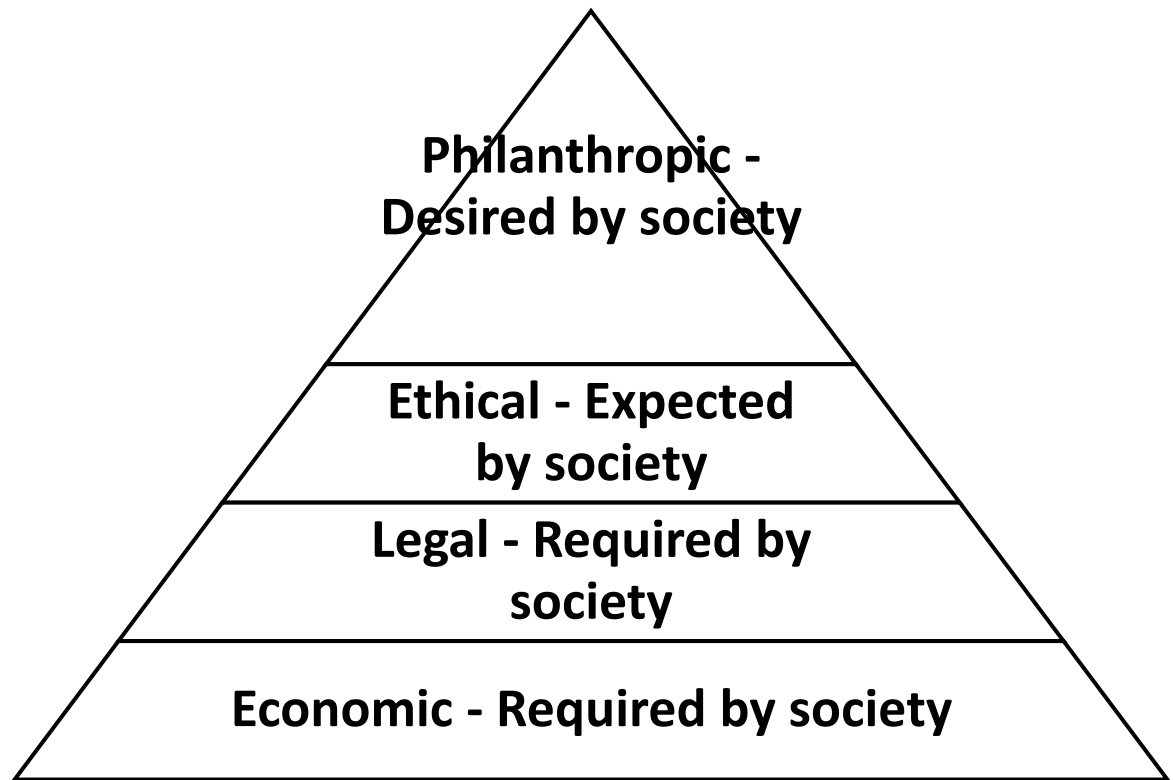


Figure 2.1: Carroll's pyramid illustrates the four dimensions of CSR.

In line with Carroll's framework, CSR is evolving to reflect the region's shifting socioeconomic landscape. CSR is broadly described as a company's overall social responsibility. This concept emphasizes the voluntary character of CSR and its incorporation into fundamental business processes. Despite the lack of a broadly accepted definition in the literature, this study will take the general perspective provided by the GCC context for consistency and clarity.

2.1.2 The Development of CSR Practices and Regional Context

While CSR has received worldwide attention, its development and execution differ by location. In Europe, CSR has traditionally been integrated

into corporate strategies through both implicit and explicit frameworks, aided by initiatives such as the European Commission's Green Paper (2001) and the United Nations Sustainable Development Goals (Matten & Moon, 2008; European Commission, 2001). These frameworks prioritize transparency, stakeholder interaction, and long-term sustainability.

In contrast, CSR activities in the GCC area are influenced by a variety of institutional, cultural, and legal factors. The area has seen an increase in interest in CSR, particularly as environmental, social, and governance (ESG) factors become more important in investment decisions (Håbek, 2014). However, CSR in the GCC is still evolving and is often influenced by government-led initiatives and public-sector involvement.

This study focuses on the GCC region, where CSR is becoming increasingly relevant for firms facing economic pressures, stakeholder expectations, and sustainability challenges. Understanding this regional context is essential to assessing how CSR practices relate to FDR in the unique institutional landscape of the GCC.

2.1.3 The ESG Framework

As economic challenges, climate change, and shifting investor expectations become more prevalent, CSR has evolved as an important risk management and competitive positioning strategy (Håbek, 2014).

In response, many businesses have adopted ESG reporting practices, with more than 90% of the world's major corporations currently producing sustainability reports (McPherson, 2019). ESG performance is increasingly

viewed as a measure of a company's ethical behavior and long-term survival. In this context, ESG scores provide a standardized and complete assessment of CSR participation by tracking organizations' performance across environmental, social, and governance aspects.

To assess the level of CSR participation across enterprises, this study uses the widely acknowledged ESG score as a proxy, which is consistent with previous research (e.g., Cheng et al., 2013; Lins et al., 2017). ESG scores are a standardized and transparent measure of a company's performance across sustainability dimensions, and they have become a global benchmark for evaluating CSR initiatives. In this study, ESG scores are derived from the Refinitiv database, which is one of the most comprehensive and extensively used ESG data providers in academic research and industry analysis.

The Refinitiv ESG framework assesses organizations using more than 400 data points, ratios, and indicators across 10 primary ESG categories grouped into three pillars: Environmental, Social, and Governance. These metrics are obtained from publicly available sources, such as annual reports, corporate sustainability reports, company websites, non-governmental organization publications, stock exchange filings, and trustworthy news sources. Refinitiv uses a rigorous blend of algorithmic and human review methods to assure accuracy, reliability, and objectivity (Refinitiv, 2020).

The overall ESG score is the weighted average of the three pillar scores, with each pillar representing a portion of the 10 separate categories. Figure 2.2 shows how each category corresponds to its pillar score. For example, the Social Pillar evaluates labor practices, human rights, society contributions, and product responsibility.

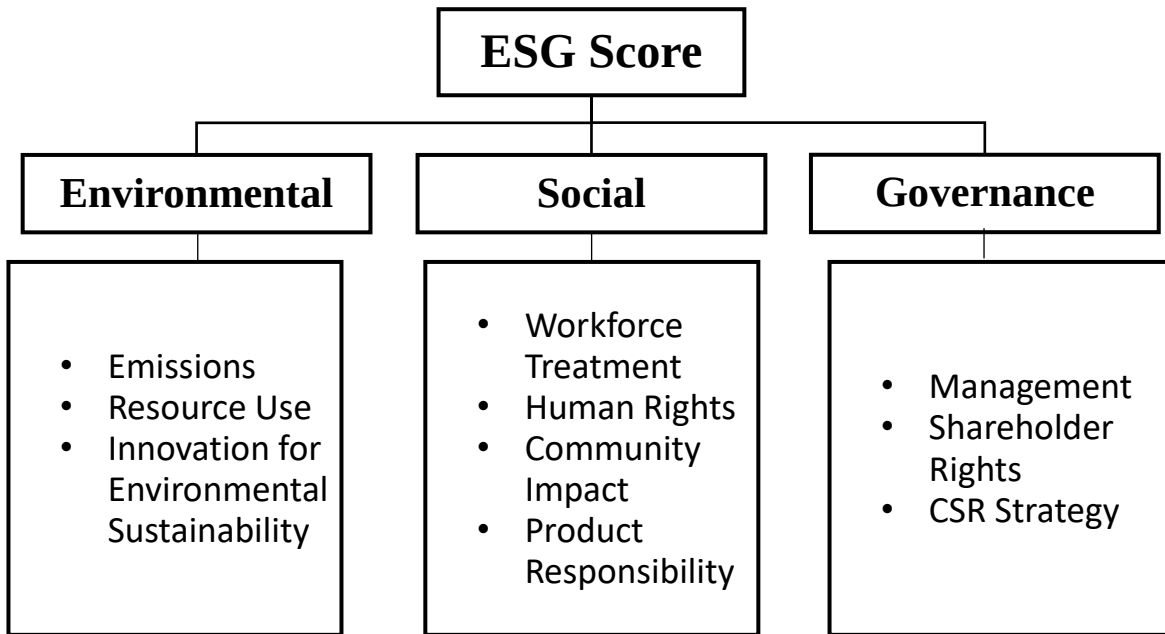


Figure 2.2 Framework for ESG Score Methodology (Adapted from Refinitiv, 2020).

Refinitiv provides ESG scores in two formats: a percentage score (0% to 100%) and a letter grade range (D- to A+). For this study, the percentage score is used as it offers a more straightforward and continuous metric that can be analyzed statistically. Each category is granted its weight allocation, as shown in Table 2.1.

It is vital to note that most measures used to calculate the ESG score are based on established and measurable company activity. As a result, employing the ESG score for a specific year is acceptable for capturing the firm's CSR activity and its immediate association with FDR during the same period. This alignment strengthens the validity of the regression analysis

conducted in this study, particularly in the context of non-financial enterprises operating in the GCC region.

Table 2.1 The ESG factor weight allocations.

Pillar	Category	Weights	Pillar Weights
Environmental	Emissions	11%	34%
	Resource Use	12%	
	Innovation	11%	
Social	Workforce	16%	35.5%
	Human Rights	4.5%	
	Community	8%	
	Product Responsibility	7%	
Governance	Management	19%	30.5%
	Shareholders	7%	
	CSR Strategy	4.5%	
Total	ESG Score		100%

2.2 Financial distress risk (FDR)

The literature on financial distress has a rich and extensive history. Beaver's (1966) early use of individual financial ratios marked the first attempts to anticipate bankruptcy and discriminate between healthy and distressed enterprises. This was followed by Altman's (1968) invention of the Z-Score, which uses Multivariate Discriminant Analysis to anticipate the probability of bankruptcy. Since then, several models have been introduced, each with a distinctive approach. For example, Ohlson's (1980) O-Score employs a logit model, whereas Zmijewski's (1984) Probit model, based on accounting data, integrates a variety of independent variables to identify financial distress.

Financial distress is a very vague and broad term with several definitions that range from insolvency to failure, bankruptcy, and default (Al-Hadi et al., 2017; Habib et al., 2018). Failure takes place when the realized rate of return on investments after allowance for risk consideration is much lower than the returns generated by comparable investments, when revenue is inadequate to meet expenditures, and when the average return on investment is always less than the firm's cost of capital (Al-Hadi et al., 2017; Habib et al., 2018). Insolvency refers to a company's inability to meet its current obligations, which may be due to liquidity issues (Habib et al., 2018). Bankruptcy refers to the company's financial distress that needs a legal declaration from the courts (Habib et al., 2018). A default can be of two types: technical default or legal default. A technical default occurs when a company violates a contractual obligation (for example, a debt covenant violation), and a legal default occurs when a company fails to settle periodic loan repayments. Regardless of the default types, both indicate declining company performance and financial distress (Habib et al., 2018).

