

The Relationship between Corporate Social Responsibility, Firm Characteristics, and Financial Performance of Maritime Firms in Indonesia: A Path Analysis Approach

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The aim of this research is to explore the relationship between corporate social responsibility, sales growth, and firm size on capital structure, considering profitability as an intervening variable. This study analyses how corporate social responsibility, sales growth, and firm size influence the capital structure of maritime companies in Indonesia. The research is based on data from 88 Indonesian maritime firms collected over a four-year period. Path analysis is used to estimate the relationships between the variables of interest. The results indicate that sales growth and firm size have a significant impact on capital structure, while corporate social responsibility does not show a significant effect. These findings support the hypothesis that firm characteristics play an important role in enhancing the financial ratios of companies. The effect of corporate social responsibility and firm characteristics is mediated by profitability, which has been shown to intervene in the relationship between corporate social responsibility, sales growth, and firm size on capital structure. This study emphasises the importance of strengthening corporate social responsibility and firm characteristics simultaneously, so that capital structure can become an integral part of a company's sustainability strategy in addressing global environmental challenges.

KEY WORDS

- ~ Corporate social responsibility
- ~ Sales growth
- ~ Firm size
- ~ Capital structure
- ~ Profitability

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1. INTRODUCTION

In the era of globalisation and rapid technological advancements, the intensity of business competition has significantly increased, pushing companies to continuously improve their performance to maintain competitiveness (Agan et al., 2016). Maritime companies are not only required to compete with their competitors but also to make strategic decisions that can enhance sustainability and long-term value (Bouslah et al., 2023). One of the most crucial decisions faced by financial managers in this context is related to the company's capital structure (Arfan & Wahyuni, 2010). Capital structure refers to the proportion of debt and equity used to finance the company's assets (Susantika & Mahfud, 2019), and an optimal decision in this regard is crucial for achieving financial stability and strategic flexibility. According to Mahendra (2015), capital structure describes the ratio between debt and equity, which reflects the company's ability to meet its financial obligations using its own capital. A balanced capital structure can reduce the cost of capital and increase company value, while an improper structure may lead to financial pressure and a decline in investor confidence (Marlina et al., 2020). Therefore, financial managers need to be cautious and analytical when determining financing strategies, considering various internal and external factors that may affect the company's capital structure. These factors include company size, sales growth, profitability, leverage, liquidity, and business risk. Beyond these traditional determinants, recent developments in corporate finance literature (2021–2025) increasingly emphasise the integration of dynamic capital structure theory, ESG based financial frameworks, and sustainability-linked risk assessment in explaining leverage behaviour, particularly in capital intensive and environmentally exposed industries. This shift suggests that capital structure decisions can no longer be explained solely through static trade-off or pecking order considerations, but must also incorporate sustainability driven risk management and stakeholder signalling mechanisms. One increasingly important internal strategic element in modern business practices is Corporate Social Responsibility (CSR). CSR is a voluntary initiative by companies to integrate social and environmental concerns into their business operations and interactions with stakeholders (Margolis et al., 2008). More than just an ethical and legal obligation, CSR is often viewed as a strategic investment that can enhance the company's image, stakeholder trust, and market performance (Mensah et al., 2017; Öberseder et al., 2013). Empirical evidence shows that companies implementing good CSR programmes can build stronger relationships with communities, customers, and regulators, which ultimately positively impacts operational continuity and financial results (Orlitzky et al., 2011). However, in contemporary sustainability finance debates, CSR disclosure is increasingly interpreted as a proxy for broader ESG transparency, particularly in emerging markets where comprehensive ESG ratings remain limited. In this context, CSR reporting functions as an observable signal of environmental and social risk management quality, potentially influencing creditors' risk perception, cost of capital, and leverage decisions. From a signalling theory perspective, CSR disclosure reduces information asymmetry and communicates long term commitment to environmental and social risk management. In industries exposed to regulatory and environmental scrutiny, such as maritime logistics and port operations, such signalling may alter creditors' risk perception and influence financing structure indirectly through improved financial performance.

One case that highlights the importance of CSR is PT Pelabuhan Samudera Nusantara (PSN), a company operating in port services and maritime logistics. This company operates in coastal areas with sensitive marine ecosystems, so operational activities, such as loading and unloading, ship waste, and water pollution must be managed responsibly. The lack of proactive CSR programmes in this context can damage relationships with coastal communities, harm marine ecosystems, and create reputation and regulatory risks in the future (Esen, 2013). This case emphasises the need for CSR implementation as a tool for both social welfare and business sustainability. On the other hand, leading maritime companies in Indonesia, such as PT Pelabuhan Indonesia (Pelindo) and PT Pelayaran Nasional Indonesia (Pelni), have demonstrated how comprehensive CSR implementation can improve company performance and reputation. These cases illustrate that the maritime sector represents a natural laboratory for examining sustainability driven financing behaviour, given its high fixed-asset intensity, exposure to environmental regulation, and increasing ESG related scrutiny from global investors and lenders. CSR in this context is not merely philanthropic, but functions as a strategic risk mitigation instrument in asset intensive environments characterised by environmental exposure and regulatory monitoring. Consequently, CSR engagement may enhance profitability through improved operational efficiency, stakeholder trust, and reduced disruption risk, which in turn affects internal financing capacity. PT Pelindo, for example, implements various initiatives, such as coastal area revitalisation, training for fishing communities, and coral reef conservation. These efforts not only contribute to social development and the preservation of marine environments, but also strengthen relationships with surrounding communities and increase trust among port service users. Similarly, PT Pelni has carried out maritime education programmes and provided logistics support for underdeveloped areas, aiming to improve the welfare of coastal communities while supporting operational sustainability. These cases illustrate that CSR in maritime industries is not merely philanthropic, but functions as a strategic risk mitigation instrument in asset intensive environments, characterised by environmental exposure and regulatory monitoring. Consequently, CSR engagement may enhance profitability through improved operational efficiency, stakeholder trust, and reduced disruption risk, which in turn affects internal financing capacity. These examples show the potential relationship between CSR, public trust, and improved financial performance. When the community perceives tangible benefits from the company's activities, trust in the company increases, which in turn influences consumer behaviour and boosts demand for products (Garcia et al., 2021). The sales growth that occurs can then be used as an indicator of business growth. As

explained by Nurhayati (2019), sales growth reflects the company's ability to expand its market reach and increase revenue, making it a relevant variable in studies related to capital structure. However, rather than assuming a direct linear relationship between CSR, sales growth, or firm size and leverage, this study advances a mechanism based perspective in which profitability operates as a necessary economic transmission channel linking sustainability engagement and firm fundamentals to financing decisions.

Another important factor in capital structure decision-making is the size of the company. Large maritime companies tend to have easier access to financial markets because they are considered to have a lower risk of default and higher levels of transparency (Hussainey et al., 2011). Financial institutions and investors generally associate company size with financial health and operational efficiency, making them more willing to provide external funding under favourable terms (Dewi & Abundanti, 2019). Therefore, company size is often positively correlated with leverage levels, as larger companies are considered more capable of managing their debt obligations. In capital intensive maritime firms, firm size may also reflect risk absorption capacity, asset collateral strength, and resilience against freight market volatility. Thus, the size leverage relationship may not operate purely through scale effects, but through profitability stabilisation and enhanced creditor confidence, reinforcing the transmission mechanism argument.

This study focuses on three main variables: Corporate Social Responsibility (CSR), sales growth, and firm size in relation to capital structure decisions, with profitability serving as an intervening variable. Several previous studies have explored the relationships between these variables and capital structure, yet their findings remain inconclusive and often contradictory. For instance, Umam et al. (2016) found that firm size had a significant positive influence on capital structure, whereas Sari et al. (2019) reported no significant effect. A similar inconsistency is observed in studies on sales growth: Marlina et al. (2020) identified a significant positive relationship, while Sari et al. (2019) found otherwise. These studies form a critical foundation for the present research, highlighting the complexity of factors that influence capital structure decisions. Despite these contributions, prior research predominantly treats profitability as a control or outcome variable rather than as a structural transmission channel. Moreover, limited empirical attention has been given to maritime industries as a natural laboratory for examining sustainability-driven financing behaviour. This study adopts the maritime sector as its context, given its strategic role in international trade, inter-regional connectivity, and its high sensitivity to environmental and social issues. By selecting this sector, the study aims to offer a fresh perspective on the influence of CSR and firm characteristics on capital structure. The novelty of this research lies in the examination of profitability as an intervening variable, as well as its emphasis on the maritime industry as a relevant but underexplored context in existing literature. Unlike conventional capital structure studies, this research repositions profitability as a necessary economic transmission mechanism linking CSR engagement and firm fundamentals to leverage decisions in capital-intensive maritime firms. By embedding signalling theory, pecking order theory, and trade-off theory within an ESG oriented risk transparency framework, this study offers theoretical refinement rather than mere confirmatory testing.

Accordingly, this study is expected to contribute more profoundly towards the understanding of these relationships and offer practical implications for corporate financial management within the maritime sector. By integrating CSR into the capital structure analysis framework, this research aims to provide a more comprehensive understanding of how social responsibility and business performance interact in shaping corporate financing strategies. Specifically, this study will examine the effects of CSR, sales growth, and firm size on capital structure, with profitability as an intervening variable. This mechanism-based approach contributes to contemporary ESG finance discussions by demonstrating that sustainability initiatives influence leverage decisions only when they translate into measurable improvements in internal financial strength. Effective management of capital structure is critical to ensuring financial stability and the long-term success of companies. Factors such as CSR implementation, revenue expansion, and firm scale can significantly influence capital structure decisions, especially when moderated by profitability.

This study explicitly differentiates managerial, policy, and investor implications. For managers, the findings suggest that CSR initiatives affect financing decisions only when they generate tangible profitability gains. For policymakers, ESG related regulatory frameworks shape capital allocation incentives in environmentally exposed industries. For investors, sustainability performance should be interpreted in conjunction with financial fundamentals rather than as an isolated reputational metric. The article is structured to provide a clear and coherent research flow. Following the Introduction, which presents the background, objectives, novelty, and key implications, the Literature Review develops the theoretical foundations linking CSR, sales growth, firm size, profitability, and capital structure. The Methodology section outlines the research design and path analysis approach. The Results and Discussion interpret the empirical findings, particularly the mediating role of profitability in explaining financing behaviour. Finally, the Conclusion summarises the main contributions, acknowledges limitations, and offers recommendations for managers, investors, and policymakers, providing comprehensive insights into capital structure decisions within Indonesia's maritime sector.

