2023-09-12

ESG Reporting Quality Assessment in Listed Companies of Maritime Sector

M Tsatsaronis

T Syriopoulos

S Karamperidis *Plymouth Business School*

G Boura

A Dimopoulos

The present paper was an IAME2023 winner.

ESG Reporting Quality Assessment in Listed Companies of Maritime Sector

Michael Tsatsaronis, National and Kapodistrian University of Athens, mtsatsaronis@pms.uoa.gr
Theodore Syriopoulos, National and Kapodistrian University of Athens, tsiriop@pms.uoa.gr
Stavros Karamperidis, Plymouth Business School, stavros.karamperidis@plymouth.ac.uk
Georgia Boura, National and Kapodistrian University of Athens, gboura@pms.uoa.gr
Argyris Dimopoulos, National and Kapodistrian University of Athens, argyrisdimopoulos01@gmail.com

* Corresponding author: Dr. Michael Tsatsaronis

Abstract

Regulatory obligations and market trends connected to environmental sustainability have lately intensified their effect on the shipping industry. New standards are continuously being established, such as the IMO's 2050 aim of lowering greenhouse gas emissions by 50% compared to 2008 levels. These rules have an impact on capital markets and investor decisions about how to fund the maritime transport sector. The standards now include Environmental, Social, and Governance (ESG) components. These components are not only concerned with the environmental impact of shipping, but also with the social and governance dimensions of those firms that are typically associated with maritime transport risks, such as accidents, ship reservations, pollution issues, and so on. Considering the particular peculiarities of the maritime transport sector, our previous research has resulted in the development of a unified ESG reporting framework customized to shipping. To do this, the authors evaluated shipping related ESG reports and extracted essential ESG variables and methodological frameworks from them. The present study conducts a quality assessment of existing ESG reporting in various sectors of maritime transport companies on a large sample of firms listed at major stock exchanges, while it also identifies the level of compliance and areas for improvement. Based on a comprehensive methodological framework for reporting and assessing ESG for shipping, the research delivers relevant and robust information to aid management decision making, stakeholders, and debtholders insight on firm's sustainability.

Keywords: ESG reporting, ESG rating, sustainability, ESG index, shipping

1. Introduction

Companies in many industries employ Corporate Social Responsibility (CSR) as a means of survival and attaining more balanced functioning in order to deal with the never-ending environmental, social, labor, and economic challenges. CSR and Environmental, Social, and Governance (ESG) practices in maritime transport sector allude to a relatively recent project that is primarily considered as voluntary and beyond regulatory compliance. Although maritime rules have a long history in areas such as human life, safety, and the protection of the marine environment, few studies have been conducted to establish the extent to which the maritime regulatory framework integrates fundamental social responsibility concerns.

CSR and ESG practices are being implemented and promoted by a growing number of maritime executives and academics. Voluntary environmental, governance, and social norms are becoming a top focus for stakeholders in the maritime industry. According to a UN Global Compact Accenture (2010) global CEO research, ESG is a critical indicator of future company success and sustainability.

Maritime transport and specifically shipping businesses are being asked to take responsibility for the social and environmental implications of their operations and comply with international rules. Given the rising emphasis on sustainability-related issues by numerous stakeholder groups throughout the world, shipping firms must strengthen their efforts to combine the interests of many types of stakeholders. As a result, the inclusion of ESG features into maritime businesses' operational and financial strategy is becoming important.

Academic research has established a correlation between ESG and financial performance and credit risk (Eccles, et al., 2014; Ioannou & Serafeim, 2013; Tsatsaronis, et al., 2022a). Thus, environmental variables, such as maritime environment preservation, the effects of climate change and others, can have a substantial impact at the operation of a shipping company and its long-term development (Tsatsaronis, et al., 2022a). In previous research, we also included social and governance issues, as ESG performance is directly associated to traditional shipping risks such as ship reservations, environmental accidents, etc. (Tsatsaronis, et al., 2022b).

The implementation of ESG principles is also linked to a company's ability to acquire funding. Investors are now striving to include ESG risk elements in their investment procedures for the reasons stated above. As a result of this tendency, private institutions have developed ESG ratings and reporting. Using publicly accessible data, these institutions assess shipping firms based on their ESG performance.

On the one hand, shipping businesses decide to voluntarily reveal their ESG performance. On the other hand, recent efforts and legislation, intend to establish a direct relationship between financing conditions and ESG performance in the shipping sector. The Poseidon Principles, EU sustainable finance rules, and other sustainable shipping financing products and loan terms are expected to accelerate this transition in the maritime transport sector.