Wruck (1990) defines financial distress as a scenario in which the company's cash flow is insufficient to pay its present obligations. When a company confronts liquidity issues or is unable to meet its debt obligations, such as paying debts, due to a lack of cash flow or other financial problems, it is said to be in financial distress, which raises the probability of default (Koochi et al., 2022; Pham et al., 2022). As per Platt and Platt (2002), the final phase of a company's decline is followed by more catastrophic occurrences, such as bankruptcy or liquidation.

In general, financial distress is a condition in which a firm is unable to meet its debt obligations when they become due, increasing the possibility of

default and perhaps leading to bankruptcy or liquidation, and is often preceded by signals such as breaching debt contract agreements, omission or decrease of dividends, and managerial efforts to avoid financial distress.

Moreover, poor financial management, economic downturns, and unexpected events such as natural disasters or pandemics can all contribute to financial distress (Putra et al., 2022). It harms a firm's value and can result in limiting access to loans, increasing the costs of stakeholder relationships, encouraging harmful conduct, a loss of market share, and the necessity to sell assets at prices much below market value. Also, financially distressed companies may have difficulty attracting external capital and are seen as having a low credit rating (Koohi et al., 2022).

The lack of a consistent definition for when enterprises enter financial distress constrains the prediction literature since numerous alternative indicators used to measure distress may not effectively represent the situation of financial distress itself (Platt & Platt, 2002). Scholars and practitioners use different criteria and indicators, such as financial ratios or market signals, which may indicate financial issues but may not accurately reflect the underlying degree of distress. This lack of standardization makes it difficult to develop a consistent and trustworthy framework for anticipating financial distress, as certain indicators may fail to account for all the complexity involved.

Furthermore, certain impacts may be causative rather than predictive of financial distress (Opler & Titman, 1994). In other words, some financial indicators may be associated with distress but not necessarily the cause of it. For example, while decreased profitability and increased debt may be associated with firms experiencing financial difficulties, these characteristics

may not directly cause distress. Instead, they might be indicators of deeper concerns, such as bad management decisions or greater market challenges, that financial data alone cannot reveal. This distinction between causation and prediction is critical for ensuring that predictive models appropriately represent the underlying reasons for financial hardship rather than just finding trends that may not be due to direct causal linkages.

According to the existing literature, financial distress may impose deadweight costs on companies directly and indirectly. Direct costs associated with bankruptcy include consulting, legal, and administrative fees, whereas indirect costs are associated with decreased company operation, reduced labor morale, and so on (Zheng et al., 2019; Putra et al., 2022). The direct costs of financial distress vary from 1% to 5% of the company's value, but the indirect costs are enormous, ranging from 11% to 17% of the company's value based on the drop in income of bankrupt firms (Zheng et al., 2019; Putra et al., 2022).

Following Kim (1978), the trade-off theory argues that corporations achieve their optimal debt ratio by balancing tax advantages and financial distress costs.

According to trade-off theory, continuous financial distress is costly to the firm and might lead to bankruptcy (Zheng et al., 2019). Moreover, financial distress is risky to a firm since it limits its ability to collect cash in the time required and take benefits of tax protection, resulting in a drop in firm value (Farooq & Noor, 2021).

Previous research revealed that a firm in financial distress could lose market share and be forced to sell its assets at a price considerably below the market value (Shleifer & Vishny, 1992; Opler & Titman, 1994). Although

financial distress does not always indicate that a company will collapse, a severe and sustained fall in a company's financial performance may eventually result in bankruptcy, causing investors and creditors to incur significant losses (Habib et al., 2018).

Therefore, prior studies describe financial distress as an unsettling occurrence that is particularly costly for debtholders and nonfinancial stakeholders since it sets the stage for corporations to act destructively (Opler & Titman, 1994).

In addition, financial distress might limit a company's access to financing since lenders may regard distressed enterprises as higher-risk borrowers. Furthermore, agency conflict raises the costs of maintaining stakeholder relationships, as diverse parties, such as shareholders, managers, and creditors, sometimes have competing interests. However, more recent research indicates that financial distress is not necessarily bad for a company's success. In certain circumstances, financial distress can improve business performance by motivating essential adjustments, such as restructuring or adopting a new legal structure, which may include taking on additional leverage. These improvements can increase efficiency, align stakeholder interests, and position the company more competitively in the market.

Wruck (1990) argues that financial distress might push managers to seek value-maximizing projects that increase company value, which would otherwise be ignored. Although the literature suggests that financial distress may be both beneficial and costly based on the situation, Cutler and Summers (1988) contend that quantifying the benefits and costs of financial distress is challenging.

Much of the extensive literature on financial distress focuses mainly on predicting bankruptcy using various models and theories. These models depend primarily on accounting metrics such as profitability, cash flow, and leverage ratios (Hillegeist et al., 2004). The Altman Z-Score (1968) and Ohlson O-Score (1980) are commonly used models in research to assess the likelihood of default. These models are among the most cited in financial distress literature and have been used in various studies (Francis, 1990; Berger et al., 1996; Dichev, 1998; Griffin & Lemmon, 2002). However, traditional models have been criticized for their lack of predictability due to the nature of accounting statements and variations in the distribution of accounting ratios over time (Mensah, 1984). However, Hillegeist et al. (2004) contend that the predictive power of accounting-based models is restricted since financial statements are prepared under the assumption of a going concern, which may limit their ability to accurately represent signals of financial distress. Despite these limitations, accounting-based models are nevertheless commonly employed due to their simplicity and accessibility

2.3 The relationship between CSR and FDR

This study examines the association between CSR and FDR, employing theories to explore how CSR might influence financial distress. These theories will provide insight into how CSR activities affect a firm's financial stability and ability to mitigate distress, each offering its perspective.

2.3.1 Stakeholder Theory

Corporations have obligations not only to shareholders but also to a more extensive variety of stakeholders, such as consumers, employees, government agencies, suppliers, creditors, environmental pressure groups, and the community (Freeman, 1984). This theory demonstrates the need to consider all stakeholders' interests in business decision-making processes, as their support and participation are critical to a business's future prosperity and long-term sustainability (Freeman, 1984). Therefore, CSR practices are consistent with stakeholder theory in that they address the demands and expectations of these communities.

When a firm experiences financial distress, it may encounter more pressure from its stakeholders, who are worried about firm stability and moral practices. Therefore, businesses may deliberately modify their CSR practices to show their dedication to social responsibility, foster goodwill, and increase stakeholder loyalty even when resources are limited (Freeman, 1984; Harrison & Wicks, 2013). It demonstrates that companies that meet the demands and concerns of numerous stakeholders may improve their reputation, develop trust, and encourage loyalty, resulting in increased financial performance and decreased FDR (Harrison & Wicks, 2013).

Wu et al. (2020) discovered that companies with strong CSR practices are more likely to obtain support from creditors and investors during financial downturns, which improves financial stability. Furthermore, stakeholder theory implies that CSR boosts a company's social capital, which can act as a buffer against financial distress by strengthening consumer loyalty, retaining employees, and cultivating favorable connections with

regulators (Freeman, 1984; Choi et al., 2021). Thus, companies that engage in CSR practices may be more resilient while encountering financial challenges, as stakeholders are more likely to extend financial and operational support.

Stakeholder theory and CSR may demonstrate how a business's involvement with its stakeholders through CSR activities can provide long-term value and foster goodwill, trust, and a network of supporters (Parmar et al., 2010). This network can operate as a buffer against financial distress by assisting the company in navigating obstacles and lowering risks (Parmar et al., 2010; Roberts, 1992).

Furthermore, this theory implies that companies that actively participate in ethical business practices are more likely to align their operations with their stakeholders' expectations, which lowers information asymmetry and improves transparency.

2.3.2 Signaling Theory

While stakeholder theory highlights the importance of trust and relationships, signaling theory focuses on how CSR signals financial stability and ethical conduct to stakeholders.

According to signaling theory, corporations utilize observable behaviors like CSR practices to indicate stability, ethical conduct, and long-term commitment to stakeholders (Spence, 1973). For example, participating in CSR shows financial health to creditors and investors, which can increase funding accessibility and minimize the likelihood of FDR.

Connelly et al. (2011) describe signaling theory as a persuasive framework for understanding the link between CSR and FDR. Signaling theory shows that transmitting CSR signals may produce positive information that benefits the organization while improving the enterprise's reputation and competitiveness (Wu et al., 2020).

Companies use signals to inform investors about their management's views on the company's prospects, which can influence investment decisions by explaining or describing past, present, and future business conditions and their impact on the company (Putra et al., 2022). Information provided through different channels, such as public announcements or reports, signals to investors when making their investment decisions. Among the numerous forms of signals, CSR disclosures are critical.

Companies that disclose their engagement in CSR activities can send positive signals to stakeholders and the general market. Therefore, corporations utilize CSR activities as signals to lessen information asymmetry and indicate their dedication to sustainability, ethical principles, and good governance. Such signals boost stakeholder trust, notably among investors, creditors, and consumers, by highlighting the company's financial stability.

CSR practices can serve as a positive signal to investors and creditors, demonstrating that the company has sufficient resources to spend on social and environmental activities beyond its core business operations (Boubaker et al., 2020). This signal of strength may lessen FDR by enhancing investor confidence and improving access to funds.

However, signaling theory suggests that CSR may exacerbate financial distress if stakeholders perceive CSR spending as excessive or mismatched

with the firm's financial health (Sun & Cui, 2014). In this situation, CSR may give the appearance that the company is overextending itself financially, perhaps making it more vulnerable to financial issues. Firms that devote too many resources to CSR at the expense of core business operations risk deteriorating financial performance and increasing exposure to financial distress.

According to Bae et al. (2018), CSR practices minimize the perceived risk of financial distress, decrease financing costs, and give enterprises better access to finance during economic downturns. Similarly, Uyar et al. (2020) argue that CSR increases business reputation, strengthens stakeholder trust and loyalty, and provides a buffer against financial distress. Thus, signaling theory demonstrates how CSR improves stakeholder relationships and boosts companies' ability to resist financial crises.

2.3.3 Resource-Based Theory

According to resource-based theory, CSR may serve as a valuable intangible asset. CSR activities can be strategic resources that help a company gain a competitive advantage and increase a firm's resilience (Barney, 1991). These intangible assets may serve as a strategic advantage during financial distress, giving businesses a competitive edge even when struggling financially.