2. LITERATURE REVIEW

2.1. Signal Theory

Signal theory explains the actions that management must take to provide clues to investors regarding the future prospects of the company (Abdullah, 2023). These signals serve as tools to attract investors' attention and encourage them to invest in the company (Miras et al., 2014). As a form of communication, these signals provide information that reflects the internal condition of the company and its long-term prospects. This definition aligns with Setiawanta et al. (2019), who stated that signals are information transmitted by the information owner (the company) to the information recipient (the investor), which can be used to assess and project the company's future performance. In contemporary corporate finance literature (2021–2025), signalling theory is increasingly linked with ESG transparency and sustainability disclosure, where firms use non-financial reporting as a mechanism to reduce information asymmetry and perceived risk in capital markets. Recent high impact studies emphasise that ESG disclosure functions as a credibility enhancing device that affects not only equity valuation but also debt contracting, cost of capital, and risk pricing mechanisms. This extension moves signalling theory beyond traditional earnings announcements towards sustainability-based credibility signalling.

Corporate Social Responsibility (CSR) plays a crucial role as a form of signal that a company can send to its investors. Through the effective implementation of CSR, a company not only demonstrates its commitment to societal and environmental well-being, but also enhances its reputation in the public eye (Alshammari, 2015). From a managerial perspective, CSR serves as a means of building strong relationships with external stakeholders, such as the community, customers, and regulators (Bai & Chang, 2015). By fostering a positive image through CSR, the company can show that it conducts business in a responsible manner and in line with societal expectations (Barauskaite & Streimikiene, 2021). From a mechanism-based perspective, CSR disclosure reduces uncertainty regarding environmental liabilities and regulatory exposure, particularly in asset-intensive industries, such as maritime logistics and port operations. Reduced uncertainty can enhance creditor confidence, lower perceived default risk, and indirectly influence capital structure decisions through improved profitability and internal funding capacity. This perspective aligns with dynamic capital structure theory, which argues that firms continuously adjust leverage in response to evolving risk perceptions and financing conditions, rather than maintaining static target ratios. The signal sent through CSR, in turn, influences public trust. Increased public trust in the company, as a result of good CSR implementation, will affect an increase in product sales (Ballou et al., 2017). This rise in sales will have a direct impact on the company's profit, which will ultimately attract investors' attention (Luo & Bhattacharya, 2006). Investors are more likely to be attracted to companies with a positive image and those that can demonstrate positive performance through transparent social and environmental disclosures (Hamad & Cek, 2023). The positive signals sent through CSR lead to increased investor interest in investing in the company (Crisóstomo et al., 2011). Companies that are proactive in disclosing relevant and consistent CSR activities can strengthen positive perception in the eyes of investors (Alshammari, 2015). In this context, CSR not only benefits in enhancing the company's image in the public eye, but also functions as a performance indicator that can guide investment decisions, potentially leading to more profitable outcomes for the company (Setiawanta et al., 2019). Through this disclosure, companies also seek to mitigate risks that may arise due to a mismatch between their operational activities and societal expectations (Devie et al., 2020). Cavaco & Crifo (2014) argue that companies can send positive signals to investors through the implementation of Corporate Social Responsibility (CSR). These signals not only build a positive image in the public eye, but also attract potential investors, which could lead to increased investment inflows into the company (Kabir & Chowdhury, 2023). Thus, CSR plays a strategic role in attracting investor interest and securing the company's long-term financial sustainability, not only directly altering leverage mechanically; rather, it operates through an economic transmission channel in which enhanced trust and operational stability strengthen profitability, which subsequently reshapes financing preference in line with pecking order behaviour. Accordingly, this study reframes signalling theory by embedding CSR within a sustainability, profitability, leverage transmission framework, rather than treating CSR as a purely direct determinant of capital structure.

2.2. Corporate Social Responsibility

Corporate Social Responsibility (CSR) in Indonesia is regulated by several laws, such as Law No. 25 of 2007 on Investment, Law No. 40 of 2007 on Limited Liability Companies, and regulations for State-Owned Enterprises (SOEs) (Hermawan & Gunardi, 2019). Although its implementation is limited, these regulations emphasise the importance of CSR in building harmonious relationships between companies and the community. Beyond its regulatory foundation, contemporary corporate finance literature increasingly positions CSR as part of Environmental, Social, and Governance (ESG) performance that affects firm risk perception, cost of capital, and long-term financial sustainability. Post-2021 research increasingly shifts from CSR disclosure alone towards ESG-integrated performance metrics that capture environmental risk exposure, governance quality, and stakeholder management capacity. In emerging markets such as Indonesia, where standardised ESG scores remain limited, CSR disclosure frequently functions as a practical proxy for sustainability transparency and reputational signalling. However, this study explicitly acknowledges that CSR disclosure does not fully capture the

governance dimension of ESG. Therefore, CSR is treated as a proxy for environmental and social risk disclosure in the maritime sector, and this limitation is recognised in the methodological discussion. CSR can be understood in two senses: broad and narrow. In the broad sense, CSR relates to achieving economic sustainability, which involves accountability to the global community (Han & Yu, 2016). In the narrow sense, CSR focuses more on a company's commitment to sustainable development to improve quality of life and create an environment that benefits all stakeholders (Loussaief et al., 2014). From a capital structure perspective, the broad dimension of CSR contributes towards long-term economic resilience by reducing environmental and social risk exposure, while the narrow dimension strengthens stakeholder trust and operational stability. Both dimensions may indirectly influence financing preferences through their impact on profitability and perceived default risk. In capital-intensive industries, such as maritime transportation, environmental compliance costs, port regulation, and carbon related scrutiny make sustainability disclosure economically material rather than merely reputational.

Several definitions of CSR point towards a concept of cooperation between the company and its stakeholders to maintain the company's sustainability (Vladimir, 1967). In the legislation, CSR is also described as a responsibility to create a balanced relationship that aligns with the social, cultural, and local norms (Hartono, 2009). CSR plays an essential role in the continuity of the company and the progress of the surrounding community. The main objective of CSR is to create value for society, raise environmental awareness, and improve employee welfare. In its implementation, CSR emphasises three core principles:

1. Accountability: The company's responsibility for its decisions and policies to build public trust.
2. Transparency: The openness of company information to consumers and employees to strengthen communication and relationships.
3. Sustainability: Reducing the negative impact of the company's operations on the environment and society, while also enhancing performance and profitability.

In asset intensive sectors, such as maritime transportation and port services, these principles are economically relevant because operational activities are closely associated with environmental externalities, regulatory monitoring, and long-term infrastructure investment. Consequently, CSR disclosure may function as a mechanism to reduce information asymmetry between firms and capital providers.

The benefits of implementing effective CSR include: innovation in the development of environmentally friendly new products that satisfy consumers, reducing energy waste and packaging for cost efficiency, offering more environmentally friendly and competitive products, building closer and more positive relationships with consumers, improving employee morale and engagement within the company, as well as reducing the risk of losses through more thoughtful planning (Coelho et al., 2023). However, these benefits become financially meaningful only when translated into improved profitability. Therefore, CSR is not assumed to directly alter leverage mechanically; rather, it operates through an economic transmission channel in which enhanced reputation, operational efficiency, and stakeholder trust strengthen profitability, subsequently influencing financing decisions.

2.3. Company Characteristics

2.3.1. Sales Growth

Company growth is regarded as one of the key indicators for assessing the progress of a business entity. A company is considered to be growing if there is a sustained increase in its core operational activities (Amini & Bianco, 2017). Among various performance indicators, sales play a very significant role. An increase in sales generally leads to a direct improvement in profits, which ultimately has a positive impact on the overall financial performance of the company (Aupperle et al., 1985). According to Engel (2014), sales growth is the result of comparing the difference between the current year's sales and the previous year's sales. This definition emphasises the importance of comparing different periods to assess growth trends. Marlina et al. (2020) further added that the growth rate can be seen from increases in both volume and price, especially in sales activities. This is because sales are the primary activity conducted by companies to achieve their main objective, which is to obtain the expected level of profit. Meanwhile, Mishra & Suar (2010) emphasise that companies with relatively stable sales have a greater capacity to obtain loans and bear higher fixed costs compared to companies with unstable sales. Sales growth is an important indicator in assessing the success and performance of a company. An increase in sales from period to period reflects the operational success of the company and shows its ability to meet market demand and sustain a competitive advantage over time (Nurhayati, 2019). Within dynamic capital structure theory, sales growth represents expansion opportunities that may increase financing needs. Nevertheless, whether such growth results in higher leverage depends on the firm's ability to convert revenue expansion into sustainable profitability. Therefore, sales growth is conceptualised in this study not merely as a direct determinant of leverage, but as a conditional driver whose impact is mediated through profitability performance. Recent literature suggests that growth opportunities increase external financing

demand only when internal cash flow is insufficient. Thus, sales growth affects leverage through two competing channels: (1) increased capital demand and (2) improved retained earnings capacity. This dual mechanism justifies the inclusion of profitability as a transmission variable, rather than assuming a direct monotonic effect.

2.3.2. Firm Size

Firm size is an important indicator in assessing the operational and financial capacity of a business entity. Larger companies tend to have broader access to resources, funding capabilities, and the potential for higher profits. In empirical studies, company size is often used as a control variable representing the scale of operations (Arfan & Wahyuni, 2010). Laskar & Maji (2016) define company size based on nominal indicators such as total assets, total sales, and market capitalisation. Torang (in Himawan & Andayani, 2020) states that company size reflects the demand for the services or products produced by the organisation. Meanwhile, Oeyono et al. (2011) use average net sales as the main proxy for company size. Arfan and Wahyuni (2010) add that size can be determined through income, assets, and equity, all of which reflect the financial strength of the company. In capital structure literature, larger firms are generally associated with lower bankruptcy risk and better access to capital markets, consistent with trade-off theory. However, in industries characterised by high asset specificity and freight volatility, such as maritime sectors, firm size also reflects risk absorption capacity and operational resilience. From a dynamic adjustment perspective, large firms may deviate less from target leverage due to stable earnings streams, whereas smaller firms may exhibit greater leverage volatility. Thus, firm size influences not only leverage level but also leverage stability. Legally, company classification in Indonesia is regulated under Law No. 9 of 1995 and Law No. 20 of 2008, which categorise businesses into micro, small, medium, and large enterprises. This classification is primarily based on net assets and annual sales turnover. Micro and small enterprises are typically independent entities that are not affiliated with large corporations, whereas medium and large enterprises operate on broader economies of scale, including both national and foreign companies conducting business in Indonesia (Umam et al., 2016). From a financial perspective, consistent with dynamic pecking order theory, larger firms with more stable profitability tend to rely more on retained earnings before resorting to external debt financing. Their stronger internal financial capacity and earnings stability reduce dependence on leverage. Accordingly, firm size is expected to influence capital structure both directly and indirectly through its role in stabilising profitability and enhancing internal financing capability.

2.3.3. Profitability

Profitability is a key indicator in assessing a company's financial performance, showing the extent to which the company can generate profit from its operational activities (Pramana & Darmayanti, 2020). Profitability not only reflects the efficiency of asset and capital usage, but also serves as a measure of management's success in managing the company's resources (Sun & Yu, 2015). Various ratios are used to measure profitability, including Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). ROA reflects the company's ability to convert assets into profit. ROE measures the rate of return for shareholders on the invested capital. Meanwhile, NPM indicates operational efficiency through the percentage of net profit relative to revenue (Sya'dah & Huda, 2020). Empirically, profitability is often used in research as both an independent and mediating variable, due to its ability to reflect competitiveness and business sustainability. High levels of profitability are also believed to encourage companies to engage in more extensive disclosures, including in the areas of social and environmental responsibility. In capital structure theory, profitability occupies a central explanatory role. According to pecking order theory, firms prioritise internally generated funds before seeking external debt. Contemporary ESG finance literature further suggests that profitability stabilises financing decisions under sustainability related uncertainty. Accordingly, this study positions profitability not merely as an intervening statistical variable, but as a structural transmission mechanism linking CSR, sales growth, and firm size to leverage decisions.