The authors use a developed unified ESG index to perform a quality assessment of the current ESG reporting in a sizable sample of companies listed on major stock exchanges in order to determine the level of compliance and areas for improvement. The results may carry implications for the shipping industry.

The rest of the paper is structured as follows: Section 2 provides an overview of the relatively scant ESG and CSR literature focusing on reporting ESG implications for the maritime sector and the shipping industry. Section 3 demonstrates the research data and methodology. Section 4 analyzes and explains the findings, while Section 5 concludes with implications, restrictions, and research recommendations.

2. Literature review

Maritime transport sector is struggling to deploy ESG or CSR policies in order to attract "green" financing. A company will engage in ESG practices if the benefits of implementing them are expected to outweigh the costs (Siegel & Vitaliano, 2007; Rodriguez-Fernandez, 2016; Okafor, et al., 2021). Any decision to voluntarily disclose information on ESG or CSR practices is based on these trade-offs between expected costs and benefits (Dye, 1985). As a result, there may be a link between CSR and corporate financial performance (CFP), because firms are proactive in projecting a positive image by disclosing ESG or CSR information that meets or exceeds stakeholder expectations (Brooks & Oikonomou, 2018). Despite the fact that the link between ESG or CSR adoption techniques and CFP has been studied in many other sectors for more than a decade (Cho, et al., 2019; Wu, et al., 2020; Nyeadi, et al., 2018), research in the maritime transport sector remains scant and restricted (Coady, et al., 2013; Drobetz, et al., 2014; Gavalas & Syriopoulos, 2018; Tsatsaronis, et al., 2022a).

Non-financial activities, such as those related to ESG, are becoming increasingly important for corporate organizations, as they are facing increased pressure from stakeholders to demonstrate corporate transparency regarding ESG disclosure and to act in a socially responsible manner (Eccles, et al., 2014; Hadj, 2020). Sustainability disclosure is widely used to aid organizations keep a positive image, reputation, and legitimacy even after crises, disasters, or unanticipated developments in the industry.

Corporations report mostly their social ideals, working conditions and safety, with far less emphasis placed on social and environmental problems such as pollution (Guthrie & Parker, 1989; Maltby, 2004). From the early 1970s through the late 1980s, social reports were released typically to supplement financial reports, although attention to environmental concerns like emissions and waste took precedence. Following the Global Reporting Initiative (GRI) plan in the late 1990s, integrated reports containing both environmental and social information alongside financial reports began to emerge (Kolb, et al., 2010). The following developments necessitated further improvements to corporate annual reports.

The United Nations Sustainable Stock Exchange has advocated for all publicly traded firms to publish the impact of their environmental, social, and governance (ESG) activities by 2030. (Sustainable Stock Exchanges, 2015). In response, as well as demand from other stakeholders, fully integrated reports including economic, social, and environmental data in a single report to offer a holistic picture of a firm's actions have been developed (Adam & Simnett, 2011). This field is now attracting a lot of attention from researchers. As empirical findings are incomparable (Malik, 2015), competing views from various researchers have resulted in the lack of a universally accepted theoretical perspective which tackles the following question: "why companies should engage in social reporting, and what effects will it have on the various stakeholder groups (Ullman, 1985) and on corporate performance". However, that lack seems to have been tackled over the last decade by the world's largest corporations who are interested in sustainability reporting (Maroun, 2019). Sustainability disclosures have also been shown to have an important function in informing investors and other stakeholders about organizational management of various types of resources utilized to produce value (Maroun, 2019). As a result, corporations began to use sustainability disclosures to promote their ESG efforts.

Through the 17 Sustainable Development Goals (SDGs), the United Nations (UN) recognizes the crucial role of international and multi-stakeholder partnerships and collaboration in mobilizing information, skills, technology, and financial resources for fulfilling the SDGs (United Nations, 2020). It is true that building multi-stakeholder relationships lays the groundwork for enhancing sustainable performance. These collaborations specifically enable the management and mitigation of externalities, the design of novel and enhanced sustainable goods and services, the creation and use of novel technology, and adherence to uniform operational standards and procedures.

This point of view supports the fact that organizations, such as shipping companies and other maritime transport related companies, are accustomed to adhering to generally accepted sustainability criteria to provide stakeholders with reliable information and enable a responsible assessment of the environmental and social practices of their businesses. Furthermore, corporate transparency is crucial for meeting stakeholder expectations and a tactical way to boost company success (Al Amosh, et al., 2023). Since qualitative information can be very arbitrary and geared at painting a skewed picture of the company, overstating positive attributes while understating negative ones, the adoption of defined criteria is essential in sustainability reporting. Multinational organizations seeking to implement sustainable practices have agreed upon a common set of criteria for that reason (International Financial Reporting Standards Foundation, 2021).