Companies that engage in CSR activities may improve their reputation and brand loyalty, build social capital, and distinguish themselves, these aspects collectively promote long-term financial stability and perhaps lower FDR (McWilliams & Siegel, 2001). CSR may help corporations maintain

their financial performance by strengthening their reputation (Carter, 2005). Even a firm with a high risk of bankruptcy can obtain better funding if it participates more in CSR activities (Tarighi et al., 2022). Therefore, a company's reputation may create a competitive edge, resulting in superior financial results and stabilizing financial performance.

This reputation may reduce the risk of financial distress since it provides a cushion for the organization by ensuring consumer loyalty and positive connections with regulators. Firms that engage in CSR may be more resilient to unfavorable financial situations because of the unique resources produced via CSR practices (Branco & Rodrigues, 2006).

According to resource-based theory, CSR can be regarded as a strategic resource that offers intangible assets like enhanced brand recognition and consumer trust, which can assist companies in enduring financial distress (Wu et al., 2020). However, resource-based theory implies that excessive CSR expenditure can strain a firm's financial resources, especially during financial distress (Barney, 1991). As a result, while CSR might provide protection, it can also raise financial exposure if not managed strategically.

2.3.4 Summary of Theoretical Expectations

Stakeholder and signaling theory suggest that CSR mitigates FDR by increasing stakeholder trust and signaling financial robustness. In contrast, the resource-based theory emphasizes the hazards of excessive CSR expenditure, which may raise financial vulnerability. The purpose of this study is to test these opposing theoretical viewpoints to better understand the link between CSR and the FDR.

Chapter Three

Literature Review and Hypotheses Development

Empirical research on the association between CSR and FDR is conflicting and in its early stages. Although several research studies have explored the relationship between CSR and financial performance, the literature falls short of completely investigating its correlation to financial distress. The following paragraphs address existing literature on the subtopics and their interconnectedness to build the hypothesis and demonstrate the contribution of this study.

3.1 CSR and FDR

CSR has been extensively researched by scholars and practitioners over the last few decades as a strategic concern for business enterprises. Despite being a key and widely explored field of study, the literature on the association between CSR and financial distress remains limited.

On one hand, proponents argue that CSR reduces financial distress by fostering stakeholder trust, improving risk management, and facilitating access to capital (Boubaker et al., 2020; Choi et al., 2021). On the other hand, critics suggest that CSR initiatives may lead to excessive expenditures, distracting firms from their primary financial goals and potentially increasing financial vulnerability (Lin & Dong, 2018).

Previous research on the association between CSR and financial distress in general has shown a negative result. Sun and Cui (2014) explored the association between CSR and firm default risk in Chinese listed companies

by measuring default risk using credit rating scores. Using a sample of 303 firms collected between 2008 and 2010, their findings demonstrated that higher levels of CSR initiatives, including environmental and social elements, are related to higher credit ratings, implying a decreased risk of financial distress (Sun & Cui, 2014). The authors argued that CSR activities boost a company's brand and stakeholder connections, which improves access to funding and operational stability (Sun & Cui, 2014). Furthermore, they discovered that the impact of CSR in mitigating financial distress was stronger in enterprises operating in industries with greater environmental and social vulnerability, particularly in emerging markets (Sun & Cui, 2014).

Mecaj and Bravo (2014) used a sample of U.S. firms, categorized them into healthy and distressed firms, and examined whether firms altered their CSR behaviors when identifying signals of financial distress from 2001 to 2007. This distinction enables the authors to explore how financial distress affects CSR strategies and organizations' attitudes toward responsible conduct, and their results show that healthy firms showed consistent changes in CSR activity throughout all investigated periods.

In contrast, distressed firms often change their CSR behaviors after identifying financial distress by diminishing their CSR strengths (positive acts that contribute to society's welfare) while increasing their CSR concerns (negative behaviors) one year later (Mecaj & Bravo, 2014). This change suggests that in times of financial distress, corporations may reduce their proactive CSR activities in favor of more reactive or negative CSR initiatives. However, these findings show that financial distress may cause a strategic shift in CSR activities, with distressed firms adopting more cautious CSR practices in response to financial pressure (Mecaj & Bravo, 2014).

Al-Hadi et al. (2017) examined how CSR performance affects financial distress across different stages of the firm life cycle of Australian firms. Based on a sample of 651 firms covering the years 2007-2013, they measured FDR using three different models to improve the robustness of their findings, which are the Berger et al. (1996) model that focuses on capital structure and financial policies, the Altman Z-Score (1968) model that combines financial ratios to predict the likelihood of bankruptcy, the Almeida and Campello (2007) model that focuses on liquidity constraints and financial flexibility. Higher values of these three models indicate lower financial distress levels, implying that improved CSR performance relates to lower financial distress across all three measures. Their findings revealed that enterprises in the mature stages of their life cycle are more likely to benefit from positive CSR effects on stakeholder trust, corporate reputation, and financial stability.

Using the North American database, Lin and Dong (2018) investigated how CSR activity affects the chance of bankruptcy in financially distressed firms using a sample of 4,163 firms from 2000 to 2014. They measured FDR by using the Altman Z-Score (1968) model. They discovered that firms with a history of vigorous CSR activities were less likely to declare bankruptcy while in financial distress and tended to recover faster. This effect was linked to CSR's capacity to strengthen stakeholder connections, boost the firm's reputation, and build goodwill, all of which contribute to the firm's stability during periods of financial instability.

Shahab et al. (2018) examined the relationship between CSR and FDR in China by distinguishing between state-owned enterprises and non-state-owned enterprises. Based on a sample of 749 firms covering the period of 2009 to 2014, they measured FDR using the China-specific Altman Z-Score

(1968) model. They found that better CSR ratings are linked to a lower risk of financial distress, although the intensity of this association varied by ownership type. They found that CSR is more effective at reducing financial distress in non-state-owned Chinese firms than in state-owned firms. The state-owned firms are backed by the government, which helps them avoid financial difficulties, and are less likely to participate in CSR initiatives. The non-state firms do not receive the same level of government support, leaving them more vulnerable to financial difficulties. As a result, CSR is more effective at decreasing financial distress in non-state-owned businesses because they face greater financial pressures without state support, pushing them to engage in more CSR-related activities to alleviate distress (Shahab et al., 2018).

Zheng et al. (2019) investigated by using a broad U.S. database, how CSR activity influences a firm's likelihood of encountering financial distress. Drawing on 11,840 firm-year observations from 1991 to 2015, they measured financial distress using two variables based on Atanassov and Kim's (2009) model. Their findings showed that organizations with better CSR practices had a much-reduced risk of financial distress than enterprises with inferior CSR activities. In addition, they found that the impact of CSR on financial distress is obvious during economic downturns and for enterprises with a high level of international participation, confirming the notion that CSR builds stakeholder ties and reduces FDR.

Boubaker et al. (2020) explored whether CSR activities substantially mitigated FDR using a sample of 1,201 U.S.-listed firms from 1991 to 2012. They used the Altman Z-Score model (1968) as the major measure of FDR and assessed the findings' robustness using different proxies such as the O-

Score model (Ohlson, 1980) and ZM-Score model (Zmijewski, 1984). They found that organizations with stronger CSR activity are less likely to face financial distress and are more likely in enterprises operating in industries with high stakeholder awareness or robust governance systems. Therefore, the authors concluded that the effectiveness of CSR as a risk management strategy depends on industry characteristics and internal governance quality.

Wu et al. (2020) examined the relationship between CSR and FDR in the context of 1,445 Chinese manufacturing companies listed on the stock exchanges from 2013 to 2018. Their study measures financial distress using the Altman Z-Score model (1968). Their findings demonstrated that CSR participation had a favorable impact on financial performance, especially in times of financial crisis. This shows that CSR can act as a buffer against economic instability by promoting stakeholder trust and confidence. However, this study also found that the advantages of CSR in decreasing financial distress are inconsistent across all organizations. Companies with more visible CSR operations or those operating in industries with strong stakeholder scrutiny tended to profit more from CSR participation. This emphasizes the relevance of the industrial context and the strategic alignment of CSR activities with a company's overall goals (Wu et al., 2020).

Choi et al. (2021) examined whether CSR might mitigate the detrimental impact of financial distress on earnings management and accounting quality using Korean-listed non-financial firms, utilizing a sample of 3940 firm-year observations from 2009 to 2017. Their study employed the Altman Z-Score model (1968) to measure financial distress and also applied a K-Score model specifically designed for Korean companies. Their research discovered that companies with stronger CSR activity will likely retain

superior accounting quality and exhibit less aggressive earnings management even during financial distress. Their findings highlight the significance of CSR in mitigating FDR and sustaining fundamental features of financial management and governance.

Khan et al. (2021) investigated the relationship between CSR and FDR in the context of Pakistani-listed non-financial firms, using both the Altman Z-Score model (1968) and ZM-Score model (Zmijewski, 1984) as proxies for financial distress. Using a sample of 213 non-financial firms collected from 2005 to 2017, they found that CSR participation considerably decreases FDR for enterprises operating in emerging markets.

Koohi et al. (2022) used the directional distance function to investigate the impact of CSR performance on financial distress at various stages of a company's life cycle among 112 listed firms on the Tehran Stock Exchange from 2009 to 2019. The Berger, Ofek, and Swary (1996) model, the Altman Z-Score (1968) model, and the Almida and Campello (2007) model are three alternative proxies that are used to measure the FDR. Their findings demonstrated that CSR participation had variable effects on financial distress depending on the firm's life cycle stage. The authors found that CSR and the life cycle's growth and maturity phases significantly and negatively affect financial distress. In contrast, CSR performance and life cycle during the recession phase significantly and positively affect financial distress owing to the obstacles associated with declining market relevance and resource restrictions.

Putra et al. (2022) examined the relationship between CSR and FDR in the context of Indonesian enterprises by using a sample of 114 manufacturing firms and concentrating on the periods before and during the COVID-19

epidemic (2019-2020). They used the Altman Z-Score model (1968) to measure FDR and discovered a direct link between financial distress and CSR disclosures, implying that companies experiencing financial distress are likely to raise their CSR disclosures. This behavior indicates that corporations may use CSR as a reputation-building strategy or to reduce unfavorable stakeholder views, especially during financial instability.