2.4. Previous Research

Several previous studies have examined the relationship between profitability and a company's capital structure. Findings in the literature are mixed, reflecting that the profitability capital structure relationship is context dependent and mediated by various firm characteristics. For example, Pramana and Darmayanti (2020) found that profitability has a significant negative effect on the capital structure of automotive companies. This study suggests that companies with higher profitability tend to rely more on internal funding than external funding, consistent with the pecking order theory and signal theory, which states that companies prefer debt only when they lack internal capital. In addition, Umam et al. (2016) discovered that profitability functions as an intervening variable that mediates the relationship between company size, liquidity, and capital structure. They showed that companies with higher profitability tend to have a more optimal capital structure, minimising dependence on external debt. However, other studies have yielded mixed results. Research by Pradnyani & Purbawangsa (2017) revealed that profitability has a positive effect on capital structure, where companies with higher profits are more likely to increase the use of debt in their capital structure. On the contrary, a study by Sari et al. (2019) showed that sales growth and business risk did not significantly influence the capital structure, even when profitability

was high, suggesting the presence of other factors influencing capital structure decisions. Several studies also highlight the influence of other variables, such as company size and CSR, on profitability and capital structure. Pradnyani et al. (2017) indicated that companies with higher profitability often have a more balanced capital structure, driven by wise managerial decisions in managing the company's finances. The inconsistent findings across prior studies indicate that the profitability capital structure relationship is not universally deterministic, but contingent upon contextual and structural conditions, such as industry capital intensity, risk exposure, growth dynamics, and sustainability engagement. In asset-intensive sectors like the maritime industry, financing decisions are strongly influenced by long-term infrastructure investment, environmental regulation, and operational risk. These characteristics may alter the traditional predictions of pecking order and trade-off theories. Moreover, previous studies largely position profitability either as a direct explanatory variable or as a simple mediator, without sufficiently clarifying the economic transmission mechanism linking firm characteristics and CSR engagement to leverage decisions. The absence of a mechanism-based explanation contributes to the contradictory empirical findings documented in the literature.

Although several studies have examined the relationship between profitability and capital structure, recent high-impact research (2021–2025) provides additional insights into how ESG, dynamic capital structure, and behavioural finance perspectives influence leverage decisions.

No	Author & Year	Main Variables	Method	Key Findings	Relevance to Current Study
1	Pramana & Darmayanti (2020)	Profitability, Capital Structure	Panel regression	Profitability has a significant negative effect on capital structure; firms rely more on internal financing	Supports pecking order and signalling theory; relevant for leverage behaviour in asset-intensive firms
2	Umam et al. (2016)	Firm Size, Liquidity, Profitability, Capital Structure	Mediation analysis	Profitability mediates the effect of firm size and liquidity on capital structure	Provides foundation for profitability as a mediator, supporting current framework
3	Pradnyani & Purbawangsa (2017)	Profitability, CSR, Capital Structure	Linear regression	Profitability positively affects capital structure; CSR contributes to a balanced capital structure	Highlights CSR and profitability as determinants of leverage
4	Sari et al. (2019)	Sales Growth, Business Risk, Capital Structure	Regression analysis	Sales growth and business risk do not significantly affect capital structure	Suggests contextual factors influence financing decisions across industries
5	Li et al. (2021)	ESG, Capital Structure	Panel data & fixed effects	ESG performance reduces cost of capital and supports optimal debt usage	Emphasises ESG integration in modern financing decisions
6	Khan et al. (2022)	CSR/ESG Disclosure, Profitability, Capital Structure	Mediation analysis	Profitability mediates the effect of CSR/ESG disclosure on capital structure	Supports profitability mediation in ESG context
7	Gómez et al. (2022)	Sales Growth, Profitability, Capital Structure	Path analysis	Sales growth influences leverage mainly through profitability	Strengthens mechanism-based mediation approach for operational variables
8	Zhang & Huang (2023)	ESG Score, Capital Structure	Panel regression	ESG scores lower financing costs and support trade-off decisions	Provides modern ESG context for capital-intensive industries
9	Oliveira et al. (2023)	Firm Size, Profitability, Capital Structure	Mediation regression	Firm size affects leverage indirectly through profitability in asset-intensive maritime and logistics firms	Relevant for maritime industry context
10	Nguyen et al. (2024)	CSR/ESG, Profitability, Capital Structure	Mediation analysis & robustness checks	CSR/ESG affects leverage only when profitability is sufficient and financial constraints are low	Supports contextual interaction of variables
11	Patel & Sharma (2025)	ESG Disclosure, Risk, Capital Structure	Panel analysis	High ESG disclosure supports risk management and longer debt maturity	Provides empirical evidence for ESG integration and financial risk management

Table 1. Comparative Synthesis of Studies on Profitability and Capital Structure (Source : Data analysis results, 2025)

Collectively, these studies emphasise the critical role of ESG, sales growth, and firm size, in conjunction with profitability, as determinants of capital structure, particularly in emerging-market and asset intensive contexts. They also highlight gaps in prior literature, such as the lack of mechanism-based explanation linking CSR and firm characteristics to financing decisions. Therefore, this study refines prior literature by conceptualising profitability as a structural transmission channel through which CSR, sales growth, and firm size influence capital structure decisions. By integrating signalling theory,

pecking order theory, trade-off theory, and insights from recent ESG and behavioural finance research within a unified framework and applying it to the Indonesian maritime sector, this research aims to provide a stronger theoretical contribution and context-specific explanation of corporate financing behaviour. Accordingly, this study addresses the gap by examining the effect of company characteristics on capital structure, with profitability as an intervening variable.

2.5. Hypothesis

A hypothesis is a provisional answer to a research problem, formulated based on theoretical foundations (Harahap, 2011). The theoretical framework that underlies this hypothesis is illustrated in Figure 1. Unlike prior studies that test direct associations only, this study develops hypotheses based on an integrated mechanism framework in which firm characteristics and CSR influence leverage both directly and indirectly through profitability. This refinement responds to the need for stronger theoretical grounding and clearer causal pathways, as highlighted in recent capital structure literature.

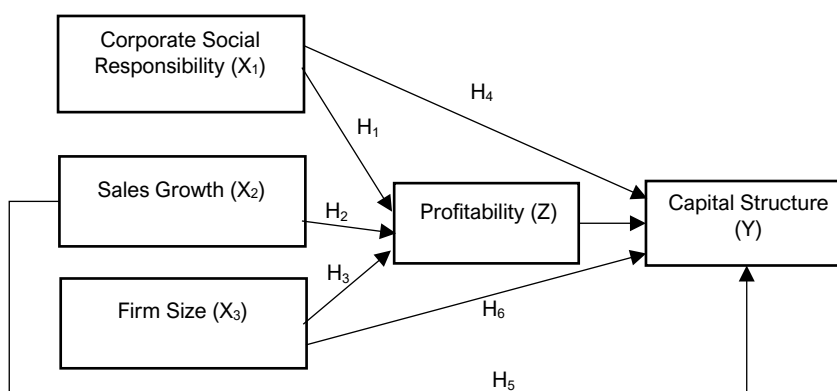


Figure 1. Theoretical Framework

2.5.1. Hypothesis Development

1. Corporate Social Responsibility (CSR) and Capital Structure

Capital structure refers to the balance of funding through debt and equity. A company with a high level of leverage increases the attention of debtholders in overseeing its activities. Leverage is inversely related to a company's CSR programme because the company aims to avoid attracting undue scrutiny from debtholders, in line with the signalling theory (El et al., 2020). However, contemporary ESG based finance literature suggests that sustainability disclosure functions not merely as symbolic signalling, but as a mechanism for reducing information asymmetry and perceived environmental risk. In capital-intensive and environmentally sensitive industries, such as maritime transportation, environmental exposure, regulatory monitoring, and long-term asset commitments increase creditor sensitivity to non-financial risk indicators. Signalling theory posits that individuals act in their own interest, while CSR is undertaken for the benefit of the collective. However, CSR initiatives within a company significantly influence the increase in public trust towards the company. Recent studies also highlight the role of CSR in shaping perceptions among employees and customers, which in turn can affect firm performance and financial decisions. For instance, Tehci & Senbursa (2023) found that CSR and corporate image positively influence customer word-of-mouth in maritime businesses, while Senbursa & Tehci (2024) demonstrated that CSR engagement improves employee satisfaction and promotes e-WOM. Similarly, Senbursa & Tehci (2023) emphasised that employees perceive corporate responsibility as integral to organisational legitimacy, which can indirectly support financial stability and leverage decisions. From a dynamic capital structure perspective, CSR (as a proxy for ESG engagement in emerging markets) may influence leverage through two competing economic channels: (1) a risk-reduction channel that lowers cost of capital and increases debt capacity, and (2) an internal-financing channel in which improved stakeholder trust enhances profitability and reduces reliance on external debt. Thus, CSR is expected to have a significant association with capital structure decisions. Rather than assuming a purely direct effect, this study conceptualises CSR as part of a sustainability-financial transmission framework in which its impact on leverage depends on how it reshapes firm risk perception and internal financial strength. Based on the above explanation, the following hypothesis can be formulated:

H₁ - Corporate social responsibility (CSR), as a proxy for sustainability engagement, is significantly associated with capital structure decisions in the Indonesian maritime industry through risk and information asymmetry channels.

2. Sales Growth and Capital Structure

The trade-off theory explains that larger companies have an advantage in reducing transaction costs associated with issuing long-term debt. This is due to the larger capacity of big companies to access debt financing compared to smaller

companies (Umam et al., 2016). Additionally, larger companies generally possess higher total assets, which can be used as collateral to secure debt. The greater the amount of assets a company holds, the more likely it is to obtain loans, as lenders feel more confident in the available collateral. If a company fails to meet its debt obligations, the assets can be used as compensation (Kuo & Chen, 2021). Within dynamic capital structure theory, sales growth reflects expansion opportunities that increase financing needs. However, growth does not automatically translate into higher leverage. The direction of capital structure adjustment depends on whether revenue expansion generates sustainable profitability and internal cash flow. In the maritime sector, characterised by freight rate volatility, high fixed assets, and cyclical demand, revenue growth may increase both financing demand and operational risk. Therefore, lenders' responses to growth signals are conditional upon earnings quality and risk absorption capacity. Thus, significant sales growth can encourage increased debt usage. Nevertheless, this relationship operates through an economic mechanism: when sales growth improves retained earnings, firms may rely less on external financing; conversely, when growth outpaces profit generation, external debt may increase. Based on this explanation, the hypothesis that can be proposed in this study is as follows:

H₂ - Sales growth is significantly associated with capital structure decisions, with the direction of the relationship depending on the firm's profitability and internal financing capacity in the Indonesian maritime industry.