Companies are presently being forced to function sustainably because stakeholders and other parties are placing increasing demands on them for more accountability, pushing them to show their merits in the areas of the environment, society, and the economy. Additionally, shipping corporations are required to assume a greater share of responsibility for the social and environmental effects of their activities in order to meet international standards. The concepts and programs of significant international organizations (such the UN Global Compact or the UN SDGs) as well as commercial businesses, like SASB and GRI, are relied upon by authors of various ESG shipping reports because there is no systematic framework. The problem with these ideas is that they are frequently generic and refer to overlapping dummy variables and efforts. As a result, they are not being appraised or valued, and, more significantly, they are not being taken into account for the unique characteristics of the shipping industry. This research aims to fill this knowledge gap.

3. Methodology and Data

For the purposes of this study, the authors carried out a diligent evaluation of ESG reports and disclosure sources from 70 listed shipping companies on the NYSE, NASDAQ, Oslo, and Shanghai stock markets. Previous study included a comprehensive content analysis of the aforementioned ESG reports and disclosures in order to build a methodological framework that was reviewed and confirmed by shipping industry experts (Tsatsaronis, et al., 2022b).

The suggested ESG index is composed of three pillars: Environment, Social and Governance. The authors gathered the components that emerged from the content analysis for each pillar, and the factors are presented in Table 1. Furthermore, each component of the ESG framework has precise metrics, which can be found in the Appendix (Tsatsaronis, et al., 2022b).

Table 1: The ESG framework divided into three pillars

Environment Factors	Social Factors	Governance Factors
GHG and Air Emissions	Wellbeing, health and safety	Memberships In Associations and Initiatives
Decarbonizing Operations	Security policy	Business Ethics
Energy efficiency and energy saving	Labour Practices	Compliance and Regulatory Changes
Protection of the marine ecosystem	Speak up reports, Employee Relations	Antitrust
Climate Change	Diversity, Equity & Inclusion	Anti-Bribery and Corruption
Responsible ship recycling	Training, Education & Development	Data Privacy and Cyber Security
Spills and Pollution	Social Engagement	Digitalisation Of Operations
Ballast water management	Drug and Alcohol Policy	Risk Management
Waste and Water Management	Customers-Services and Innovation	Sec ESG Taskforce
Ashore environmental impact	Social Supply Chain	Operational Excellence
	Social Media Activity	Responsible Business Practices
		Stakeholder Communication
		R&D
		Employee Recruitment and Retention

Source: (Tsatsaronis, et al., 2022b)

Following the aforesaid ESG framework, the authors conducted a quality assessment of the existing reporting practices in the shipping sector, analyzing the most recent reports of the 70 listed shipping companies from the year 2022. The quality analysis of the reports includes data mining for the required factors as well as a percentage assessment of the information's sufficiency.

Furthermore, this quality analysis was applied across the various sectors of the sample maritime transport companies. Companies were segmented into sectors based on their characteristics: Bulk, Tanker, Container, Multiple fleets and Port Development companies.

4. Findings

The heterogeneity in how ESG is reported, which was also observed in previous research (Tsatsaronis et al., 2022b), is also found here, with approximately 49 percent of all companies in the sample publishing an ESG report, 29 percent publishing a Sustainability report, and approximately 22 percent not publishing a report at all (Figure 1).

Figure 1: Reporting practice during 2022

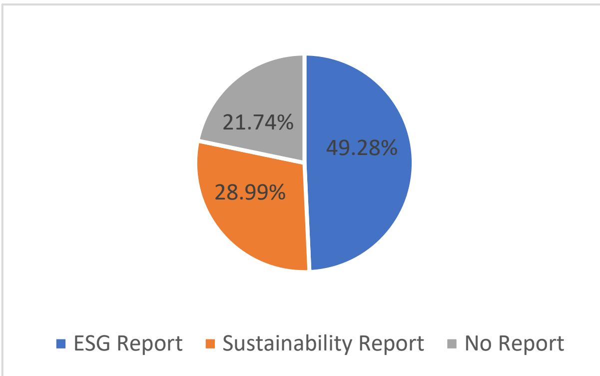
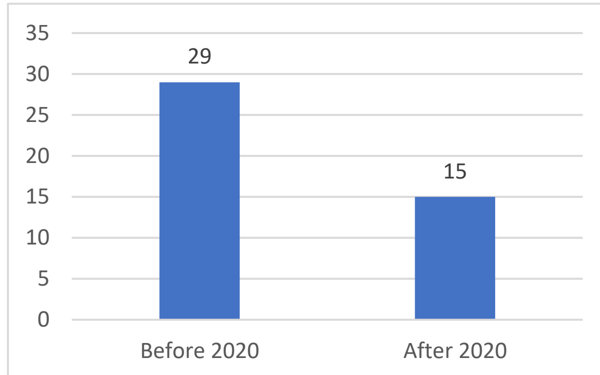