Theodorus and Rudyanto (2022) investigated the relationship between CSR and FDR in the context of 132 Indonesian manufacturing enterprises during the COVID-19 epidemic (2019-2021), and financial distress was measured using the Altman Z-Score model (1968). Their findings show an inverse link between CSR disclosure and financial distress, implying that higher levels of CSR disclosure led to less financial distress. However, their research reveals that while CSR disclosure can alleviate financial distress, its influence is insufficient to serve as a substantial or independent solution during a crisis. Using propensity score matching, the researchers determined that disclosures in annual reports, while useful, are insufficient to significantly relieve financial distress. This constraint is especially evident during severe situations like the COVID-19 pandemic, when larger economic concerns outweigh the advantages of CSR participation (Theodorus & Rudyanto, 2022).

Farooq et al. (2022) employed Altman Z-score and ZM-Score to assess financial distress in 139 non-financial enterprises listed on the Pakistan Stock Exchange from 2008 to 2019. The study indicated that CSR had a substantial negative impact on financial distress, supporting stakeholder theory.

Suganda and Kim (2023) examined a sample of 6,977 firm-year observations from Korean listed non-financial firms between 2011 and 2021.

Using Z-score, K-score, and distance-to-default as proxies for default risk, they found a significant negative relationship between CSR and financial distress. In addition, they found that each dimension of CSR—environmental, social, and governance—individually contributed to reducing default risk, confirming the overall inverse relationship between CSR and financial distress.

Using a dataset of 1,257 Chinese listed firms from 2011 to 2021, Rahman et al. (2023) employed the Altman Z-Score (1968) model as a proxy for financial distress and CSR Score as a proxy for CSR and found an inverse relationship between CSR and financial distress. The relationship was more pronounced in non-state-owned enterprises and those audited by non-Big Four auditors and during Covid-19.

Generally, these studies aligned that CSR engagement signals a company's commitment to ethical practices and long-term value creation, which builds confidence with creditors, investors, and other stakeholders. This relieves strain on financially distressed businesses and enhances their access to financing. These advantages are particularly beneficial during financial instability since they help secure funds, lower borrowing costs, and manage risk more effectively.

On the other hand, some studies have identified a positive association between CSR and FDR. For instance, Tarighi et al. (2022) explore this relationship, focusing on the moderating role of institutional ownership. They used the Altman Z-Score model (1968) to measure the FDR. Their findings contradict conventional expectations, indicating a direct association between CSR disclosure and FDR among 200 listed manufacturing companies in the Tehran Stock Exchange from 2013 to 2018. In their analysis, they argued that

in some market environments, such as the Iranian market, CSR disclosures are more symbolic than substantive, resulting in a rise in FDR. Also, companies suffering financial challenges may use CSR as a strategy, such as for reputation management or to divert stakeholders' attention away from underlying financial issues. Thus, this behavior may contribute to increased FDR rather than mitigate it, particularly in markets where CSR initiatives are not effectively controlled or linked with business value (Tarighi et al., 2022).

Using a sample of 139 listed Pakistani firms from 2008 to 2019 and employing the Altman Z-Score (1968) model as an indicator of financial distress, Farooq and Noor (2021) demonstrate a strong positive influence of CSR on financial distress, implying that larger CSR investments are connected with a higher FDR. Their findings are consistent with the shareholder viewpoint and the over-investment hypothesis, which proposes that management may participate in CSR initiatives for their benefit, possibly diverting resources away from core operations and bringing the organization into financial distress. The authors argued that, in the context of emerging economies, CSR investments may not always correspond with shareholder interests and may worsen financial instability.

Ding et al. (2024) examined the ESG performance of Taiwanese companies in terms of credit risk and financial instability. They found that the impact of CSR or ESG dimensions on financial distress is not uniform, emphasizing that the effectiveness of such initiatives largely depends on the quality and specific focus of the firm's ESG efforts. According to the results, the authors suggest that, except for carbon emissions and water consumption, enhancements in the majority of ESG practice indicators can alleviate credit risk and financial instability. Also, firms demonstrating strong ESG practices

tend to receive favorable credit risk ratings and avoid financial instability. Their findings support the resource-based theory.

Overall, these findings add to the ongoing debate about the role of CSR in business financial health, indicating that while CSR can improve company image and relations with stakeholders, excessive or misaligned investments in CSR can harm financial stability, particularly in developing economies.

Nevertheless, much research has been conducted on the link between CSR and FDR in various global contexts, there is a significant gap in the literature on this topic within the GCC area. No previous research has explicitly examined the influence of CSR practices on FDR among GCC-listed companies. However, similar research has investigated the impact of CSR on other financial characteristics, such as financial performance and reporting quality. While these studies offer useful insights, they do not directly address FDR, emphasizing a significant gap that this study seeks to rectify.

Building on the theoretical framework and previous findings presented and discussed in the literature review, this study will examine the link between CSR and FDR among non-financial GCC-listed companies and expect that firms with high CSR practices are less likely to face financial distress risk and have better financing options to recover and avoid bankruptcy.

Therefore, the study hypothesis is formulated as follows:

H1: There is a significant negative relationship between CSR activities and FDR in the non-financial GCC-listed companies.

Chapter Four

Research Methodology

This study qualifies as applied research since it examines real-world data and seeks to produce insights for firms, politicians, and investors that may be used in decision-making. This study also employs a quantitative approach, using regression analysis as its major statistical tool to investigate the association between CSR performance and FDR in non-financial GCC-listed companies.

4.1 Study Sample, Period, and Data Collection

The study sample consists of 302 non-financial companies publicly listed on GCC stock exchanges, including 88 from the Saudi Stock Exchange (Tadawul), 27 from the Abu Dhabi Securities Exchange (ADX), 17 from the Dubai Financial Market (DFM), 26 from the Qatar Stock Exchange (QSE), 76 from the Boursa Kuwait, 18 from the Bahrain Bourse (BHB), and 50 from the Muscat Stock Exchange (MSX).

The dataset includes only non-financial sector firms; financial sector firms are purposely excluded. This restriction is due to financial organizations' unique characteristics, notably their capital structure and reporting requirements, which differ considerably from those of non-financial enterprises. Thus, by concentrating primarily on non-financial enterprises, the study assures that financial indicators are consistent and comparable among observations. An annual dataset covering 2018 to 2022 is chosen for

examination, totaling five years. The dataset contains 1,510 observations from 302 firms.

The financial and CSR data for this study were collected from LSEG Data & Analytics (formerly known as Refinitiv), a well-known database that provides detailed financial and corporate disclosures for publicly listed companies. The data will be analyzed by using multiple regression models. The received data were examined with SPSS software. All financial data used in this study were converted to and evaluated in US dollars (USD) to ensure consistency and comparability among companies listed on different GCC stock markets.

4.2 Study Variables and Their Measurement

As mentioned above, the regression variables are calculated using data collected from Refinitiv Datastream. The financial ratios were calculated independently instead of depending on existing calculations to increase the number of available data points. Table 4.1 defines and explains each variable in the regression model.

4.2.1 The Dependent Variable

Financial distress serves as the study's dependent variable. Prior literature includes different models aiming to capture a company's FDR. This study employs common accounting-based measurements, including the Z-Score (Altman 1968), the O-Score (Ohlson 1980), and the ZM-Score (Zmijewski 1984), to measure FDR. The Z-Score and O-Score models are

widely used in financial distress prediction and give a comprehensive view of a company's likelihood of experiencing financial distress.

The Z-Score model, introduced by Edward Altman in 1968, is one of the most widely used models for predicting financial distress. It has been modified to suit various industries and market conditions, yet the original form remains a fundamental tool in bankruptcy prediction. It combines a variety of financial ratios, such as working capital, retained earnings, and market value of equity, into a single score that assesses a company's likelihood of bankruptcy. The Altman Z-Score is calculated using accounting data from the most recent each year annual report to forecast bankruptcy risk for the same period. A higher Z-Score signifies better financial health and reduced financial distress. This model is cited and applied by different studies, such as Al-Hadi et al. (2017), Khan et al. (2021), and Putra et al. (2022).

The O-Score model was developed by James Ohlson in 1980 and calculates the likelihood of financial distress using a logit model based on financial ratios and firm characteristics such as size, leverage, and performance. Ohlson's model was one of the first to employ logistic regression instead of linear models, which improved accuracy in forecasting financial distress. The O-Score is still commonly used due to its reliability and ability to combine size and performance characteristics. A higher O-Score suggests a higher FDR. This model is cited and applied by Boubaker et al. (2020).

The ZM-Score model, developed by Mark Zmijewski in 1984, is intended to estimate the probability of bankruptcy using a probit regression model that relies on various financial ratios. Unlike the Altman Z-Score and Ohlson O-Score, the ZM-Score depends on fewer financial indicators to decrease noise and increase prediction accuracy. This model is valued for its

simplicity and predictive power, especially when applied to a large dataset where computing efficiency is critical. A higher ZM-Score suggests a higher likelihood of financial distress. This model is cited and used by Boubaker et al. (2020) and Khan et al. (2021).

Numerous studies (e.g., Campbell et al. 2008; Richardson et al. 2015; Tykvová & Borell 2012) have used accounting and market-based metrics to anticipate financial distress. In an international dataset, Agarwal and Taffler (2008) demonstrate that the Z-Score model outperforms hazard and market-based models in forecasting bankruptcy. Altman et al. (2016) found the Z-Score to be a reliable predictor of bankruptcy risk in longitudinal research. Thus, accounting approaches are preferred for measuring financial distress in this study.

4.2.2 Independent Variables

In this study, the independent variables are represented by CSR performance. This study used the ESG score as a proxy for the CSR performance of non-financial companies listed in the GCC. The Refinitiv ESG score database is one of the most comprehensive compilations of ESG measures and is frequently referenced in CSR literature (Krüger, 2015; Liang & Renneboog, 2017; Lins et al., 2017; Shen et al., 2016; Stellner et al., 2015; Zheng et al., 2019; Boubaker et al., 2020).

ESG performance is increasingly viewed as a measure of a company's ethical behavior and long-term survival. In this context, ESG scores provide a standardized and complete assessment of CSR participation by tracking

organizations' performance across environmental, social, and governance aspects.

To assess the level of CSR participation across enterprises, this study uses the widely acknowledged ESG score as a proxy, which is consistent with previous research (e.g., Cheng et al., 2013; Lins et al., 2017).

The ESG score, derived from the Refinitiv DataStream database, evaluates the company's performance across three key pillars: environmental, social, and governance. The combined ESG score is calculated by taking the equally weighted average of the three individual scores, providing a comprehensive indicator of CSR performance.

The Environmental Pillar describes the company's influence on natural and unnatural parts of the environment (for example, land, air, and water) and displays its commitment to reducing environmental harm. The Social Pillar assesses the company's capacity to foster trust and loyalty among stakeholders, including workers and consumers, by implementing practices such as customer safety and providing value-added goods and services. The Governance Pillar evaluates the firm's internal systems and procedures to guarantee that management and board members operate in the best interests of shareholders while following the best governance standards. This technique enables a comprehensive assessment of CSR's overall influence on FDR.