3. Firm Size and Capital Structure

Firm size reflects the scale of a business entity, which can be measured using indicators such as total sales, total assets, as well as average sales and average total assets. Firms with higher sales and asset levels tend to be classified as larger entities, which in turn increases their opportunities to obtain external financing sources. Larger firms generally have a greater capacity to access loans compared to smaller firms (Voinea et al., 2019). This enables large firms to rely more heavily on leverage, given their greater ability to meet debt obligations. Therefore, it can be concluded that firm size has a significant impact on capital structure, with larger firms tending to use a higher proportion of debt to finance their operations and expansion. Under trade-off theory, larger firms face lower bankruptcy risk and benefit from greater debt capacity. However, under pecking order reasoning, large firms with stable profitability may rely more on retained earnings. Therefore, firm size is expected to influence capital structure, but the magnitude and direction may depend on profitability conditions. However, pecking order theory suggests that large firms with stable profitability may prefer internal financing before resorting to debt. Therefore, firm size affects capital structure through two competing channels: enhanced debt capacity and strengthened internal funding ability. In asset-intensive maritime operations, firm size also reflects risk absorption capacity, infrastructure scale, and regulatory visibility, which may alter creditor confidence and cost of capital. Therefore, firm size is expected to influence capital structure. This study positions firm size not merely as a scale variable, but as a structural determinant shaping financing flexibility and profitability stability within a high capital intensity environment. Based on this reasoning, the proposed hypothesis is:

H₃ - Firm size is significantly associated with capital structure decisions, reflecting both debt capacity and internal financing effects in the Indonesian maritime industry.

4. Corporate Social Responsibility and Capital Structure Mediated by Profitability

Effective implementation of Corporate Social Responsibility (CSR) can enhance a company's reputation and public trust, which in turn can increase customer loyalty and attract investors. These positive outcomes may drive higher revenues and profits. Improved profitability provides the company with greater flexibility in choosing financing sources, particularly by minimising reliance on external funding such as debt (Abu & Ameer, 2011). According to signalling theory, companies with high profitability tend to use internal funds to meet capital needs, thus indirectly influencing capital structure. Therefore, profitability may serve as a mediating variable in the relationship between CSR and capital structure. This study refines prior literature by arguing that profitability functions as a necessary economic transmission mechanism rather than a simple statistical mediator. CSR-driven improvements in operational efficiency, stakeholder loyalty, regulatory compliance, and risk mitigation enhance profitability, which subsequently shapes financing preferences. According to pecking order theory, companies with higher profitability tend to rely on internal funds. In capital intensive maritime firms, profitability is particularly critical because internal earnings determine whether large infrastructure investments are financed internally or through debt markets. Thus, CSR influences leverage indirectly by first strengthening earnings performance. Based on this explanation, the hypothesis proposed is:

H₄ - Corporate social responsibility (CSR) influences capital structure indirectly through profitability as a structural transmission mechanism in the Indonesian maritime industry.

5. Sales Growth and Capital Structure Mediated by Profitability

The inclusion of profitability as a mediating variable provides a more nuanced understanding of the relationship between sales growth and capital structure. According to Sya'dah and Huda (2020), sales growth reflects projections of future sales volume based on historical growth trends. A company is considered to have strong performance if its sales volume consistently increases year over year. When sales growth outpaces the increase in operating costs, it contributes to higher company profits. However, such growth may also increase the company's need for financing to support operational activities. According to signalling theory, companies may seek external sources of financing, such as debt, to meet these funding needs. In this context, profitability plays a crucial role in bridging the relationship between sales growth and capital structure (Aggarwal & Jha, 2019). Sales growth accompanied by profit increases can enhance lenders' confidence in a company's ability to fulfil its financial obligations, thereby influencing the capital structure. Profitability plays a bridging role by determining whether growth is financed internally or externally. If sales growth translates into higher retained earnings, firms may reduce reliance on debt; conversely, if growth outpaces profit generation, external financing may increase. Thus, profitability clarifies the conditional pathway between sales growth and leverage within a dynamic capital structure framework. Based on this reasoning, the hypothesis proposed is:

H₅ - sales growth affects capital structure indirectly through profitability, which determines whether expansion is financed internally or externally in the Indonesian maritime industry.

6. Firm Size and Capital Structure Mediated by Profitability

Firm size reflects a company's capacity to produce goods and deliver services to customers, and it serves as an important indicator of the company's profitability level (Gati et al., 2019). According to the concept of economies of scale, increasing the scale of production allows firms to reduce the per-unit cost of production. When companies can produce goods more efficiently, profit margins tend to rise, thereby improving return on assets (ROA). This increase in profitability, resulting from larger operational scale, influences the firm's decisions regarding capital structure (Khasharmeh & Desoky, 2013). More profitable companies are generally better positioned to finance their capital needs internally, reducing reliance on external financing such as debt. The increase in profitability resulting from scale efficiency influences financing behaviour. More profitable large firms are better positioned to finance investments internally, reducing leverage reliance. Therefore, profitability functions as a structural pathway linking firm size and capital structure. Based on this explanation, the following hypothesis is proposed:

H₆ - Firm size influences capital structure indirectly through profitability, which enhances internal financing capacity in the Indonesian maritime industry.

3. RESEARCH METHODOLOGY

3.1. Sample and Data Collection

This research uses secondary data collected from the financial reports of companies listed in Indonesia during the period 2021 to 2024. The maritime sector is deliberately selected as a natural laboratory because it is characterised by high fixed assets, substantial capital intensity, exposure to environmental risk, freight rate volatility, and increasing ESG related scrutiny. These structural characteristics make financing decisions in this sector particularly sensitive to profitability, sustainability disclosure, and operational fundamentals. The sampling technique employed in this study is purposive sampling, based on the following criteria:

- 1) Maritime companies listed on the Indonesia Stock Exchange (IDX) continuously from 2021 to 2024.
- 2) Maritime companies that publish annual financial reports in Indonesian Rupiah (IDR).
- 3) Maritime companies that have complete data required for this study.
- 4) Maritime companies that did not incur losses during the 2021–2024 period.

Companies experiencing persistent losses were excluded to avoid distorted leverage behaviour driven by financial distress conditions, which may bias capital structure interpretation under trade-off and pecking order frameworks. Based on the purposive sampling method described above, the total sample used in this study amounts to 88 firm year observations. The study employs panel data covering the 2021–2024 period to capture post-pandemic adjustment dynamics and increasing sustainability-related disclosure practices in Indonesian capital markets. All data has been analysed using multiple linear regression, path analysis, and partial testing methods. The detailed process of the purposive sampling method is as follows:

No	Criteria	Number of Companies
Population of Maritime Companies Listed on the Indonesia Stock Exchange for the Period 2021-2024		708
1	Maritime companies listed consecutively on the Indonesia Stock Exchange from 2021 to 2024.	(128)
2	Maritime companies that publish annual financial statements in Indonesian Rupiah.	(108)
3	Maritime companies that have complete data required for this study.	(236)
4	Maritime companies that did not experience losses during the 2021-2024 period.	(148)
Amount of data analysed		88

Table 2. Sample Selection Criteria Procedure (Source : Data analysis results, 2025)

3.2. Variable

The operational variables in this study consist of independent, dependent, and mediating variables. The independent variables include: first, Corporate Social Responsibility (CSR), which has the potential to enhance profitability through improved reputation and public trust, subsequently influencing the firm's capital structure. In line with post 2021 ESG based corporate finance literature, CSR disclosure in this study is positioned as a proxy for Environmental and Social transparency in emerging markets, where standardised ESG scores remain limited. Rather than treating CSR as a purely symbolic disclosure, this study conceptualises CSR as a risk reduction and information-transparency mechanism that may influence financing decisions through its impact on profitability and perceived default risk. As a non-financial indicator, CSR data inherently possess distinct characteristics and are susceptible to noise and measurement challenges. Therefore, this study provides a detailed explanation of the CSR data collection methods in the methodology section, including data sources such as company annual reports, sustainability reports, and official data from relevant institutions. To minimise noise and ensure data validity, data validation has been conducted through source triangulation and consistency checks across reporting periods. Additionally, CSR disclosure items have been coded using a structured checklist approach to ensure comparability across firms and years. While a comprehensive ESG composite index would offer broader coverage of governance and environmental risk dimensions, data availability constraints limit measurement to CSR disclosure indicators. This limitation is acknowledged as a boundary condition of the study. Second, sales growth is expected to drive increases in company profits, thereby strengthening internal financing capacity and impacting capital structure through profitability. Within a dynamic capital structure framework, sales growth captures expansion opportunities and financing demands pressures. However, its influence on leverage is conditional upon whether revenue expansion generates sustainable earnings and retained cash flow. Therefore, sales growth is not treated merely as a growth indicator, but as a driver of financing dynamics mediated by profitability performance. Third, firm size reflects economies of scale, which can improve profitability and indirectly affect capital structure. In capital intensive maritime operations, firm size also reflects asset specificity, operational resilience, and risk absorption capacity. Larger firms may benefit from lower bankruptcy risk and greater debt capacity (trade-off theory), yet simultaneously possess stronger internal financing ability (pecking order theory). Thus, firm size is conceptualised as a structural determinant affecting both debt capacity and profitability stability.

The dependent variable in this study is capital structure, measured using the Debt to Equity Ratio (DER), which is the ratio of total debt to equity owned by maritime companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2024. DER is selected as the primary leverage proxy because it directly reflects the relative reliance on creditor versus shareholder financing. To enhance robustness, alternative leverage specifications (e.g., total debt to total assets) are tested to ensure consistency of results. The mediating variable is profitability, operationalised using financial ratios such as Return on Assets (ROA). Profitability represents a firm's efficiency in generating earnings from total assets and is a key factor in capital structure decision-making. Companies with high profitability tend to rely more on retained earnings as a source of financing, reducing dependence on debt. Importantly, this study conceptualises profitability not merely as a statistical mediator but as a structural transmission mechanism linking sustainability engagement and firm fundamentals to leverage decisions. In capital-intensive industries such as maritime transportation, internally generated earnings determine whether long-term investments are financed through retained earnings or external debt markets. Thereby, profitability functions as the economic channel through which CSR, sales growth, and firm size reshape financing preferences. Path analysis has been employed to test the relationships between the independent variables (CSR, sales growth, and firm size) and the dependent variable (capital structure), while controlling for the mediating effect of profitability. To strengthen causal interpretation and reduce potential endogeneity bias, the empirical specification incorporates lagged independent variables and firm and year fixed effects within a panel data framework. Bootstrapping procedures are applied to test the statistical significance of indirect (mediated) effects.

