

# BOARD OF DIRECTORS AND SUSTAINABILITY PERFORMANCE IN THE AEROSPACE INDUSTRY

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## Abstract

This study aims to investigate the role of the board of directors in promoting sustainability in the aerospace industry. Aerospace companies are facing substantial challenges stemming from sustainability-related issues like climate change and environmental regulations, underscoring the urgency of prioritizing sustainability within the corporate agenda. This study adds valuable insights to the ongoing discourse regarding the impact of the board of directors on corporate sustainability performance. By examining a sample comprising firms within the aerospace industry listed on the STOXX Europe 600 index from 2015 to 2022, it aims to elucidate the impact of various board characteristics on their sustainability results. Overall, the insights of this study underscore the critical role of board attributes in shaping Environmental, Social, and Governance (ESG) performance outcomes. By promoting gender diversity, fostering independent oversight, and mitigating Chief Executive Officer (CEO) duality, aerospace organizations can effectively enhance their ESG performance and better position themselves to fulfill their corporate social responsibilities.

## 1. INTRODUCTION

In recent years, sustainability has gained significant attention from policymakers, investors, consumers, and other stakeholders, prompting companies to integrate sustainability initiatives into their strategic decisions. While strong financial performance remains crucial for growth, evidence suggests that corporate social responsibility (CSR) initiatives can offer substantial long-term benefits. Regulatory focus on sustainability has led to directives and guidelines encouraging firms to prioritize sustainable practices. The European Union (EU), in particular, has enacted laws like the Corporate Sustainability Due Diligence Directive (CSDDD), which compels firms to adopt sustainable practices and introduces legal liability for environmental and human rights violations within their supply chains.

In response to the growing emphasis on sustainability, companies are revising their governance structures to align with these objectives. Boards of directors are increasingly expected to take a proactive approach to sustainability, driving strategic initiatives that create long-term value while minimizing negative impacts on the environment and society.

The aerospace industry faces significant sustainability challenges. Due to its environmental impact, regulatory bodies are imposing stricter regulations on the sector, and stakeholders demand environmental responsibility and social accountability from aerospace companies. Consequently, aerospace firms must address ESG issues through sustainability-oriented strategic decisions and actions.

This research aims to examine the influence of boards of directors in promoting sustainability within the aerospace industry. Using a sample of aerospace firms listed on the STOXX Europe 600 index from 2015 to 2022, it investigates which board characteristics contribute to sustainability performance in this sector.

## 2. LITERATURE REVIEW

Extensive literature exists on the relationship between boards of directors and sustainability (Jamali et al., 2008; Jo & Harjoto, 2012). According to stakeholder theory, which emphasizes maintaining stakeholder satisfaction and legitimacy (Freeman, 1984), boards play a crucial role in enhancing a company's reputation by engaging with stakeholders. This interaction fosters understanding and trust (Michelon & Parbonetti, 2012).

Several studies have explored how board characteristics influence corporate sustainability performance (Orazalin & Mahmood, 2021). Research generally agrees that certain board characteristics enhance sustainability performance.

For instance, board gender diversity is linked to higher sustainability performance, as female directors often focus more on sustainability issues (Valls Martínez et al., 2019; Nielsen & Huse, 2010; Cambrea et al., 2023). The size of the board also plays a role, with larger boards offering diverse skills, knowledge, and expertise, leading to a more thorough consideration of sustainability issues and better alignment with stakeholder interests (Radu et al., 2022).

As reported by previous studies, board independence is conducive to higher sustainability performance (Hussain et al., 2018). In fact, the role of independent board members, who are external to the organization, is to monitor the conduct of executive directors, thereby preventing potential actions that diverge from the social good prioritizing personal objectives, and protecting stakeholders' interests.

The presence of non-executive board members is associated with increased sustainability performance, as they convey legitimacy to corporations (Pfeffer & Salancik, 1978). Their external viewpoint enables the board to gain deeper insights into stakeholders' needs and expectations, thereby playing a pivotal role in guiding the company's conduct.