4.2.3 Control Variables

Several factors impact a company's chance of experiencing financial distress. Several control variables are used to mitigate impacts within enterprises, industries, and time series patterns.

Prior research has used distinct variables to adjust for confounding effects, yet many studies employ the same characteristics with minor differences (Waddock & Graves, 1997; Hillman & Keim, 2001; Sun & Cui, 2014; Al-Hadi et al., 2017). The control variables chosen for this study are firm size, age, leverage, and liquidity. A full description of each variable is provided below:

Firm size (FSIZE) is the natural logarithm of total assets (Sun & Cui, 2014; Al-Hadi et al., 2017; Lin & Dong, 2018; Boubaker et al., 2020; Khan et al., 2021; Koohi et al., 2022; Tarighi et al., 2022). The variable accounts for variations in funding sources and capital limits, as well as the ability to deal with competition and resource variances.

Previous research found a significant and negative relationship between firm size and FDR, which indicates that larger enterprises may endure periods of financial distress better than smaller enterprises due to increased market and political influence (Sun & Cui, 2014; Al-Hadi et al., 2017; Lin & Dong, 2018; Boubaker et al., 2020; Khan et al., 2021; Koohi et al., 2022; Tarighi et al., 2022).

Firm age (FAGE) is determined by deducting the research year by the number of years since established plus one to prevent age zero (Khan et al., 2021; Tarighi et al., 2022). Firm age is an adequate proxy for firm expertise (Sun & Cui, 2014).

Prior research found a significant and direct relationship between firm age and FDR (measured by Altman Z-Scores, a high Z-Score indicates a lower FDR), which indicates that older firms have been better equipped to maintain their operations and overcome issues due to the extensive experience they

have accumulated over time in dealing with financial distress, leading to lesser risks (Zheng et al., 2019; Khan et al., 2021; Tarighi et al., 2022).

However, other research has found a significant direct relationship between firm age and FDR (measured by ZM-Score, a high ZM-Score indicates high FDR) which implies that older firms are more prone to financial distress possibly due to increased debt, declining competitiveness, and operational challenges that emerge over time (Khan et al., 2021).

Leverage (LEV) is calculated by dividing total liabilities (short-term and long-term debt) by total assets (Al-Hadi et al., 2017; Zheng et al., 2019; Khan et al., 2021; Koohi et al., 2022).

Previous research found a significant negative relationship between leverage and FDR (Al-Hadi et al., 2017; Lin & Dong, 2018; Theodorus & Rudyanto, 2022). Thus, adjusting for the leverage ratio is critical due to the strong association between a company's indebtedness and its degree of FDR (Al-Hadi et al., 2017).

Similarly, Khan et al. (2021), using the Z-Score as a proxy, found a significant inverse relationship between leverage and FDR but found a significant and direct correlation by using the ZM-Score as a proxy. In contrast, other studies have found a significant and direct relationship using the Z-Score as a proxy (Koohi et al., 2022).

Liquidity (LIQ) is the quick ratio measured by dividing the current assets by current liabilities (Lin & Dong, 2018; Khan et al., 2021; Tarighi et al., 2022). Liquidity measures how effectively a corporation can meet its financial obligations and fund its day-to-day operations.

The study by Khan et al. (2021) found an insignificant relationship between liquidity and ZM-Score, while it found a significant and inverse relationship with Z-Score. In contrast, another study found a significant and direct relationship between liquidity and FDR (Theodorus & Rudyanto, 2022).

Nevertheless, other research concludes that liquidity and FDR have an insignificant relationship (Lin & Dong, 2018; Khan et al., 2021).

4.3 The Study Model

To examine the relationship between CSR and FDR, I developed and executed the following multivariate regression models and analyzed data for the final study sample.

The first regression model, using Altman Z-Score as a dependent variable:

$$FDR(Z_{i,t}) = \beta_0 + \beta_1(CSR_{i,t}) + \beta_2(FSIZE_{i,t}) + \beta_3(FAGE_{i,t}) + \beta_4(LEV_{i,t}) + \beta_5(LIQ_{i,t}) + \varepsilon_{i,t} \dots\dots\dots (1)$$

The second regression model tests, by using Ohlson O-Score as a dependent variable:

$$FDR(O_{i,t}) = \beta_0 + \beta_1(CSR_{i,t}) + \beta_2(FSIZE_{i,t}) + \beta_3(FAGE_{i,t}) + \beta_4(LEV_{i,t}) + \beta_5(LIQ_{i,t}) + \varepsilon_{i,t} \dots\dots\dots (2)$$

The third regression model tests, by using Zmijewski ZM-Score as a dependent variable:

$$\text{FDR}(\text{ZM}_{i,t}) = \beta_0 + \beta_1(\text{CSR}_{i,t}) + \beta_2(\text{FSIZE}_{i,t}) + \beta_3(\text{FAGE}_{i,t}) + \beta_4(\text{LEV}_{i,t}) + \beta_5(\text{LIQ}_{i,t}) + \varepsilon_{i,t} \dots\dots\dots (3)$$

Where:

FDR = Financial distress risk

Z = Altman's Z-Score

O = Ohlson's O-Score

ZM = Zmijewski's ZM-Score

CSR = Corporate Social Responsibility

FSIZE = Firm Size

FAGE = Firm Age

LEV = Leverage

LIQ = Liquidity

ε : Error term

Table 4.1: Variable Measurements

Variables	Measurement	Reference
Dependent Variable (Financial Distress Risk)		
FDR(Z)	$Z\text{-Score} = 1.2 \times (X1) + 1.4 \times (X2) + 3.3 \times (X3) + 0.6 \times (X4) + 0.99 \times (X5)$; Description: X1 = Working Capital divided by Total Assets; X2 = Retained Earnings divided by Total Assets; X3 = Earnings before Interest and Taxes divided by Total Assets; X4 = Market Value of Equity divided by Book value of Total Debt; X5 = Total Sales divided by Total Assets; Therefore, higher values of Z-Score represent lower levels of FDR.	(Altman, 1968)
FDR(O)	$O\text{-Score} = -1.32 - 0.407 \times (X1) + 6.03 \times (X2) - 1.43 \times (X3) + 0.076 \times (X4) - 1.72 \times (X5) - 2.37 \times (X6) - 1.83 \times (X7) + 0.285 \times (X8) - 0.521 \times (X9)$; Description: X1 = Log (Total Assets); X2 = Total Liabilities divided by Total Assets; X3 = Working Capital divided by Total Assets; X4 = Current Liabilities divided by Current Assets; X5 = Dummy Variable (takes one if Total Liabilities is higher than Total Assets and zero otherwise); X6 = Net Income divided by Total Assets; X7 = Cash from Operations divided by Total Liabilities; X8 = Dummy Variable (takes one if net loss occurs in the current and prior year and zero otherwise); X9 = Change in Net Income; Therefore, higher values of O-Score represent higher levels of FDR.	(Ohlson, 1980)
FDR(ZM)	$ZM\text{-Score} = -4.336 - 4.513 \times (X1) + 5.679 \times (X2) + 0.004 \times (X3)$; Description: X1 = Net Income divided by Total assets; X2 = Total Liabilities divided by Total assets; X3 = Current Assets divided by Current Liabilities; Therefore, higher values of ZM-Score represent higher levels of FDR.	(Zmijewski, 1984)
Independent Variable (Corporate Social Responsibility)		
CSR	ESG Score by using the Refinitiv ESG score database	(Zheng et al., 2019), (Boubaker et al., 2020).
Control Variables (Firm Size, Firm Age, Leverage, Liquidity)		
FSIZE	Natural Logarithm of Total Assets	(Khan et al., 2021), (Tarighi et al., 2022)
FAGE	Number of firm years since establishment (plus one to avoid age of zero)	(Khan et al., 2021), (Tarighi et al., 2022)
LEV	Total Debt divided by Total Assets	(Khan et al., 2021)
LIQ	Current Assets divided by Current Liabilities	(Tarighi et al., 2022)

Chapter Five

Results and Discussions

This chapter presents the regression results, which test the study's hypothesis. In addition, descriptive analysis and correlation tests are used to gain a thorough grasp of the data. A correlation matrix is used to test multicollinearity and to ensure that no econometric concerns exist. Descriptive analysis summarizes the essential characteristics of sample data, providing insights into the variables' distribution and central tendency. Multiple regression analysis is then used to assess the impact of CSR on FDR.

5.1 Descriptive Statistics of the Study Variables

This section presents the descriptive statistics for the dependent, independent, and control variables used in this study. The statistics include the mean, median, minimum, maximum, standard deviation, and sample size.

The results of the descriptive analysis in Table 5.1 show substantial firm variation regarding financial stability, CSR engagement, and control variables. The standard deviations indicate a widespread variation in financial distress risk (Z-Score, O-Score, and ZM-Score) and CSR practices. These insights provide a foundation for further inferential analysis to explore the relationship between CSR and FDR.

5.1.1 Dependent Variables

The mean Z-Score is 3.866, with a median of 2.36, indicating that the financial stability of the sampled firms varies significantly. The minimum value of -33.722 and maximum value of 50.224 suggest that some firms experience extreme financial distress while others are financially stable. The standard deviation (5.263) highlights the variability in financial stability across firms.

The mean O-Score is -4.389, with a median of -4.159. The high standard deviation (16.277) and the wide range (from -484.682 to 143.303) indicate significant differences in firms' likelihood of bankruptcy.

The average ZM score is 2.559, with a median of 2.376. The minimum value of -1.056 and maximum value of 69.349 suggest that while most firms are within a typical range, some exhibit extreme financial characteristics.

5.1.2 Independent Variable

The mean of the CSR score is 6.889, with a maximum of 84 and a minimum of 0, indicating variations in firms' CSR engagement. The standard deviation of 15.803 suggests a considerable difference in CSR adoption among the sampled companies.

5.1.3 Control Variables

The average firm size (SIZE) is 15.77, with a median of 14.26. The standard deviation (3.896) suggests moderate variability in company sizes.

The mean firm age (FAGE) is 33.169 years, with a median of 30. The high standard deviation (15.067) and the range from 10 to 140 indicate that firms in the sample vary significantly in age. The average leverage (LEV) ratio is 0.465, with a median of 0.443. The small standard deviation (0.509) suggests that most firms have similar leverage levels. The mean liquidity (LIQ) ratio is 2.808, with a median of 1.404, indicating that some firms maintain high liquidity, while others operate with lower liquidity levels. The standard deviation (6.188) suggests significant variation among firms.