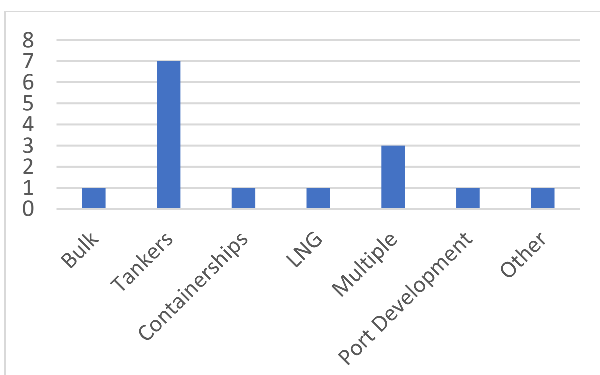
Figure 2: Companies with NO Reporting activity before and after 2020



Source: Authors' elaboration

An intriguing finding of the survey was that by 2020, 29 of the same sample of 70 companies had not published any type of report on ESG, CSR, or sustainability in general. These companies decreased to 15 in the following two years (2021, 2022), clearly demonstrating the trend in the shipping market (Figure 2) which upgrades the ESG to a subject of high importance. It's worth noting that the majority of the aforementioned 15 companies that don't provide an ESG report are in the tanker sector (Figure 3).

Figure 3: Number of companies with NO ESG reporting



Source: Authors' elaboration

Examining the accuracy and the quantity of the data published in the metrics of each component is the next stage of the quality assessment of the existing ESG reporting in shipping. By doing this, we can quantify the extent to which each factor's data requirements are met on a percentage basis. If a factor, for instance, requires four metrics to be defined and the company provides data for three of them, we note that this factor is 75% complete.

Table 2: Descriptive Statistics on the completeness of the (E)nvironment pillar

	GHG and Air Emissions	Decarbonizing Operations	Energy efficiency and energy saving	Protection of the marine ecosystem	Climate Change	Responsible ship recycling	Spills and Pollution	Ballast water management	Waste and Water Management	Ashore environmental impact
Mean	46%	34%	48%	54%	100%	100%	94%	82%	21%	18%
Median	50%	50%	33%	60%	100%	100%	100%	100%	0%	0%
Mode	38%	0%	33%	60%	100%	100%	100%	100%	0%	0%
Standard Deviation	14%	34%	35%	22%	0%	0%	24%	39%	28%	27%
Sample Variance	2%	12%	12%	5%	0%	0%	6%	15%	8%	7%
Range	50%	100%	100%	0.8	0%	0%	100%	100%	100%	100%
Minimum	13%	0%	0%	0%	100%	100%	0%	0%	0%	0%
Maximum	63%	100%	100%	80%	100%	100%	100%	100%	100%	100%

Source: Authors' Elaboration

Figure 4: Arithmetic Mean of the percentage of completeness of the E pillar

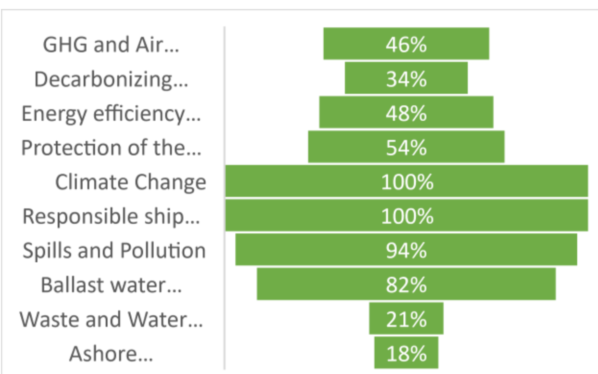
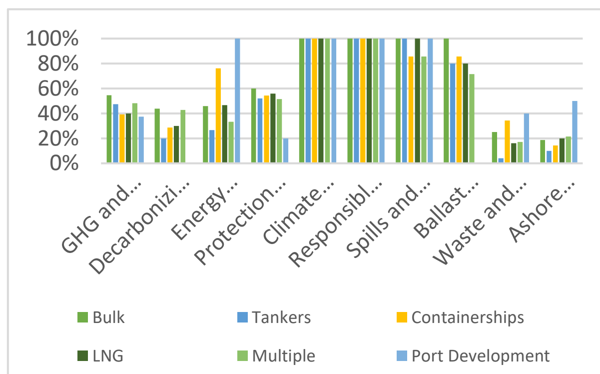