The findings are expected to provide a comprehensive understanding of how CSR, sales growth, and firm size influence the capital structure of Indonesian firms, particularly through profitability as an intervening variable. By emphasising profitability as a necessary transmission mechanism rather than a simple intervening variable, this study advances the literature by integrating signalling theory, pecking order theory, and trade-off theory within a unified sustainability finance framework. By emphasising profitability's role, this study elucidates the internal mechanisms linking social responsibility, operational performance, and firm scale to financing decisions made by management. This mechanism-based approach strengthens the study's theoretical positioning beyond a purely confirmatory sectoral analysis and aligns it with contemporary debates on ESG, risk channels, and capital structure dynamics in emerging markets.

In this context, it is important to highlight that capital structure is a strategic component of corporate financial management, strongly influenced by operational efficiency and corporate reputation among stakeholders. In capital intensive and environmentally sensitive industries such as the maritime sector, capital structure decisions are additionally shaped by asset specificity, long term infrastructure commitments, exposure to environmental regulation, and increasing ESG related scrutiny from global investors and creditors. This industrial setting provides a relevant context for examining how sustainability engagement and firm fundamentals interact in determining leverage choices. CSR, as a company's commitment to social and environmental responsibilities, not only impacts external legitimacy but also contributes to enhanced profitability through improved reputation and investor confidence. From a mechanism-based perspective, CSR reduces information asymmetry, mitigates perceived environmental and regulatory risk, and strengthens stakeholder trust. These effects enhance operational stability and earnings capacity, which subsequently influence financing preferences consistent with pecking order behaviour. Likewise, sales growth serves as a crucial indicator of marketing and operational performance, which, if efficiently managed, leads to increased earnings that ultimately affect capital structure. However, consistent with dynamic capital structure theory, revenue expansion does not automatically translate into higher leverage. The direction of financing adjustment depends on whether growth generates sustainable internal cash flows or increases external financing needs. Therefore, profitability functions as the conditioning variable that determines whether growth strengthens internal financing capacity or intensifies reliance on debt. Firm size also plays a key role, as larger scale operations enable cost efficiencies and higher profit margins, further strengthening the company's financial position. At the same time, larger firms benefit from lower perceived bankruptcy risk and stronger bargaining power in credit markets (trade-off theory), while simultaneously possessing greater retained earnings capacity (pecking order theory). This dual theoretical perspective underscores the need to analyse profitability as the structural transmission mechanism linking firm size to leverage decisions.

This research makes a significant contribution by demonstrating the mediating role of profitability in explaining the relationships between CSR, sales growth, firm size, and capital structure. More specifically, the study reframes profitability not merely as a statistical mediator but as a necessary economic transmission channel through which sustainability engagement and firm fundamentals reshape financing decisions. By integrating signalling theory, trade-off theory, and pecking order reasoning within a unified sustainability finance framework, this research advances the debate beyond simple direct effect modelling. Using path analysis, this study identifies the extent to which CSR, sales growth, and firm size exert indirect effects on capital structure through profitability. To enhance methodological rigour and address potential endogeneity concerns, the empirical design incorporates lagged explanatory variables and panel fixed effects, thereby improving causal interpretation of the mediation mechanism. These insights provide strategic guidance for corporate management in designing more efficient and sustainable financing policies, taking into account internal factors, such as earnings generated from social responsibility initiatives, sales growth, and scale management. Managerially, the findings imply that CSR initiatives influence leverage decisions only when they translate into measurable profitability improvements. For policymakers, the results highlight the importance of ESG related regulatory frameworks in shaping capital allocation within environmentally sensitive industries. For investors, sustainability performance should be interpreted in conjunction with earnings quality and internal financing capacity rather than as an isolated reputational signal. Ultimately, the results of this study are expected to serve as a valuable reference for Indonesian companies aiming to improve their financial performance through strengthened CSR efforts, optimised sales growth, and efficient firm size management. By positioning the Indonesian maritime sector as a natural laboratory characterised by high fixed assets, environmental exposure, and capital market sensitivity, this study offers context-specific insights with broader implications for emerging market sustainability finance. Understanding profitability's critical role in capital structure decisions enables firms to develop healthier financing strategies that support long term business sustainability. Accordingly, this research contributes to contemporary ESG finance discourse by empirically illustrating how sustainability engagement and operational fundamentals converge through profitability to determine leverage dynamics. The operationalisation of variables in this study is as follows:

Variable Type	Variabel	Definition	Measure	Scale
Dependen Variable	Capital Structure	The balance or ratio between equity capital and debt capital	Debt of Equity Ratio (DER) = $\frac{\text{Total Liabilities}}{\text{Total Equity}} \times 100\%$	Ratio
	Corporate Social Responsibility	The company's commitment to stakeholders, either directly or indirectly, by improving environmental quality and community welfare while considering the negative impacts caused by the company	$CSRDI_j = \frac{\sum X_j}{N_j}$	Ratio
Independen Variable	Sales Growth	Revenue generated from sales, where an increase in sales can be used as a measure of the company's sales growth	Sales Growth = $\frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$	Ratio
	Firm Size	The size of the company, which can be assessed through various measures such as revenue, total assets, and total equity	Firm Size = Ln Total Asset	Natural Logarithm
Mediation Variable	Profitability	The company's ability to generate profit or earnings within a certain period. A company is considered to have good profitability if it meets predetermined profit targets by utilising its assets and capital efficiently	ROA = $\frac{\text{Net Profit after Tax}}{\text{Total asset}} \times 100\%$	Ratio

Table 3. Variabel Used in Study (Source: Authors, 2025)

4. RESULTS

4.1. Equations and Descriptive Statistics

This study has been conducted using financial data obtained from the financial statements of 88 maritime companies listed on the Indonesia Stock Exchange (IDX) during the period from 2021 to 2024. The 2021–2024 period captures post pandemic financial adjustment and increasing sustainability related disclosure practices in Indonesian capital markets, making it particularly relevant for examining ESG finance interactions. The financial data used includes variables that form the basis for calculating the capital structure. In addition to financial data, this study also utilises data on the implementation of corporate sustainability reports. All 88 maritime companies included in the model consistently published annual sustainability reports. This consistency strengthens comparability across firms and supports the interpretation of CSR disclosure as a proxy for sustainability engagement within a capital-intensive and environmentally exposed industry. Path analysis has been employed as the analytical method within a panel data framework. To address potential endogeneity concerns, the estimation incorporates lagged independent variables ($t-1$), firm fixed effects, and year fixed effects. Robust standard errors are applied to correct for heteroskedasticity. Indirect effects are tested using bootstrapping procedures. The structural equations are specified as follows:

Structural Equation 1 (Profitability Equation):

$$Z = \rho_4 X_1 + \rho_5 X_2 + \rho_6 X_3 + \mu_i + \lambda_t + \varepsilon_1$$

Structural Equation 2 (Capital Structure Equation):

$$Y = \rho_1 X_1 + \rho_2 X_2 + \rho_3 X_3 + \rho_7 Z + \mu_i + \lambda_t + \varepsilon_2$$

Description:

X_1 : Corporate Social Responsibility (CSR)

X_2 : Sales growth

X_3 : Firm size

Z : Profitability (ROA)

Y : Capital structure (DER)

ρ_1 : Direct effect of CSR on capital structure

ρ_2 : Direct effect of sales growth on capital structure

ρ_3 : Direct effect of firm size on capital structure

ρ_4 : Effect of CSR on profitability

ρ_5 : Effect of sales growth on profitability
 ρ_6 : Effect of firm size on profitability
 ρ_7 : Effect of profitability on capital structure
 μ_i : Firm fixed effects
 λ_t : Year fixed effects
 $\varepsilon_1, \varepsilon_2$: Error terms

The specification explicitly models profitability as the transmission channel through which CSR, sales growth, and firm size influence leverage decisions. The inclusion of fixed effects (μ_i and λ_t) controls for unobserved heterogeneity and macroeconomic shocks is aimed at improving causal interpretation relative to cross-sectional designs. The inclusion of profitability as a mediating variable in this study plays a pivotal role in providing a deeper understanding of the underlying mechanisms linking Corporate Social Responsibility (CSR), sales growth, and firm size to capital structure. Unlike prior studies that treat profitability as a simple statistical intermediary, this study conceptualises profitability as a structural transmission mechanism within a sustainability-finance framework. In capital-intensive maritime operations, internally generated earnings determine whether firms rely on retained earnings or external debt markets for long-term asset financing. Profitability not only reflects a firm's operational efficiency but also serves as a key channel in determining financing preferences between internal and external sources. Consistent with dynamic pecking order reasoning, firms with stronger profitability are more likely to prioritise internal financing, while firms with weaker earnings performance may increase leverage exposure. By integrating financial data with indicators of CSR, sales growth, and firm size, this research adopts a multidimensional approach that goes beyond conventional financial analysis. This integrated framework allows the study to capture both risk reduction channels (via CSR disclosure and stakeholder trust) and financing demand channels (via growth and scale effects), thereby offering a more comprehensive explanation of capital structure dynamics. CSR is evaluated as a form of social responsibility that can enhance stakeholder trust and financial performance; sales growth reflects the effectiveness of marketing strategies and value creation; while firm size indicates operational scale and achievable cost efficiency. In the maritime sector, these variables are particularly salient due to high fixed asset commitments, environmental exposure, regulatory oversight, and freight rate volatility. Therefore, the empirical setting provides context specific insight with broader implications for emerging market sustainability finance. The combination of these variables provides a comprehensive picture of how strategic and operational elements influence capital structure through the mediating role of profitability. Table 4 presents descriptive statistics for all variables, including mean, standard deviation, minimum, and maximum values, offering an overview of leverage distribution, profitability dispersion, growth variability, and CSR disclosure intensity across firms. This data is essential for understanding how CSR and firm characteristics affect capital structure (Table 4).

N = 88	Mean	Max	Min	Std. Dev.
CapitalStructure	0.695	3.410	0.090	0.627
CSR	0.308	0.500	0.100	0.121
SalesGrowth	0.129	1.110	0.010	0.166
FirmSize	28.920	32.820	25.95	1.718
Profitability	0.124	0.610	0.010	0.116

Table 4. Descriptive Statistics (Source : Data analysis results, 2025)

This study focuses on companies within the maritime sector, as this sector generally comprises firms engaged in sea transportation services, logistics, and other supporting activities whose demand tends to be relatively stable, particularly in the context of international trade and interregional distribution. Beyond demanding stability, the maritime sector represents a capital-intensive and environmentally exposed industry characterised by high fixed asset commitments, long investment cycles, regulatory scrutiny, and increasing ESG related monitoring. These structural characteristics make the sector an appropriate empirical setting to examine how profitability functions as a transmission mechanism between sustainability engagement and financing decisions. In this sense, the maritime industry operates as a natural laboratory for studying capital structure dynamics under sustainability-related uncertainty. Regarding multicollinearity, the Variance Inflation Factor (VIF) has been examined in the preliminary regression to ensure that multicollinearity is not at a problematic level. The highest recorded VIF is 1.125. Therefore, multicollinearity is not considered an issue in interpreting the regression results (Table 4). All VIF values are substantially below the commonly accepted threshold of 10, and even below the more conservative threshold of 5, indicating a very low degree of linear correlation among the independent variables. This result strengthens the reliability of coefficient estimates and supports the validity of the mediation model specification. Additionally, tolerance values exceeding 0.80 further confirm the absence of multicollinearity concerns. These findings suggest that CSR, sales

growth, firm size, and profitability capture distinct economic dimensions rather than overlapping constructs, reinforcing the structural interpretation of profitability as a transmission channel rather than a redundant explanatory variable.