Table 5.1 Descriptive Statistics

Variables	Min	Max	Mean	Median	SD	N
Z-Score	-33.722	50.224	3.866	2.360	5.263	1510
O-Score	-484.682	143.303	-4.389	-4.159	16.277	1510
ZM-Score	-1.056	69.349	2.559	2.376	3.024	1510
CSR	0.000	84.000	6.889	0.000	15.803	1510
FSIZE	8.931	24.400	15.770	14.260	3.896	1510
FAGE	10.000	140.000	33.169	30.000	15.067	1510
LEV	0.003	11.744	0.465	0.443	0.509	1510
LIQ	0.009	95.074	2.808	1.404	6.188	1510

5.2 Correlation Analysis

This section presents the Pearson correlation coefficients between the dependent, independent, and control variables. Pearson correlation values range from -1 to 1, where Positive values indicate a direct relationship between variables, Negative values indicate an inverse relationship, and

Values closer to 0 suggest weak or no correlation. The correlation results are presented in Table 5.2.

5.2.1 Relationship Between Financial Distress Measures and CSR

The correlation between CSR and Z-Score is 0.028, indicating a moderate positive relationship. This suggests that firms with higher CSR engagement tend to have higher Z-Scores, meaning they are more financially stable.

The correlation between CSR and O-Score is -0.123, showing a weak negative relationship. Since a higher O-Score suggests higher bankruptcy risk, this inverse correlation implies that firms with better CSR practices may have lower financial distress risk.

The correlation between CSR and ZM-Score is -0.003, suggesting a very weak negative relationship. This indicates that CSR has little direct impact on this specific financial distress measure.

5.2.2 Relationship Between Control Variables and Financial Distress

The firm size (SIZE) is inversely correlated with Z-Score (-0.084) and with O-Score (-0.145), indicating that larger firms are slightly more financially stable. Its correlation with CSR (0.371) suggests that larger firms may actively engage in CSR.

The firm age (FAGE) shows a weak direct correlation with Z-Score (0.075) and a weak inverse correlation with O-Score (-0.058), implying that older firms tend to be slightly more financially stable. Its correlation with CSR (-0.075) suggests that firm age does not significantly influence CSR activities.

The leverage (LEV) is inversely correlated with Z-Score (-0.402) and directly correlated with O-Score (0.246), indicating that higher leverage (debt) is associated with higher financial distress risk. Its correlation with CSR is very weak (0.018), suggesting no significant relationship between leverage and CSR practices.

The liquidity (LIQ) is directly correlated with Z-Score (0.12) and inversely with O-Score (-0.062), meaning that firms with higher liquidity tend to have lower FDR. It's inversely correlated with leverage (-0.061), indicating that firms with more liquidity rely less on debt.

In summary, CSR is moderately positively correlated with financial stability (Z-Score) and negatively correlated with FDR (O-Score), supporting the idea that CSR engagement may enhance financial resilience. The firm size and age have weak positive relationships with financial stability. The leverage has the strongest negative correlation with financial stability, reinforcing its role as a key risk factor for financial distress. Liquidity is directly linked to financial stability, suggesting that firms with better cash management experience lower FDR.

This correlation analysis provides initial insights into the relationships between financial distress, CSR, and control variables. However, further regression analysis is required to determine causality and the strength of these relationships.

Table 5.2 Pearson Correlation Coefficients

<i>Pearson Correlation</i>	Z-Score	O-Score	ZM-Score	CSR Score	FSIZE	FAGE	LEV	LIQ
Z-Score	1							
O-Score	-0.109	1						
ZM-Score	-0.427	0.263	1					
CSR Score	0.028	-0.123	-0.003	1				
FSIZE	-0.084	-0.145	0.052	0.371	1			
FAGE	0.075	-0.058	-0.066	-0.075	0.037	1		
LEV	-0.402	0.246	0.989	0.018	0.077	-0.071	1	
LIQ	0.120	-0.062	-0.162	-0.061	-0.030	0.036	-0.169	1

5.3 The Results of the Study Model

This section presents the regression results analyzing financial distress in relation to CSR, with CSR performance measured using the combined ESG score. It is believed that the overall ESG score has the potential to account for differences in the degree of financial distress. It is critical to note that a positive significant coefficient for the Altman Z variable indicates lower levels of financial distress, whereas negative significant coefficients for the Ohlson O and Zmijewski ZM variables result in the same conclusion.

5.3.1 Impact of CSR on FDR: Altman Z-Score Model

The results in Tables 5.3, 5.4, and 5.5 (i.e., regression statistics, ANOVA, and coefficients) show the impact of CSR on FDR by using Altman Z-Score as a dependent variable in the first regression model.

The R-Square is 0.1740, and the model explains 17.40% of the variation in the Z-Score. The adjusted R-Square is 0.1713; after adjusting for the number of predictors, the explanatory power remains similar.

The F-statistic and the p-value in Table 5.4 show that the regression model is highly statistically significant, which implies the predictors collectively explain a substantial portion of the variation in the dependent variable. Hence, the model used fits the data well.

5.3.1.1 Relationship between CSR and FDR: Altman Z-Score Model

Table 5.5 shows a strong positive association between CSR and FDR at the 1 percent level. This suggests that non-financial GCC-listed companies with higher CSR scores tend to have higher Z-Scores, indicating a lower risk of financial distress, as a high Z-Score implies a lower risk and lower probability of bankruptcy. This result is consistent with the findings of Al-Hadi et al. (2017), who found that positive CSR performance significantly decreases the firm's financial distress. Therefore, companies engaged in more substantial positive CSR activities can reduce their financial distress levels.

Also, the result of this study has been supported by the study of Lin and Dong (2018), who found that enterprises with a history of positive CSR participation are less likely to declare bankruptcy while in severe financial distress and are more likely to recover faster.

Similar findings have been reported in studies conducted on U.S. listed companies, Chinese listed companies, non-financial Pakistani listed Companies, Tehran non-financial listed companies, manufacturing

Indonesian listed companies, which found a significant and direct relationship between CSR and FDR using Altman Z-Score, indicating that distressed companies with higher CSR activity are less likely to declare bankruptcy (Shahab et al., 2018; Boubaker et al., 2020; Wu et al., 2020; Khan et al., 2021; Koochi et al., 2022; Theodorus & Rudyanto, 2022; Putra et al., 2022).

Therefore, the results of the first regression model suggest that firms with higher CSR scores tend to have higher Z-Scores, which supports the hypothesis of a negative and significant correlation with CSR, suggesting that high CSR activities decrease the likelihood of financial distress. This finding is also consistent with prior studies that demonstrate companies with strong CSR standards are regarded as more creditworthy and have easier access to financing (Sun & Cui, 2014; Al-Hadi et al., 2017; Boubaker et al., 2020; Wu et al., 2020).

This result is consistent with stakeholder theory (Freeman, 1984), which emphasizes that addressing the needs and expectations of various stakeholders can enhance a firm's reputation, improve resource management, and contribute to financial resilience. Furthermore, the finding supports signaling theory (Spence, 1973), suggesting that firms actively investing in CSR send positive signals to the market about their financial health, ethical behavior, and long-term strategic vision. These signals can reduce information asymmetry and strengthen investor confidence, ultimately lowering perceived risk. Thus, CSR serves not only a moral function but also acts as a strategic mechanism to reinforce financial stability.

5.3.1.2 Effect of Control Variables: Altman Z-Score Model

The results in Table 5.5 show a strong negative association between firm size and FDR at the 1 percent level. This indicates that larger firms are more likely to experience financial distress. This result is consistent with prior research (Al-Hadi et al., 2017; Lin & Dong, 2018; Khan et al., 2021; Koohi et al., 2022; Theodorus & Rudyanto, 2022), which likewise found an inverse coefficient for firm size when predicting financial distress using the Z-Score.

The results in Table 5.5 show a significant positive association between firm age and FDR at the 5 percent level. This implies that older firms tend to have lower FDR. This result is consistent with the findings of Khan et al. (2021).

Also, the results in Table 5.5 show a strongly significant negative association between leverage and FDR at the 1 percent level. This result suggests that highly leveraged firms face higher financial distress risk. These results align with previous studies (e.g., Al-Hadi et al., 2017; Khan et al., 2021; Theodorus & Rudyanto, 2022).

Table 5.5 shows a significant positive association between liquidity and Z-Score at the 5 percent level. This implies that firms with better liquidity are less likely to face financial distress. These findings align with the results of previous studies (e.g., Al-Hadi et al., 2017; Theodorus & Rudyanto, 2022).

Table 5.3 Regression Statistics Model 1

<i>Regression Statistics</i>	
Multiple R	0.417
R Square	0.174
Adjusted R Square	0.171
Standard Error	4.791
Observations	1510

Table 5.4 ANOVA Table Model 1

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	7274.468	1454.894	63.392	0.000
Residual	1504	34517.965	22.951		
Total	1509	41792.433			

Table 5.5 Coefficients Model 1

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	6.528	0.597	10.942	0.000
CSR Score	0.024	0.008	2.855	0.004
FSIZE	-0.110	0.034	-3.210	0.001
FAGE	0.019	0.008	2.279	0.023
LEV	-3.977	0.247	-16.074	0.000
LIQ	0.047	0.020	2.307	0.021

5.3.2 Impact of CSR on FDR: Ohlson O-Score Model

The results in Tables 5.6, 5.7, and 5.8 (i.e., regression statistics, ANOVA, and coefficients) show the impact of CSR on FDR by using Ohlson O-Score as a dependent variable in the second regression model.

The R-Square (0.0954) suggests that the independent variables explain approximately 9.54% of the variation in the O-Score. The adjusted R-Square (0.0924) accounts for the number of predictors, confirming that the model remains a fair fit despite the modest explanatory power.

The F-statistic and the p-value in Table 5.7 indicate that the regression model is highly statistically significant, meaning the predictors collectively explain a substantial portion of financial distress risk.

5.3.2.1 Relationship between CSR and FDR: Ohlson O-Score Model

The results in Table 5.8 show a strong negative association between CSR and FDR at the 1 percent level. Since a higher Ohlson O-Score indicates a higher FDR, this result confirms that CSR is associated with a lower probability of financial distress. This result supports the study's hypothesis of a negative and significant relationship between CSR and FDR. It indicates that high CSR reduces the risk of financial distress in non-financial GCC-listed companies. This result is consistent with the results of Boubaker et al. (2020).

This finding aligns with stakeholder theory (Freeman, 1984), which emphasizes that firms investing in CSR build stronger relationships with stakeholders, thereby fostering trust and long-term support. Additionally, this

result aligns with signaling theory (Spence, 1973), where CSR practices act as signals of transparency and responsible management, thus enhancing the firm's credibility and reducing perceived risk among external parties.