Figure 5: Percentage of completeness of the E pillar by sector



Source: Authors' Elaboration

In the environmental (E) pillar, a vast percentage of companies report and publish data on Climate Change, Responsible Ship Recycling, Spills & Pollution, and Ballast Water Management factors, but only a small percentage of companies publish data on Waste & Water Management and Ashore Environmental Impact (Table 2 & Figure 4-5). An intriguing finding is that of the Energy Efficiency and Energy Saving factor, for which the Port Development sector, unlike shipping companies, supplies all of the necessary metrics (Figure 5), demonstrating the port's critical role in energy transition.

According to the quality of the published data in the existing ESG and/or sustainability reports, Security Policy, Speak-up Reports & Employee Relations, Drug & Alcohol Policy and Customer Services & Innovation are factors at the top of the firms' agenda in the social (S) pillar. In the four factors mentioned above, all companies provide and publish 100% of the appropriate metrics (Table 3).

Training Education & Development, Social Supply Chain, and Social Media Activity, on the other hand, seem to be of minor importance, because the appropriate metrics are covered infrequently or not at all in published reports. These findings are consistent across the different sectors (Table 3, Figure 6-7).

Table 3: Descriptive Statistics on the completeness of the (S)ocial pillar

	Wellbeing, health and safety	*Security policy*	*Labor Practices*	*Speak up reports, Employee Relations*	*Diversity, Equity & Inclusion*	*Training, Education & Development*	*Social Engagement*	*Drug and alcohol policy*	*Customers-Services and Innovation*	*Social supply chain*	*Social Media Activity*
Mean	69%	100%	53%	100%	40%	14%	10%	100%	100%	3%	2%
Median	75%	100%	50%	100%	42%	0%	0%	100%	100%	0%	0%
Mode	75%	100%	50%	100%	50%	0%	0%	100%	100%	0%	0%
Standard Deviation	20%	0%	12%	0%	16%	19%	27%	0%	0%	17%	11%
Sample Variance	4%	0%	1%	0%	3%	4%	7%	0%	0%	3%	1%
Range	88%	0%	50%	0%	67%	80%	100%	0%	0%	100%	67%
Minimum	13%	100%	50%	100%	0%	0%	0%	100%	100%	0%	0%
Maximum	100%	100%	100%	100%	67%	80%	100%	100%	100%	100%	67%

Source: Authors' Elaboration

Figure 6: Arithmetic Mean of the percentage of completeness of the S pillar

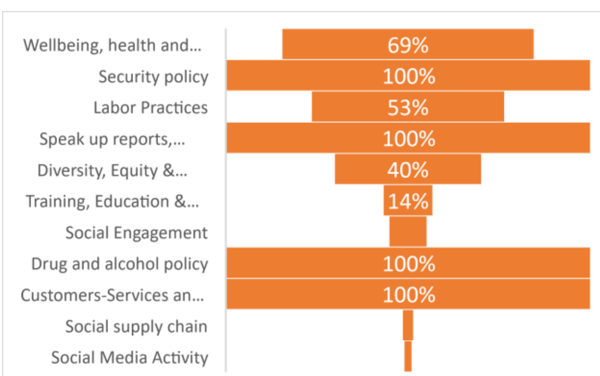
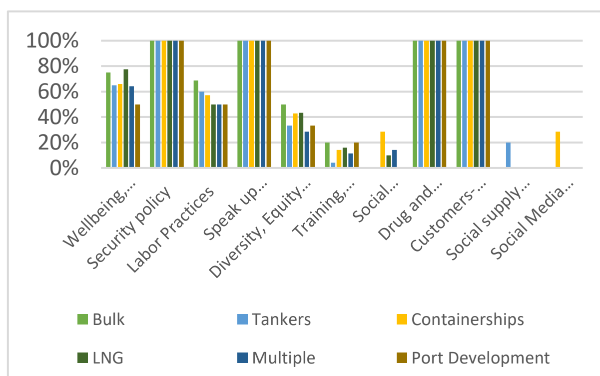