Model	Collinearity Statistics	
	Tolerance	VIF
CSR	0.889	1.125
SalesGrowth	0.978	1.023
FirmSize	0.899	1.112
Profitability	0.944	1.059

Table 5. Multicollinearity Test Results (Source : Data analysis results, 2025)

4.2. Regression Analysis Results

This study employs multiple regression analysis with a path analysis model. The testing involves three stages of pathways, as follows:

- Path 1: Corporate Social Responsibility (CSR) to capital structure mediated by profitability
- Path 2: Sales growth to capital structure mediated by profitability
- Path 3: Firm size to capital structure mediated by profitability

The results of the path analysis based on three stages of pathways are presented in Figure 2 below:

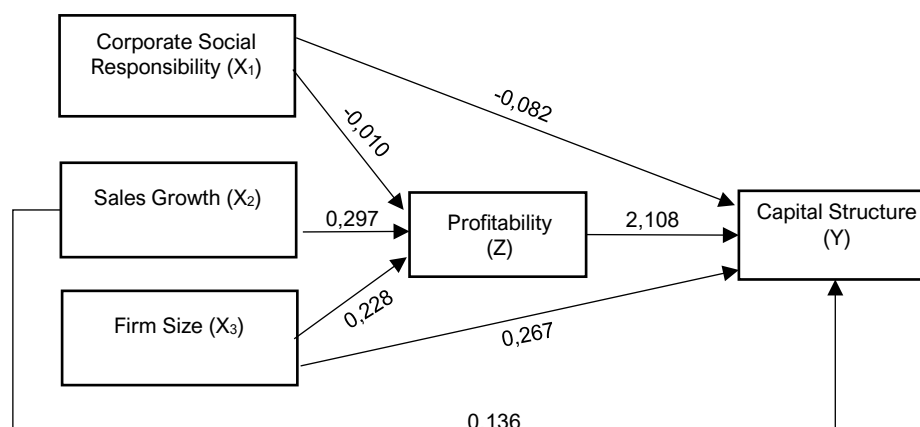


Figure 2. Path Analysis Test (Source : Data analysis results, 2025)

Figure 2 illustrates the direct and indirect effects of the three independent variables: Corporate Social Responsibility (CSR), sales growth, and firm size on capital structure, with profitability serving as the mediating variable. Rather than interpreting the results merely as coefficient comparisons, the analysis is reframed to emphasise profitability as an economic transmission mechanism linking firm fundamentals and sustainability engagement to financing decisions. This perspective aligns the study with contemporary capital structure debates that stress dynamic adjustment processes and ESG related risk channels. The analysis results indicate that CSR (X_1) has a direct effect on capital structure (Y) of -0.082, while the indirect effect through profitability (Z) is $-0.010 \times 2.108 = -0.021$, resulting in a total effect of -0.103. However, the direct and indirect pathways are statistically insignificant. This suggests that CSR disclosure alone does not automatically alter leverage decisions in the maritime sector. Instead, CSR appears to influence financing strategy only when it translates into measurable improvements in financial performance. This finding supports a conditional ESG capital structure linkage rather than a direct signalling effect. Sales growth (X_2) has a direct effect on capital structure of 0.136, whereas the indirect effect through profitability is $0.297 \times 2.108 = 0.626$, producing a total effect of 0.762. Because sales growth significantly affects profitability and capital structure, the evidence indicates partial mediation. This supports the pecking order mechanism, whereby firms experiencing revenue expansion strengthen internal financing capacity, thereby influencing leverage decisions. Profitability functions here as a dynamic adjustment channel through which operational expansion translates into financing structure adaptation. Similarly, firm size (X_3) shows a direct effect of 0.267 on capital structure and an indirect effect of $0.228 \times 2.108 = 0.481$, producing a total effect of 0.748. The size profitability pathway reflects scale efficiency and improved earnings

stability, which reduces perceived creditor risk and facilitates access to external financing. In capital-intensive maritime operations, characterised by high fixed assets and environmental exposure, firm scale enhances financial resilience primarily through profitability rather than through size alone. Overall, the results suggest that profitability operates as a necessary transmission mechanism connecting firm fundamentals and sustainability engagement to capital structure decisions. In capital-intensive and environmentally sensitive industries such as maritime transportation and logistics, financing choices are not directly driven by CSR disclosure or firm characteristics per se, but by their capacity to generate sustainable earnings. Thus, the core contribution of this study does not lie in establishing new direct relationships, but in demonstrating that profitability conditions the effectiveness of CSR, growth, and firm scale in shaping leverage decisions. This reframing puts the findings within broader ESG finance and dynamic capital structure discussions, particularly in emerging market contexts.

Therefore, the presence or absence of a strong CSR programme does not directly determine leverage decisions; rather, its financial relevance materialises only when CSR engagement improves operating performance. In this study, profitability functions as a conditional transmission mechanism through which social responsibility initiatives may influence strategic financing choices. This finding suggests that CSR affects capital structure only insofar as it generates measurable economic returns, reinforcing the view that sustainability engagement must translate into earnings performance to become financially consequential. The intervening role of profitability in the relationship between sales growth and capital structure reflects a dynamic internal financing channel consistent with pecking order reasoning. Efficiently managed revenue expansion enhances retained earnings, strengthens liquidity, and reduces dependence on costly external debt. In this sense, profitability transforms operational growth into financing capacity, allowing firms to adjust leverage according to internally generated funds rather than purely external market signals. Thus, while sales growth alone may not automatically restructure leverage, its impact becomes economically meaningful when it improves profitability, which subsequently shapes financing preferences in capital-intensive maritime firms characterised by substantial fixed assets and cyclical revenue exposure. Furthermore, profitability also mediates the relationship between firm size and capital structure. Larger firms benefit from scale efficiency, revenue stability, and enhanced creditor confidence; however, these advantages influence leverage decisions primarily through improved earnings performance. Profitability therefore operates as the central economic channel through which firm scale affects capital structure, reducing perceived default risk and supporting more flexible financing strategies. Collectively, these findings reposition profitability not merely as an intervening statistical variable, but as a necessary financial conduit linking sustainability engagement and firm fundamentals to capital structure adjustment. In environmentally sensitive and asset-intensive industries such as maritime transportation and logistics, financing structures appear to respond primarily to earnings capacity rather than to CSR disclosure or firm characteristics in isolation.

The following section presents the results of the partial tests to evaluate the explanatory power of each independent variable, as shown in Table 6 below:

Model	Unstandardised Coefficients		Standardized Coefficients		
	Beta	Std. Error	Beta	t	Sig
(Constant)	-0.322	0.223		-1.439	0.155
CSR	-0.001	0.128	-0.001	-0.006	0.996
SalesGrowth	0.213	0.085	0.297	2.509	0.015
FirmSize	0.015	0.008	0.228	1.843	0.070

Table 6. Results of the T-Test Coefficients (Dependent Variable: CapitalStructure - Source : Data analysis results, 2025)

The regression results indicate that Corporate Social Responsibility (CSR) does not exhibit a statistically significant direct effect on capital structure ($p = 0.996$). This finding suggests that, in the maritime sector, CSR engagement alone does not immediately translate into leverage adjustments. From a financial perspective, creditors and managers may prioritise earnings capacity and asset structure over sustainability disclosure when determining debt levels. This result reinforces the argument that CSR becomes financially relevant only when it improves measurable profitability, rather than influencing capital structure directly. Sales growth shows a statistically significant positive association with capital structure ($p = 0.015$). This suggests that expanding firms tend to adjust their financing structure as revenues increase. In capital-intensive maritime companies, revenue expansion may require additional working capital and investment in fleet or logistics infrastructure, potentially increasing leverage. However, as shown in the mediation analysis, this relationship becomes stronger through profitability, indicating that internal earnings generation plays a more decisive role than growth alone. Firm size presents a positive coefficient with marginal statistical significance at the 10% level ($p = 0.070$). While the effect should be interpreted cautiously, the result implies that larger firms may have greater access to debt markets due to scale advantages, asset collateralisation capacity, and stronger bargaining power with creditors. Nevertheless, the relatively moderate level of significance suggests that firm size alone is not a dominant determinant of leverage; instead, its influence appears to operate

largely through enhanced profitability and financial stability. Overall, these findings indicate that in Indonesia's maritime sector, capital structure decisions are more strongly aligned with operational performance and earnings capacity than with sustainability disclosure or firm scale in isolation. Profitability remains the central mechanism through which firm fundamentals shape financing behaviour.

5. DISCUSSION

Corporate Social Responsibility (CSR), sales growth, and firm size are internal factors believed to influence a company's strategic financial decisions, including its capital structure. These three factors reflect both non-financial and financial aspects of corporate performance, which are interconnected and contribute towards shaping perceptions of risk and credibility among investors and creditors. In capital intensive industries such as maritime transportation and logistics, financing decisions are not static but evolve dynamically in response to operational performance, asset structure, and perceived environmental risk exposure. Therefore, this study interprets capital structure not merely as a static leverage ratio, but as an outcome of an adjustment process in which profitability functions as a transmission mechanism between firm fundamentals and financing choices. Corporate Social Responsibility (CSR), as a manifestation of a company's social responsibility towards the environment and society, is not merely a reputational instrument but also serves as a positive signal to capital markets and financial institutions (Loh & Sing, 2020). In recent ESG oriented financial frameworks, CSR disclosure is increasingly interpreted as a proxy for environmental and social risk management, particularly in emerging markets where standardised ESG ratings remain limited. Within this perspective, CSR may reduce information asymmetry, strengthen stakeholder confidence, and mitigate perceived non-financial risk. However, the empirical findings of this study suggest that CSR does not directly influence capital structure, indicating that sustainability disclosure alone is insufficient to alter leverage decisions unless it translates into improved earnings capacity. This result aligns with dynamic capital structure theory, which posits that firms adjust leverage gradually toward target levels based on profitability, adjustment costs, and market conditions. In the Indonesian maritime sector characterised by high fixed assets, exposure to environmental regulation, and increasing ESG scrutiny creditors appear to prioritise tangible performance indicators, such as earnings stability and asset collateralisation, over standalone sustainability disclosure. Thereby, CSR influences capital structure primarily through its impact on profitability rather than as an independent determinant.