5.3.2.2 Effect of Control Variables: Ohlson O-Score Model

The results in Table 5.8 show a strong negative association between firm size and FDR at the 1 percent level, which implies that larger firms are less likely to face financial distress. This aligns with expectations, as larger firms have more resources and financial stability.

The results in Table 5.8 show the insignificant relationship between firm age and FDR, indicating that firm age does not have a statistically significant impact on financial distress by using the Ohlson O-Score model.

Also, the results in Table 5.8 show a strong positive association between leverage and FDR at the 1 percent level, suggesting that firms with higher leverage are more likely to experience financial distress. Leverage remains a strong predictor of financial distress, showing that highly leveraged firms are at greater risk. This supports the expectation that excessive debt increases financial vulnerability.

The results in Table 5.8 show the insignificant relationship between liquidity and FDR, suggesting that liquidity does not significantly affect FDR by using the Ohlson O-Score model.

The above results reveal that CSR activities, firm size, and leverage are the most significant predictors of financial distress in the GCC region by using the Ohlson O-Score model.

Table 5.6 Regression Statistics Model 2

<i>Regression Statistics</i>	
Multiple R	0.309
R Square	0.095
Adjusted R Square	0.092
Standard Error	15.507
Observations	1510

Table 5.7 ANOVA Table Model 2

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	38129.208	7625.842	31.712	0.000
Residual	1504	361671.955	240.473		
Total	1509	399801.163			

Table 5.8 Coefficients Model 2

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	2.884	1.931	1.493	0.136
CSR Score	-0.086	0.027	-3.135	0.002
FSIZE	-0.555	0.111	-5.003	0.000
FAGE	-0.044	0.027	-1.638	0.102
LEV	8.023	0.801	10.019	0.000
LIQ	-0.073	0.066	-1.108	0.268

5.3.3 Impact of CSR on FDR: Zmijewski ZM-Score Model

The results in Tables 5.9, 5.10, and 5.11 (i.e., regression statistics, ANOVA, and coefficients) show the impact of CSR on FDR by using Zmijewski ZM-Score as a dependent variable in the third regression model.

The R-Square (0.9782) suggests that the independent variables explain 97.82% of the variation in the ZM-Score. The Adjusted R-Square (0.9781) remains close to the R-Square, confirming the model's robustness.

The F-statistic and the p-value in Table 5.10 show that the regression model is highly statistically significant, which implies that the independent variables collectively have a strong effect on the ZM-Score.

5.3.3.1 Relationship between CSR and FDR: Zmijewski ZM-Score Model

The results in Table 5.11 show a strong negative relationship between CSR and FDR at the 1 percent level. Since a higher Zmijewski ZM-Score indicates a higher FDR, this result confirms that CSR is associated with a lower probability of financial distress. This result supports the study's hypothesis of a negative and significant relationship between CSR and FDR. It indicates that high CSR reduces the risk of financial distress in non-financial GCC-listed companies. This result is consistent with the results of Boubaker et al. (2020).

The findings of this study support the stakeholder theory, that CSR involvement enhances organizational legitimacy and access to critical resources, which can mitigate financial vulnerabilities. The signaling effect of

CSR remains relevant here as well, with firms demonstrating proactive social and environmental responsibility likely to be perceived as less risky by investors and creditors.

5.3.3.2 Effect of Control Variables: Zmijewski ZM-Score Model

The results in Table 5.11 show a strong negative association between firm size and FDR at the 1 percent level, which implies that larger firms are less likely to experience financial distress. A similar result was found in the study by Khan et al. (2021), which implies that companies are less exposed to financial distress due to having a stronger monetary and political environment.

The results in Table 5.11 show the insignificant relationship between firm age and FDR, by using the Zmijewski ZM-Score model. A similar result was found in the study of Khan et al. (2021). Also, the results in Table 5.11 show a strong positive association between leverage and FDR at the 1 percent level, confirming that higher leverage increases the FDR. A similar result was found in the study by Khan et al. (2021).

The results in Table 5.11 show an insignificant relationship between liquidity and FDR, suggesting that liquidity does not significantly affect FDR by using the Zmijewski ZM-Score model. A similar result was found in the study by Khan et al. (2021).

The above results show that CSR activities, firm size, and leverage are the most significant predictors of financial distress in the GCC region by using the Zmijewski ZM-Score model.

Table 5.9 Regression Statistics Model 3

<i>Regression Statistics</i>	
Multiple R	0.989
R Square	0.978
Adjusted R Square	0.978
Standard Error	0.447
Observations	1510

Table 5.10 ANOVA Table Model 3

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	13494.076	2698.815	13499.800	0.000
Residual	1504	300.672	0.200		
Total	1509	13794.748			

Table 5.11 Coefficients Model 3

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.040	0.056	0.727	0.467
CSR Score	-0.003	0.001	-3.352	0.001
FSIZE	-0.015	0.003	-4.663	0.000
FAGE	0.001	0.001	1.081	0.280
LEV	5.894	0.023	255.263	0.000
LIQ	0.002	0.002	0.930	0.352

5.4 Summary of CSR Effects across All Models

A key point to consider is that a significant positive coefficient for the Altman Z variable indicates lower levels of financial distress, whereas significant negative coefficients for the Ohlson O and Zmijewski ZM variables result in the same conclusion.

In summary, the Ohlson O model and the Zmijewski ZM model have significant negative coefficients at the 1% significance level, whereas the Altman Z has a positive coefficient at the 1% significance level. The results are thus consistent with H1, implying that there is a significant inverse relationship between CSR activities and FDR in the non-financial GCC-listed companies. Thus, higher levels of CSR performance will result in lower levels of financial distress

The regression results demonstrating an inverse association between CSR and FDR are consistent with the research examined in a previous section, further supporting H1. Overall, the regression results suggest that enterprises that participate in CSR activities have a decreased probability of financial distress.

Overall, the results indicate that positive CSR engagement can reduce the likelihood of experiencing financial distress, which implies that stronger CSR performance improves creditworthiness and access to finance, resulting in a lower risk.

This result is consistent with stakeholder theory (Freeman, 1984), which emphasizes that addressing the needs and expectations of various stakeholders can enhance a firm's reputation, improve resource management, and contribute to financial resilience. Furthermore, the finding supports

signaling theory (Spence, 1973), suggesting that firms actively investing in CSR send positive signals to the market about their financial health, ethical behavior, and long-term strategic vision. These signals can reduce information asymmetry and strengthen investor confidence, ultimately lowering perceived risk. Thus, CSR serves not only a moral function but also acts as a strategic mechanism to reinforce financial stability.

5.5 Summary of Control Variables

In terms of control variables, the findings are statistically significant for virtually all variables in financial distress prediction models, indicating predicted outcomes. The leverage variable is significant at the 1% level in all three FDR models, with a negative coefficient for the Altman Z and a positive coefficient for the other two models. Thus, the riskiness of financial distress is positively related to a firm's degree of indebtedness.

The liquidity variable is statistically significant at the 1% level only in the Altman Z model with a positive coefficient, meaning that higher and better liquidity ratios lead to lower levels of financial distress.

The regression coefficient for firm size is statistically significant negative for Altman Z at the 5% level highly significant for Zmijewski ZM model at the 1% level and not significant for Ohlson O, confirming the notion that larger enterprises may exert greater financial and political influence than smaller firms, leading in a reduced chance of FDR.

The regression coefficient for firm age is statistically significantly positive for Altman Z at the 5% level, approaching negative significance for

Ohlson O at the 10% level, and not significant for Zmijewski ZM, confirming the notion that older enterprises may face lower FDR due to various fundamental advantages that evolve over time. First, they frequently have more expertise in navigating economic changes, which improves their ability to manage risks and make sound financial decisions (Laitinen & Laitinen, 2000). Their long-term presence in the market typically indicates that they have established a solid reputation and trust among stakeholders, making it simpler to obtain capital and reducing borrowing costs (Boubaker et al., 2020). In addition, older companies tend to have accumulated resources such as retained earnings, tangible assets, and diverse income streams, which serve as financial buffers during difficult times (Altman, 1968). Their established market position helps to more steady and predictable cash flows, lowering the risk of financial instability (Choi et al., 2021). Furthermore, because they have considerable historical financial data, firms have reduced information asymmetry, reducing their perceived risk in the eyes of creditors and investors (Fosu et al., 2016).

In summary, older and larger firms are less likely to face FDR. In contrast, leverage remains a significant predictor of FDR, indicating that highly leveraged firms face a greater risk, while firms with higher liquidity enjoy a lower risk. Overall, this study provides new empirical evidence on the role of CSR in enhancing firm resilience and adds to filling a critical gap in the CSR and FDR literature within the GCC context.

Chapter Six

Summary and Conclusions

The discussion of sustainable resource usage is a growing concern in the business context. Previous research shows that CSR engagement enhances stakeholder relationships and reduces FDR (Lin & Dong, 2018; Zheng et al., 2019). It demonstrates that a higher interest in CSR enhances creditworthiness (Sun & Cui, 2014), leading to better access to external financing (Boubaker et al., 2020). Also, CSR enhances the company environment, leading to more significant economic outcomes (Khan et al., 2021). This study contributes to the literature by examining whether CSR is effective in lowering the likelihood of FDR.

6.1 Conclusions

To examine the impact of CSR on FDR, I analyzed a sample of 1,510 observations representing 302 non-financial firms publicly listed in the Gulf Cooperation Council (GCC) stock exchanges from 2018 to 2022.

Using the Environmental, Social, and Governance (ESG) score from the Refinitiv database as a proxy for CSR performance and measuring FDR by using three models (i.e., Altman Z-Score, Ohlson O-Score, and Zmijewski ZM-Score), this study provides a comprehensive analysis of the financial consequences of CSR engagement.

The findings of this study provide new insights into the ongoing complex relationship between CSR and FDR within an emerging market

characterized by economic volatility, regulatory shifts, and a growing emphasis on sustainable business practices.

By employing multiple FDR models, including the Altman Z-Score, Ohlson O-Score, and Zmijewski ZM-Score, this study offers a comprehensive assessment of the relationship between CSR and FDR. The results from the Altman Z-Score reveal that CSR is significantly and directly associated with FDR. A high Z-Score indicates a lower FDR. This implies that firms with better CSR performance and higher Z-Scores are likely to face a lower risk of financial distress. Therefore, companies that engage in more substantial positive CSR activities are less likely to declare bankruptcy during severe financial distress and are more likely to recover swiftly in non-financial listed GCC companies.