Figure 7: Percentage of completeness of the S pillar by sector



Source: Authors' Elaboration

Table 4: Descriptive Statistics on the completeness of the (G)overnance pillar

	Memberships in Associations and Initiatives	Business Ethics	Compliance and regulatory Changes	Antitrust	Anti-Bribery and Corruption	Data Privacy and Cyber	Digitalisation of operations	Risk Management	SEC ESG Taskforce	Operational Excellence	Responsible Business Practices	Stakeholder Communication	R&D	Employee Recruitment and Retention
Mean	76%	65%	6%	49%	90%	70%	100%	100%	0%	40%	0%	100%	3%	37%
Median	100%	100%	0%	50%	100%	67%	100%	100%	0%	33%	0%	100%	0%	31%
Mode	100%	100%	0%	50%	100%	67%	100%	100%	0%	33%	0%	100%	0%	25%
Standard Deviation	43%	49%	24%	15%	24%	10%	0%	0%	0%	18%	0%	0%	17%	15%
Sample Variance	19%	24%	6%	2%	6%	1%	0%	0%	0%	3%	0%	0%	3%	2%
Range	100%	100%	100%	100%	67%	33%	0%	0%	0%	67%	0%	0%	100%	50%
Minimum	0%	0%	0%	0%	33%	67%	100%	100%	0%	0%	0%	100%	0%	25%
Maximum	100%	100%	100%	100%	100%	100%	100%	100%	0%	67%	0%	100%	100%	75%

Source: Authors' Elaboration

Figure 8: Arithmetic Mean of the percentage of completeness of the G pillar

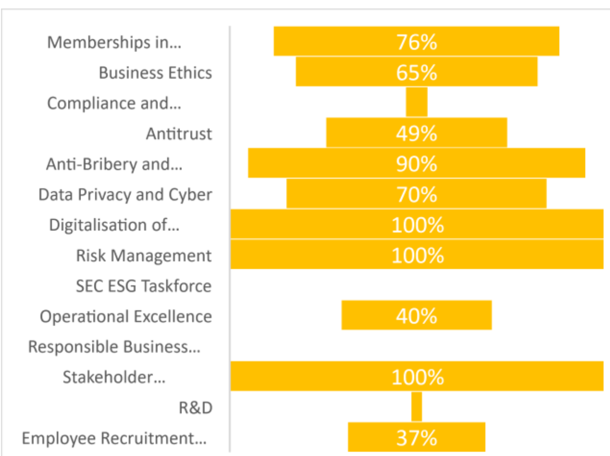
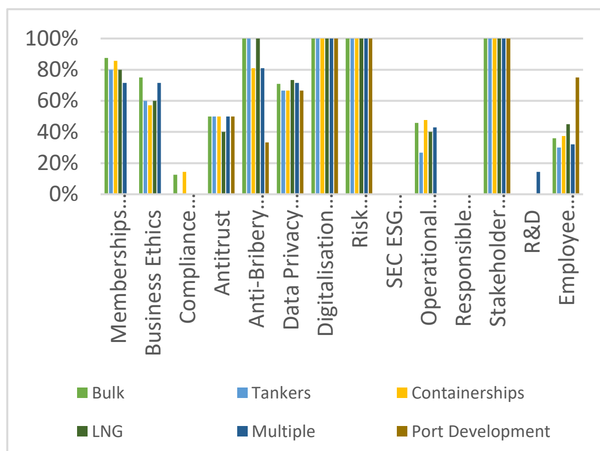


Figure 9: Percentage of completeness of the G pillar by sector



Source: Authors' Elaboration

According to how firms report and publish the necessary metrics, the most important factors for the governance (G) pillar are Digitalization of Operations, Risk Management, Stakeholder Communication, and Anti-Bribery & Corruption. In these factors, data is reported at a rate of more than 90% (Table 4, Figure 8). These findings demonstrate that digitization of the maritime sector, in conjunction with risk management, is a top priority. Furthermore, communication with stakeholders is still a key goal for every company's management.

Except for the Anti-Bribery & Corruption factor, where firms with Multiple fleets, Containers, and Port Development companies present lower quality, the findings in the other sectors are similar (Figure 9).

It is worth noting that important factors, in our opinion, such as the SEC ESG Taskforce, Responsible Business Practices, R&D, and Compliance with Regulatory Changes are not reported at all.