Meanwhile, sales growth is a vital indicator of the success of a company's marketing and operational strategies. An increase in sales not only reflects the firm's ability to generate cash flows but also serves as a signal of business stability and long-term prospects. The results indicate that sales growth exerts a stronger influence on capital structure when mediated by profitability, suggesting that revenue expansion affects leverage only when it generates sustainable earnings. This mechanism is consistent with pecking order theory, where internally generated funds reduce dependence on external debt, and with signalling theory, where consistent profitability enhances creditor confidence. Firm size also plays an important role in capital structure decisions, as larger firms typically have easier access to capital markets and financial institutions, and are better positioned to diversify funding risks. However, the findings indicate that firm size alone does not constitute a dominant explanatory factor. Instead, its influence operates largely through enhanced profitability and financial stability. Larger maritime firms benefit from economies of scale, asset re-deployability, and stronger bargaining power with lenders, but these advantages translate into financing flexibility primarily when accompanied by efficient asset utilisation and profit generation. Collectively, these findings reposition profitability as a necessary transmission channel linking CSR engagement, operational growth, and firm scale to financing structure. Rather than introducing a new theoretical framework, this study contributes by empirically clarifying the mechanism through which sustainability-related activities and firm fundamentals affect leverage in a capital-intensive and environmentally sensitive industry.

In specific industrial sectors such as the maritime industry in Indonesia, these dynamics may differ due to varying market structures, regulatory frameworks, and levels of transparency. The maritime sector can be conceptualised as a natural laboratory due to its high dependence on debt-financed assets, vulnerability to environmental regulation, and increasing pressure for ESG compliance. This context strengthens the relevance of examining how profitability mediates the relationship between sustainability initiatives and financing strategy, extending insights beyond a purely national case study. From a theoretical standpoint, the study integrates traditional capital structure theories with emerging ESG-based financial perspectives by demonstrating that sustainability engagement affects leverage indirectly through financial performance. From a practical standpoint, the findings suggest that managers should recognise that CSR initiatives influence financing outcomes only when they generate measurable profitability gains; policymakers should consider how ESG regulation shapes capital allocation in asset intensive sectors; and investors should interpret sustainability performance in conjunction with earnings quality rather than as a standalone signal. As such, this research not only adds to the existing literature on the determinants of capital structure but also provides contextual insights into how social and operational aspects are integrated into companies' strategic financial decisions within emerging maritime economies.

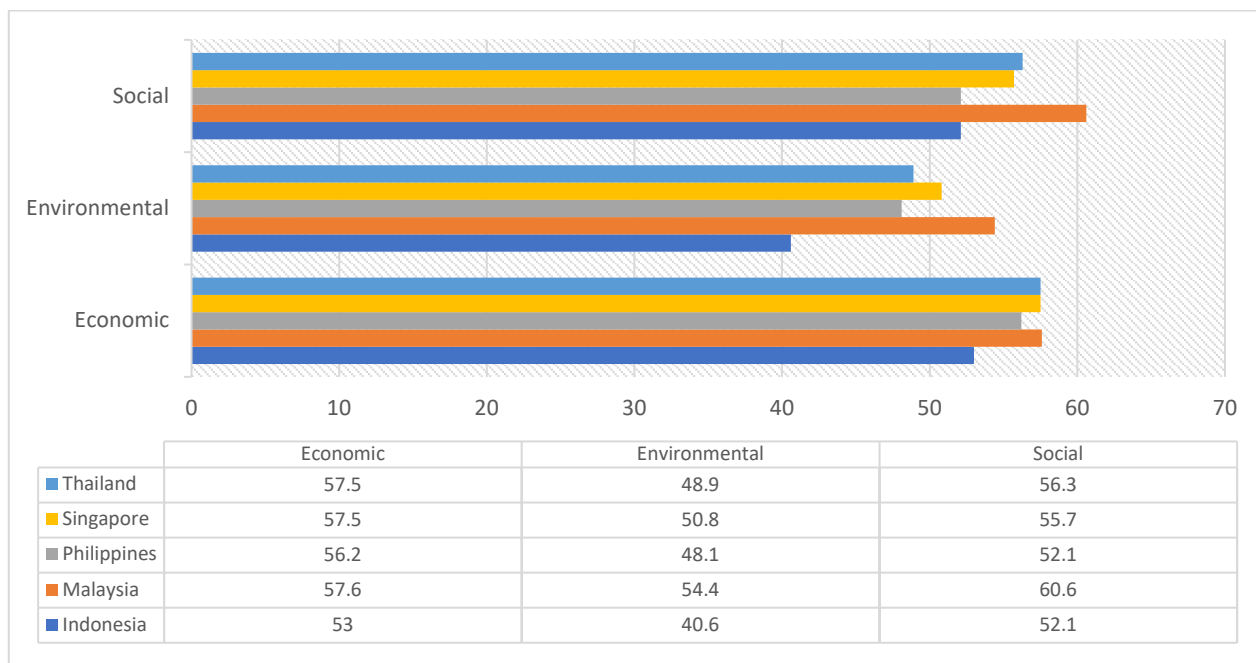


Figure 3. Level CSR Disclosure per Topics (Source: ASEAN CSR Network, reprocessed)

5.1. Corporate Social Responsibility and Capital Structure

The findings of this study indicate that Corporate Social Responsibility (CSR), when considered as a proxy for ESG-related practices, does not directly have a significant effect on the capital structure of maritime companies in Indonesia, leading to the rejection of the first hypothesis (H1). This result suggests that, although CSR/ESG is theoretically regarded as a strategic mechanism to enhance corporate reputation, increase investor confidence, and facilitate access to financing, its impact on capital structure is contingent upon its ability to improve firm profitability, which serves as a key transmission mechanism in capital-intensive and environmentally sensitive industries. In other words, profitability mediates the pathway through which ESG practices can influence financing decisions, consistent with signalling theory: firms with stronger ESG performance signal commitment and reduce information asymmetry, but only those that translate ESG efforts into measurable financial performance gain credibility with creditors and investors. The weak effect observed reflects the reality that many maritime firms in Indonesia prioritise operational efficiency and short-term profitability over systematic ESG integration, and environmental and social considerations have yet to be fully embedded into business and financial strategies. The maritime sector, with high fixed assets, exposure to environmental risk, and close interaction with coastal communities, functions as a natural laboratory where ESG integration is especially critical but remains underdeveloped.

This finding demonstrates a gap between the conceptual framework of CSR/ESG as a strategic tool and actual firm-level practices. The contextual nature of this effect aligns with prior studies: for example, Pradnyani and Purbawangsa (2017) reported a positive effect of CSR on capital structure, whereas Giannarakis (2014) found a negative effect, highlighting that the relationship is highly contingent on sector characteristics, stakeholder pressure, and temporal context. The primary contribution of this study lies in clarifying that ESG/CSR initiatives influence capital structure primarily through their effect on profitability, a mechanism often underexplored in prior literature. This insight has managerial, policy, and investor implications:

- 1) Managers should recognise that ESG investments alone do not automatically improve financing capacity; only those generating measurable profitability gains will affect capital structure.
- 2) Policymakers should consider sector-specific ESG regulations and incentives that align environmental and social initiatives with financial performance.
- 3) Investors should interpret sustainability performance not in isolation but in combination with firm profitability and operational characteristics.

Overall, this study enriches the literature on ESG and capital structure by providing an industry-specific, contextually nuanced perspective and emphasises the importance of integrating ESG practices strategically into financial decision-making. The findings encourage further research on ESG-performance pathways in capital-intensive and environmentally sensitive sectors, moving beyond descriptive relationships toward a deeper understanding of causal mechanisms.

5.2. Sales Growth and Capital Structure

The results of this study indicate that sales growth has a significant positive effect on the capital structure of maritime companies in Indonesia, confirming the second hypothesis (H2). This finding shows that firms experiencing high sales growth require additional financing to support operational expansion, capacity enhancement, and long-term strategic investments. Theoretically, this positive relationship can be understood through signalling theory and the mediating role of profitability. Sustained sales growth signals to creditors and investors that the firm is capable of generating consistent revenue and profits, which enhances its credibility and reduces perceived financial risk. Profitability functions as the key transmission mechanism, enabling firms to translate revenue growth into tangible financing capacity, rather than merely demonstrating growth for its own sake. In addition, public and stakeholder trust amplifies this effect. Companies that cultivate trust through service quality, transparent communication, and community engagement strategies highlighted by Matsuka and Rozanska (2017) not only enhance their reputation but also reinforce the link between sales growth, profitability, and capital structure. Consequently, sales growth should be interpreted as both a financial and relational signal that interacts with profitability to shape financing decisions in capital-intensive and ESG-sensitive sectors like maritime.

These findings align with Marlina et al. (2020), who reported a significant positive relationship between sales growth and capital structure, but differ from Sari et al. (2019), who found no significant effect. This suggests that industry context, firm-specific characteristics, and growth strategies critically influence how sales growth translates into financing outcomes. The maritime sector, characterised by high fixed assets, environmental exposure, and increasing ESG scrutiny, provides a particularly relevant setting to observe these dynamics. The main contribution of this study lies in demonstrating that sales growth impacts capital structure indirectly through profitability, highlighting a mechanism often overlooked in prior research. Practical implications include:

- 1) Managers should design growth strategies that not only increase revenue but also enhance profitability to strengthen the firm's financing position.
- 2) Policymakers should recognise that growth-oriented incentives must align with firm-level financial performance to effectively influence capital allocation.
- 3) Investors should evaluate sales growth in combination with profitability metrics to better interpret a firm's financing potential and risk profile.

Overall, this study aims at enriching the literature by underlining the importance of contextual, mechanism-driven analysis of internal determinants of capital structure. It also provides avenues for future research to examine additional mediating factors, such as operational efficiency or ESG integration, in shaping financing outcomes in emerging-market, capital-intensive industries.

5.3. Firm Size and Capital Structure

The findings of this study indicate that firm size has a significant positive effect on the capital structure of maritime companies in Indonesia, supporting the third hypothesis (H3). This suggests that larger companies have a greater capacity to acquire and manage external financing, whether from banking institutions or capital markets, due to their greater asset base, established organisational structures, and higher market credibility. From a theoretical perspective, this effect can be interpreted through signalling theory and the mediating role of profitability. Larger firms are perceived as lower-risk borrowers by creditors and investors; however, firm size influences capital structure primarily through its effect on profitability, which strengthens the firm's capacity to service debt and leverage financing. In other words, profitability mediates the pathway from firm size to capital structure, reinforcing the idea that mere scale is not sufficient financial performance to inspire market confidence and create access to external funding. The maritime sector provides a particularly relevant context for this dynamic. As a capital-intensive and environmentally sensitive industry, maritime firms face high operational risks, regulatory scrutiny, and exposure to ESG related pressures. Firm size in this context functions as a strategic advantage, enabling companies to diversify operations, invest in compliance and sustainability initiatives, and negotiate favourable financing terms. This positions the maritime sector as a natural laboratory for understanding how firm characteristics interact with profitability to shape capital structure. These findings align with Pramana and Darmayanti (2020), who reported a significant positive relationship between firm size and capital structure, but differ from Sari et al. (2019), highlighting that the size-leverage relationship is contingent upon sector specific characteristics, industry risk, and strategic positioning. Practical implications include:

- 1) Managers should recognise that increasing firm size can enhance access to external capital, but the benefit is maximised only when size translates into sustainable profitability.
- 2) Policymakers should consider tailored financing policies that support growth and risk mitigation for large maritime firms, promoting sectoral stability.