Also, by using the other two models, I found a statistically significant and strong inverse relationship between CSR and FDR in non-financial listed GCC companies. Since a higher O-Score and ZM-Score indicate higher FDR, this result confirms that higher CSR scores are associated with a lower probability of FDR, supporting the study hypothesis, which stated a negative and significant relationship between CSR and FDR in non-financial listed GCC companies.

The use of these three distinct models (i.e., Altman Z-Score, Ohlson O-Score, and Zmijewski ZM-Score) in this study enhances the robustness of the analysis, allowing for a deeper understanding of how CSR engagement impacts the FDR across different measurement approaches.

Consistent with this, the findings of this study support the hypothesis of a negative and significant correlation with CSR, suggesting that high CSR

activities decrease the likelihood of financial distress. Additionally, it aligns with previous studies that show companies with strong CSR standards are viewed as more creditworthy and have better access to financing (Sun & Cui, 2014; Al-Hadi et al., 2017; Boubaker et al., 2020; Wu et al., 2020).

Furthermore, the findings of this study support the risk-mitigating interpretation of CSR, indicating that FDR decreases with CSR. Specifically, firms with higher ESG scores tend to exhibit a lower risk of financial distress, suggesting that CSR investments enhance financial resilience by improving stakeholder trust, operational efficiency, and market access. The findings support the notion that CSR can strengthen a firm's long-term financial position by reducing reputational risk, enhancing customer and investor confidence, and improving overall governance practices.

Overall, this outcome aligns with stakeholder theory, which suggests that meeting the stakeholders' expectations enhances a firm's legitimacy and long-term performance. It also supports signaling theory, which implies that strong CSR engagement signals stability and ethical standards to investors, reducing perceived risk.

The results of this study show that larger firms are less likely to face FDR, confirming the notion that larger enterprises may exert greater financial and political influence than smaller firms, leading to a reduced chance of FDR. Also, the results show that older enterprises may face lower FDR, confirming the notion that older enterprises may face lower FDR due to more expertise in navigating economic changes, which improves their ability to manage risks and make sound financial decisions. In addition, older companies tend to have accumulated resources that serve as financial buffers during difficult times. Also, the results show that leverage remains a significant predictor of FDR,

indicating that highly leveraged firms face a greater risk, while firms with higher liquidity enjoy a lower risk.

This study provides new empirical evidence on the role of CSR in enhancing firm resilience and adds to filling a critical gap in the CSR and FDR literature within the GCC context.

This study makes several significant contributions to the literature. First, it is the first to investigate the relationship between CSR and FDR in the context of non-financial firms listed in the GCC region. While prior research has explored this relationship in other parts of the world, no empirical study has yet examined it within the GCC region. This makes my research the first of its kind to address this gap in the literature. Second, it provides a comparative analysis of three widely used financial distress models (i.e., Z-Score, O-Score, and ZM-Score), allowing for a more robust assessment of CSR's impact on FDR. Third, it sheds light on whether CSR engagement can serve as a strategic risk-management tool or if it increases the firm's exposure to distress under certain conditions.

The findings of this study have significant strategic and policy implications. For corporate managers, understanding the financial consequences of CSR can inform resource allocation decisions, help strike a balance between social responsibility and financial performance, and adopt a strategic approach that maximizes social impact while safeguarding financial stability. This study demonstrates that, in addition to its societal benefit, socially responsible firms benefit economically because CSR enables them to reduce financial distress through, among other things, lower cost of capital, lower debt costs, and fewer financial constraints. For investors, CSR serves as a potential indicator of financial resilience and plays a crucial role in risk

assessment and portfolio management. Therefore, investors can benefit from understanding the relationship between CSR and FDR, as it can guide their investment decisions and portfolio management strategies. For policymakers, the study underscores the importance of regulatory frameworks in fostering sustainable business practices without imposing undue financial burdens on firms. Therefore, policymakers and regulators should continue to encourage enterprises to engage in socially responsible conduct as it reduces distress risk and defaults, thereby leading to a more favorable corporate investment environment, lower financial distress, and more stable economies.

6.2 Limitations of the Study

Every research study has limitations that are beyond the control of the researcher. The limitations of this study are the following: First, this study excludes all the financial sector firms as they are subject to different reporting and compliance requirements, which may limit the generalizability of the findings to other regions or financial institutions. The study depends on publicly available financial and CSR data, which may also have constraints in reporting.

Second, the study spans five years (2018–2022). Although this timeframe captures important recent economic dynamics, it may not fully reflect long-term trends in the relationship between CSR and FDR, especially considering that the effects of CSR activities often emerge over a longer horizon.

Third, the CSR data used in this study is obtained from LSEG Data & Analytics. While this is a credible and widely used source, it may involve

limitations such as varying disclosure standards across firms, subjective scoring methodologies, or lack of full alignment with firm-specific CSR strategies. These factors could introduce measurement bias or incomplete representation of CSR performance.

Fourth, the study relies on financial distress models (Z-Score, O-Score, and ZM-Score) as proxies for FDR, which, while commonly used, may not capture all aspects of financial instability, especially under different market conditions or across sectors.

These limitations are acknowledged, and future studies can build on and extend the existing findings.

6.3 Recommendations for Future Research

Future research may address these limitations by expanding the geographic and sectoral scope of the sample, employing longitudinal methods to explore long-term effects, and comparing multiple CSR data sources to enhance robustness or include other relevant mediating variables. In addition, qualitative insights from interviews or case studies could complement the quantitative findings and provide a deeper understanding of CSR implementation in the GCC context.

Future research could extend this analysis by exploring the long-term effects of CSR on financial distress across different industries and market conditions. Examining the role of specific CSR dimensions — environmental, social, and governance — in shaping financial outcomes could provide further insights into the mechanisms underlying the CSR–FDR relationship.

Additionally, comparative studies across different regional markets could enhance the generalizability of the findings and inform global CSR and financial stability strategies. This study seeks to clarify the role of CSR in enhancing or undermining financial resilience, contributing to a more nuanced understanding of corporate sustainability and financial health. Ultimately, this study contributes to a deeper understanding of the financial and strategic implications of CSR, offering valuable guidance for corporate decision-making and policy development in an evolving global economy.

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جامعة البحرين
كلية إدارة الأعمال
قسم المحاسبة

تأثير المسؤولية الاجتماعية للشركات على مخاطر الضائقة المالية: أدلة من أسواق الأسهم في دول مجلس التعاون الخليجي

أطروحة مقدمة كجزء من متطلبات الحصول على درجة الماجستير
في المحاسبة

إعداد

لولوة عصام علي الملا
٢٠١٥٧٠٢١

إشراف

دكتور عمر جهماني
أستاذ في قسم المحاسبة
جامعة البحرين
مملكة البحرين

أبريل ٢٠٢٥

المُلخَص

تهدف هذه الدراسة إلى الفحص التجريبي لتأثير المسؤولية الاجتماعية للشركات على مخاطر الضائقة المالية للشركة. تم استخدام ESG score كقياس للمسؤولية الاجتماعية للشركات، وتم استخدام ثلاث طرق لقياس مستويات مخاطر الضائقة المالية: Altman's Z-Score و O-Score و Ohlson's Zmijewski's ZM-Score. تضم عينة الدراسة ٣٠٢ شركة غير مالية مدرجة في بورصات دول مجلس التعاون الخليجي من عام ٢٠١٨ إلى عام ٢٠٢٢. بعد تحليل مجموعة بيانات مكونة من ١,٥١٠ ملاحظة، تشير النتائج باستخدام Altman Z-Score إلى وجود علاقة طردية ودالة إحصائية بين المسؤولية الاجتماعية للشركات ومخاطر الضائقة المالية. يشير ارتفاع قيمة Z-Score إلى انخفاض في مخاطر الضائقة المالية، وهذا يعني أن الشركات ذات الأداء الأفضل للمسؤولية الاجتماعية للشركات وذات قيم Z-Score الأعلى تكون أقل عرضة للتعرض للضائقة المالية. لذلك، تُظهر الشركات ذات الالتزام الأعلى بأنشطة المسؤولية الاجتماعية قابلية أقل للتعرض للإفلاس خلال فترات الضائقة المالية الحادة، إلى جاب قدرتها الأكبر على استعادة استقرارها المالي في وقت أقصر. وتظهر النتائج باستخدام O-Score Ohlson's و ZM-Score Zmijewski's وجود علاقة عكسية وذات دلالة إحصائية بين المسؤولية الاجتماعية للشركات و مخاطر الضائقة المالية. نظراً إلى أن ارتفاع كل من مؤشر O-Score ومؤشر ZM-Score يشير إلى مستوى أعلى من مخاطر الضائقة المالية، فإن هذه النتيجة تؤكد أن الدرجات الأعلى في المسؤولية الاجتماعية للشركات ترتبط باحتمالية أقل للتعرض لمخاطر الضائقة المالية، مما يدعم فرضية الدراسة التي تقترض وجود علاقة عكسية وذات دلالة إحصائية بين المسؤولية الاجتماعية ومخاطر الضائقة المالية في الشركات غير المالية المدرجة في دول مجلس التعاون الخليجي. تدعم النتائج وجهة نظر أصحاب المصلحة حول المسؤولية الاجتماعية للشركات، والتي تشير إلى أن تلبية توقعات أصحاب المصلحة يعزز شرعية الشركة وأدائها على المدى الطويل. كما أنه يدعم نظرية الإشارات، والتي تشير إلى أن المشاركة القوية في المسؤولية الاجتماعية للشركات تشير إلى الاستقرار للمستثمرين، مما يقلل من مخاطر الضائقة المالية. كما تشير نتائج الدراسة أن الشركات الأكبر من حيث العمر والحجم تظهر قابلية أقل للتعرض لمخاطر الضائقة المالية. تظل الرافعة المالية مؤشراً مهماً على مخاطر الضائقة المالية، مما يشير إلى أن الشركات ذات الاستدانة العالية تواجه مخاطر أكبر، بينما تتمتع الشركات ذات السيولة الأعلى بمخاطر أقل. بشكل عام تقدم هذه الدراسة أدلة تجريبية جديدة حول دور المسؤولية الاجتماعية في تعزيز مرونة الشركات وتسهم في سد فجوة مهمة في الأدبيات المتعلقة بتأثير المسؤولية الاجتماعية على مخاطر الضائقة المالية في سياق دول مجلس التعاون الخليجي.

الكلمات المفتاحية: المسؤولية الاجتماعية للشركات، مخاطر الضائقة المالية ، Altman's Z-Score ، O-Score Ohlson's ، Zmijewski's ZM-Score ، أسواق الأسهم بدول مجلس التعاون الخليجي.