5. Conclusion and Implications for Research/Policy

Despite widespread interest in enhancing the ESG profile of the maritime industry, including charterers, P&I clubs, ports authorities, international organizations and classification societies, there is only intermittent reporting on the ESG profiles of maritime firms. Those reports, till today, are generic, fragmented, and intermittent. They employ several ESG rating sources, as UN SDGs, SASB, GRI etc., which do not apply to shipping. Because UN SDGs were created by an intergovernmental institution, the 17 Sustainable Development Goals of the United Nations are immensely popular and widely acknowledged by the international community. The IFSR Foundation, a non-profit public interest group, established the Sustainability Accounting Standards Board (SASB) as a financial-related disclosure by firms. The GRI standards are another method of ESG grading, with multiple classifications of the criteria, which are likewise general and only classed for industries other than shipping, such as mining, oil and gas, etc.

The aforementioned ESG grading methodologies are completely distinct, incomparable, broad and non-measurable, and so incomplete and inadequate for the shipping sector. Furthermore, they ignore the unique peculiarities of maritime transport operations, which mostly take place in remote areas. As a result, they are complicated and affected by a variety of factors that necessitate special documentation, as they take place on land, sea, and air, include intercultural workers on board and on shore, operate in multiple countries and at sea, and are subject to a variety of regulatory and social systems. Furthermore, the methodologies mentioned above usually refer to dummy components or exhibit overlaps.

All of these gaps in ESG rating and reporting for the maritime transport sector are disruptive, and they have yet to be addressed on a global scale. In prior study (Tsatsaronis et al., 2022b), we developed a methodological framework for a shipping-specific ESG index, allowing shipping firms to readily disclose and assess their performance. The goal of this study is to evaluate the quality of current ESG or sustainability reports using the aforementioned methodological framework.

The quality analysis of the reports includes data mining for the necessary components implied by the methodological framework, as well as a percentage assessment of the information's adequacy. As a consequence of this analysis, several significant findings are retrieved. First, we assess how closely the current state of the sector matches the suggested methodological framework. The results also demonstrate the degree of ESG's critical factors' adaptation. Finally, we comprehend the ESG practices' top priorities for the maritime transport sector and its major subsectors.

One important finding is that, according to the required metrics, only one-third of the factors are reported and published in each of the three pillars - E, S, and G - with a high degree of accuracy. For the Environmental pillar, factors such as Climate Change, Responsible Ship Recycling, Spills & Pollution, and Ballast Water Management are measured, reported and published with high levels of accuracy, and this outcome is evident in any of the six subsectors that are examined (Bulk, Tanker, Container, LNG, Multiple Fleet and Port Development). We can conclude from this that these factors are important to shipping companies and influence their decision-making. The differentiation of the Port Development subsector, which reports in high quality the factor of Energy Efficiency and Energy Saving, is an interesting result as well.

Similar results could be assumed for the Social pillar, with the factors Security Policy, Speak-up Reports & Employee Relations, Drug & Alcohol Policy, and Customer Services & Innovation attracting firm management's attention. Unexpectedly, factors such as Training, Education & Development and Social Supply Chain are of minor importance, owing to the fact that the relevant metrics are covered infrequently or not at all in published reports.

We encountered lesser quality findings in the Governance pillar. Only a few factors were reported and published with great precision. These factors are Digitalization of Operations, Risk Management and Stakeholder Communication. In the Anti-Bribery & Corruption factor, there is a significant difference between the subsectors in the G pillar. Furthermore, critical aspects such as Responsible Business Practices and R&D are not disclosed at all.

This study is unique in that it is the first known attempt to evaluate the quality of ESG reporting of shipping corporations using a well-structured framework designed specifically for shipping (Tsatsaronis, et al., 2022b). The main limitation of our research was that every shipping firm employs various frameworks in order to generate and publish their ESG report. Most of these frameworks (UN SDGs, SASB, GRI, etc.) include idiosyncrasies that other industries may have, that do not apply to shipping. As a result, we decided to use the previously proposed unified methodological framework for ESG reporting and rating from our previous research (Tsatsaronis, et al., 2022b). Receiving tailored information will not only enhance the maritime sector's performance but will also boost access to funding.

Finance is critical for shipping as decarbonization technologies are expensive and without access to “cheap” finance maritime transport sector will not be able to achieve its decarbonization targets. This investment could only be realized through focused and targeted efforts via a reporting mechanism. The policy implications of our current study are framed in this perspective. The implementation of a uniform ESG reporting framework and a composite index will add value from a strategic point of view, serve as a valuable tool for stakeholders' investment decisions, and act as an essential decision mechanism for capital markets.

Acknowledgement

We would like to warmly thank Professor Trevor Heaver for his helpful review and advice.

References

Adam, S. & Simnett, R., 2011. Integrated Reporting: An Opportunity for Australia's Not-for-Profit Sector. *Australian Accounting Review,* 21(3), p. 292–301.