- 3) Investors should evaluate firm size in conjunction with profitability metrics and operational risk exposure when assessing leverage potential.

Overall, this study contributes to the literature by demonstrating that firm size affects capital structure indirectly via profitability, particularly in a capital intensive and ESG sensitive sector. It provides empirical evidence from the underexplored maritime industry in Indonesia, bridging gaps in corporate finance research and offering contextually grounded insights for practice and policy.

5.4. Corporate Social Responsibility and Capital Structure with Profitability as an Intervening Variable

The results of this study demonstrate that profitability, measured by Return on Assets (ROA), plays a significant mediating role in the relationship between Corporate Social Responsibility (CSR), as a proxy for ESG-related practices, and capital structure, confirming the fourth hypothesis (H4). This finding clarifies that the effect of CSR/ESG on capital structure does not occur directly, but rather through improvements in financial performance. Effective ESG implementation enhances a firm's reputation and stakeholder trust, which translates into higher profitability, thereby providing firms with greater flexibility in financing decisions, including the choice between debt and equity. Theoretically, these results are consistent with signalling theory, in which profitability serves as a critical signal to investors and creditors regarding the firm's stability and future prospects. CSR/ESG is therefore not only a social or ethical obligation but also a strategic instrument that strengthens economic performance and influences long-term capital structure decisions. This mechanism aligns with prior findings by Pradnyani and Purbawangsa (2017) and Lopes et al. (2018), emphasising that profitability is the key transmission channel through which CSR affects financing capacity. The maritime sector context underscores the importance of this mechanism. Characterised by high fixed assets, capital-intensive operations, and heightened social and environmental expectations, maritime companies face unique pressures to balance operational efficiency, ESG compliance, and financing strategies. This study demonstrates that CSR/ESG initiatives alone are insufficient to influence capital structure; their impact materialises only when they successfully enhance profitability and, consequently, financial flexibility. This insight contributes theoretically by shifting the understanding of CSR/ESG from a purely ethical practice to a strategic tool for reinforcing corporate financial structures through profitability. Empirically, it extends the literature by providing evidence from an underexplored emerging-market, capital-intensive sector, offering a contextualised view of the mediating role of profitability. Practical implications include:

- 1) Managers should design CSR/ESG programmes with the explicit goal of improving financial performance, ensuring that social and environmental initiatives contribute to tangible economic benefits that enhance financing capacity.
- 2) Policymakers should consider not only the social outputs of CSR/ESG initiatives but also their effectiveness in generating profitability and supporting sustainable financing practices in strategic sectors like maritime.
- 3) Investors should evaluate CSR/ESG performance in conjunction with profitability metrics when assessing leverage potential and risk, recognising that ESG alone does not guarantee improved access to capital.

Overall, these findings demonstrate that profitability is a necessary transmission mechanism linking CSR/ESG practices to capital structure in the maritime sector. This mechanism-based understanding emphasises that sustainable and socially responsible strategies are most effective when they contribute towards competitive financial performance, providing both theoretical depth and practical guidance for firms, regulators, and investors in emerging-market, capital-intensive industries.

5.5. Sales Growth and Capital Structure with Profitability as an Intervening Variable

The results of this study indicate that profitability, measured using ROA, significantly mediates the relationship between sales growth and capital structure, confirming the fifth hypothesis (H5). This implies that sales growth does not directly influence capital structure, but rather exerts its effect indirectly through enhanced profitability, which strengthens a firm's financial capacity to adopt a better financing strategy. In essence, profitability serves as the key transmission mechanism that converts operational performance into tangible financial flexibility for managing debt and equity. Theoretically, this finding aligns with signalling theory: profitability generated from sales growth acts as a positive signal to investors and creditors regarding the firm's stability, credibility, and capacity to meet long-term obligations. Firms with strong sales-driven profitability are perceived as lower-risk borrowers, facilitating access to external funding and enabling a strategically leveraged capital structure. In the context of Indonesia's maritime sector, characterised by capital-intensive operations, high fixed assets, and exposure to environmental and operational risks, this mechanism is particularly relevant. The study highlights that sales growth must translate into financial performance to meaningfully impact capital structure. Mere revenue growth without profitability gains does not suffice to influence financing decisions in this sector. Practical implications include:

- 1) Managers should focus on converting sales growth into profitability, ensuring that operational expansion strengthens the firm's financing flexibility.
- 2) Policymakers should support industry strategies that integrate growth performance with financial capacity, promoting sustainable capital allocation.
- 3) Investors should interpret sales growth in conjunction with profitability indicators to assess leverage potential and risk accurately.

These findings contribute theoretically and empirically by demonstrating that profitability functions as a necessary mechanism linking operational performance to capital structure, emphasising the synergy between growth, financial performance, and sustainable financing in emerging-market, capital-intensive industries like maritime.

5.6. Firm Size and Capital Structure with Profitability as an Intervening Variable

The results of this study demonstrate that profitability, measured by ROA, significantly mediates the relationship between firm size and capital structure, confirming the sixth hypothesis (H6). This indicates that larger firms do not automatically adopt more leveraged capital structures; rather, the effect of firm size on financing decisions is transmitted through profitability. Larger firms, with greater assets, operational efficiency, and market presence, are more likely to generate higher profits, which in turn enhances their capacity to access and manage external financing effectively. From a theoretical perspective, this aligns with signalling theory, where high profitability in large firms signals stability and creditworthiness to investors and creditors. The resulting market confidence allows these firms to leverage debt strategically, optimising their capital structure. Profitability thus functions as a necessary transmission mechanism linking business scale to financing capacity. In the context of Indonesia's maritime sector, a capital intensive industry with high operational and environmental risks, this mechanism is particularly important. Large maritime firms must convert business scale into financial performance to strengthen their leverage and maintain sustainable financing structures. Without translating size into profitability, firm scale alone does not guarantee improved access to external capital. Practical implications include:

- 1) Managers should focus on strategies that convert firm size into profitability, ensuring that operational scale enhances financing flexibility.
- 2) Policymakers should consider supporting large maritime firms through policies that reward efficiency and sustainable growth, strengthening sector-wide capital structure resilience.
- 3) Investors should evaluate firm size together with profitability indicators to assess leverage potential and risk accurately, rather than relying on size alone.

These findings contribute theoretically and empirically by demonstrating that firm size influences capital structure both directly and indirectly via profitability, offering a mechanism driven perspective that is still underexplored in the Indonesian maritime sector. This insight underscores that strategic financial decisions in capital intensive industries rely on the translation of scale into measurable financial performance, enhancing both academic understanding and practical guidance.

6. CONCLUSION

This study demonstrates that Corporate Social Responsibility (CSR), considered as a proxy for ESG related practices, does not directly affect the capital structure of maritime firms in Indonesia. This finding indicates that, in the examined sector, CSR/ESG initiatives are often perceived as symbolic or normative activities rather than as strategically integrated components of financial decision making. The strategic role of CSR/ESG in shaping corporate financing remains underdeveloped unless it is translated into improved profitability. In contrast, sales growth and firm size are found to have a significant positive impact on capital structure, indicating that firms experiencing revenue expansion and operating at a larger scale are better positioned to access external financing. Sales growth reflects expectations of future cash flows, while firm size strengthens the firm's credibility and bargaining power with creditors. Crucially, profitability plays a significant mediating role, bridging the influence of CSR/ESG, sales growth, and firm size on capital structure. These results highlight that capital structure decisions are driven not merely by operational or social strategies but by their ability to enhance financial performance, consistent with signalling theory: high profitability sends positive signals to the market and creditors regarding stability and future prospects.

The study aims to contribute to this issue, both theoretically and empirically, by integrating CSR/ESG, sales growth, firm size, and profitability into a comprehensive capital structure model within the context of a developing country. Its novelty lies in simultaneously examining the mediating role of profitability across three key determinants of financing and applying this framework to an underexplored industrial sector of the maritime industry. Practical implications include:

1. Managers should ensure that CSR/ESG programs, sales growth initiatives, and firm expansion strategies are effectively translated into profitability, which is essential for attracting sustainable and efficient external financing.
2. Policymakers can use these insights to design incentives and regulations that align ESG performance and operational expansion with financial stability, particularly in strategic and capital-intensive sectors.
3. Investors should evaluate CSR/ESG performance, sales growth, and firm size in conjunction with profitability metrics to make informed financing and risk-assessment decisions.

Furthermore, the findings have context-specific relevance to Indonesia's maritime sector, which faces challenges such as operational disruptions, geopolitical tensions in the North Natuna Sea, territorial violations, and illegal fishing. Firms with robust capital structures and strong profitability are better equipped to withstand rising operational costs, shipping uncertainties, and logistics risks. These insights support adaptive financing strategies, including prioritising external funding to maintain operational continuity and efficiency under complex maritime conditions. Overall, this study underscores that profitability is the central mechanism linking ESG practices, operational performance, and firm scale to capital structure, providing both a theoretical foundation and practical guidance for sustainable financial management in capital-intensive and environmentally sensitive industries. The findings may add to the academic discourse on capital structure by situating financial strategy within the broader context of sustainability, operational efficiency, and sector-specific risk management.

7. LIMITATIONS

This study has several limitations that should be acknowledged and addressed in future research. First, the sample is limited to maritime companies listed on the Indonesia Stock Exchange (IDX) during 2021–2024, which constrains the generalisability of the findings. The results may not be fully applicable to other industrial sectors with different operational, financial, and ESG-related characteristics. Future studies could expand the sample to include multiple sectors, enabling broader insights into how CSR/ESG practices, sales growth, and firm size influence capital structure across diverse contexts. Second, variations in CSR/ESG disclosure practices and financial performance among the sampled firms may affect the consistency and precision of the analysis. Differences in reporting quality, scope, and measurement standards could introduce bias in estimating the relationships between CSR/ESG, profitability, and capital structure. Future research is encouraged to adopt standardised ESG indices or composite measures to improve comparability and robustness. Third, this study primarily relies on observational data and path analysis, without explicitly addressing potential endogeneity, firm and year fixed effects, or alternative model specifications. These methodological limitations may affect causal interpretation. Subsequent studies should incorporate robust econometric techniques, such as panel data regression with fixed effects, instrumental variable approaches, or structural equation modelling (SEM) in order to strengthen the validity of causal inferences. Fourth, the focus on profitability as the sole mediating mechanism may overlook other important channels through which CSR/ESG, sales growth, and firm size influence capital structure. Future research could explore additional mediators, such as financial constraints, risk management, market reputation, or ESG performance scores, to provide a more nuanced understanding of these relationships. Above all, while this study provides valuable insights into the mediating role of profitability in capital structure decisions within Indonesia's maritime sector, the limitations highlight the need for broader samples, standardised ESG measures, advanced methodologies, and exploration of additional mechanisms to enhance generalisability, robustness, and conceptual depth in future research.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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