Al Amosh, H., Khatib, S. & Ananzeh, H., 2023. Environmental, social and governance impact on financial performance: evidence from the Levant countries. *Corporate Governance,* 23(3), pp. 493-513.

Brooks, C. & Oikonomou, I., 2018. The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. *The British Accounting Review,* 50(1), pp. 1-15.

Cho, S., Chung, C. & Young, J., 2019. Study on the relationship between CSR and financial performance. *Sustainability,* Volume 11, pp. 343-369.

Coady, L., Strandberg, C. & Ota, Y., 2013. *The role of corporate social responsibility (CSR) in the international shipping sector.* Working Paper: University of British Columbia.

Drobetz, W., Merikas, A., Merika, A. & Tsionas, M., 2014. Corporate social responsibility disclosure: The case of international shipping. *Transportation Research Part E: Logistics and Transportation Review,* Volume 71, pp. 18-44.

Dye, R. A., 1985. Disclosure of nonproprietary information. *Journal of accounting research,* pp. 123-145.

Eccles, R., Ioannou, I. & Serafeim, G., 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science,* 60(11), pp. 2835-2857.

Gavalas, D. & Syriopoulos, T., 2018. Applying the corporate social responsibility to the shipping industry. *International Journal of Accounting and Financial Reporting,* 8(1), pp. 155-169.

Guthrie, J. & Parker, L. D., 1989. Corporate social reporting: a rebuttal of legitimacy theory. *Accounting and business research,* 19(76), pp. 343-352..

Hadj, T. B., 2020. Effects of corporate social responsibility towards stakeholders and environmental management on responsible innovation and competitiveness. *Journal of Cleaner Production,* Volume 250, p. 119490.

International Financial Reporting Standards Foundation, 2021. *IFRS foundation announces international sustainability standards board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements.,* s.l.: IFRS Foundation.

Ioannou, I. & Serafeim, G., 2013. What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies,* 43(9), p. 834–864.

Kolb, C. E., Cox, R. A., Abbatt, J. P. D. & Ammann, M., 2010. An Overview of Current Issues in the Uptake of Atmospheric Trace Gases by Aerosols and Clouds. *Journal of the European Geosciences Union,* Volume 10, p. 10561–10605.

Malik, M., 2015. Value-enhancing Capabilities of CSR: A Brief Review of Contemporary Literature. *Journal of Business Ethics,* 127(2), p. 419–438.

Maltby, J., 2004. Hadfields Ltd: its annual general meetings 1903–1939 and their relevance for contemporary corporate social reporting. *The British Accounting Review,* 36(4), pp. 415-439.

Maroun, W., 2019. Does external assurance contribute to higher quality integrated reports?. *Journal of Accounting and Public Policy,* 38(4), pp. 1-23.

Nyeadi, J. D., Ibrahim, M. & Sare, Y. A., 2018. Corporate social responsibility and financial performance nexus: Empirical evidence from South African listed firms. *Journal of Global Responsibility,* 9(3), pp. 301-328.

Okafor, A., Adeleye, B. N. & Adusei, M., 2021. Corporate social responsibility and financial performance: Evidence from US tech firms. *Journal of Cleaner Production,* Volume 292, p. 126078.

Rodriguez-Fernandez, M., 2016. Social responsibility and financial performance: The role of good corporate governance. *BRQ Business Research Quarterly,* 19(2), pp. 137-151.

Siegel, D. S. & Vitaliano, D. F., 2007. An empirical analysis of the strategic use of corporate social responsibility. *Journal of Economics & Management Strategy,* 16(3), pp. 773-792.

Sustainable Stock Exchanges, 2015. *Sustainable Stock Exchanges Initiative: Model Guidance on Reporting ESG Information to Investors,* s.l.: s.n.

Tsatsaronis, M. et al., 2022a. The impact of Corporate Social Responsibility on corporate financial performance: an empirical study on shipping. *Maritime Policy & Management,* pp. 1-14.

Tsatsaronis, M., Syriopoulos, T., Karamperidis, S. & Boura, G., 2022b. *ESG Rating and Reporting: The Case of Shipping.* Busan, S. Korea, IAME.

Ullman, A. H., 1985. Data in Search of a Theory: A Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of US Firms. *Academy of Management Review,* 10(3), p. 540557.

United Nations, 2020. *The sustainable development goals report 2020,* s.l.: United Nations.

Wu, L. et al., 2020. The impact of CSR and financial distress on financial performance: Evidence from Chinese listed companies of the manufacturing industry. *Sustainability,* 12(17), pp. 67-99.