Lastly, prior research found that CEO Chairman duality is associated with diminished sustainability performance (Hussain et al., 2018). When the roles of CEO and Chairman of the board are assigned to the same person, this limits the board's ability to control managerial opportunism, resulting in weak monitoring and therefore suggesting a separation between the CEO and the Chairman roles to achieve higher sustainability outcomes (Naciti, 2019).

In a sustainability-sensitive industry, such as the aerospace industry, the investigation of corporate governance and sustainability remains relatively limited. The existing literature predominantly focuses on examining sustainability reporting (Cowper-Smith & de Grosbois, 2011; Kılıç et al., 2019). This research contributes to discerning whether sustainability reporting promotes corporate governance practices by addressing information asymmetry and agency conflicts, as well as enhancing legitimacy within aerospace companies (Karaman et al., 2018).

From a corporate governance standpoint, there is a scarcity of studies that delve into the relationship between board characteristics and sustainability within the aerospace industry. For example, a recent study by Gangi et al. (2022) explores the extent to which board attributes encourage engagement in corporate environmental responsibility, under the premise that effective board characteristics serve as the primary internal governance mechanism to deter managerial opportunism and the implementation of environmentally irresponsible policies (Naciti, 2019).

Therefore, based on the existing literature, the following hypotheses are proposed for the aerospace industry:

*H1: Board gender diversity positively impacts sustainability performance.*

*H2: Board size positively impacts sustainability performance.*

*H3: Independent board members positively impact sustainability performance.*

*H4: Non-executive board members positively impact sustainability performance.*

*H5: CEO Chairman duality negatively impacts sustainability performance.*

### 3. METHODOLOGY

The analysis sample includes aerospace companies listed on the STOXX Europe 600 index from 2015 to 2022. Data collection involved board-level and firm-level data, including financial and non-financial performance, from the LSEG Refinitiv database.

The dependent variable is *Corporate sustainability performance*, measured by the ESG Score. For robustness checks, the Environmental Pillar Score and Social Pillar Score were also used.

As explanatory variables, several board characteristics have been included: *Board gender diversity*, *Board size*, *Independent board members*, *Non-executive board members*, and *CEO Chairman duality*.

Finally, consistent with prior studies, a set of control variables has been incorporated: *Firm size*, *Leverage*, and *Profitability (ROA)*.

A quantitative research approach and longitudinal research design were used. The Hausman test determined that random effects were more suitable for the regression models. Thus, panel data ordinary least squares (OLS) regression models with firm-level random effects were used to test the hypotheses.

### 4. RESULTS

Table 1 illustrates the relationship between board characteristics and corporate sustainability performance. In Model 1, findings reveal that board gender diversity significantly predicts ESG performance, supporting *H1*. A greater representation of female directors on the board is associated with enhanced ESG performance, highlighting the importance of gender diversity in driving sustainable business practices in aerospace companies. However, the coefficient for board size is negative and not statistically significant, providing no support for *H4*, possibly due to less effective decision-making in larger boards. The presence of independent and non-executive board members is positively correlated with ESG performance, supporting *H2* and *H3*. This indicates that boards with independent oversight are better equipped to address ESG issues, enhancing overall sustainability. The coefficient for

CEO-Chairman duality is negative and significant, supporting *H5*, suggesting that combining CEO and Chairman roles can detrimentally affect ESG performance due to potential conflicts of interest and a lack of checks and balances.

Model 2 explores the relationship between board characteristics and environmental performance, revealing that a higher proportion of independent and non-executive directors is associated with stronger environmental performance. This underscores the role of board composition in driving environmental sustainability in aerospace firms.

Model 3 examines the relationship between board characteristics and social performance, showing the importance of gender diversity in enhancing social responsibility. Similarly, independent and non-executive directors are positively associated with social performance, while CEO-Chairman duality negatively impacts social performance, suggesting potential conflicts of interest and reduced independent oversight hinder the organization’s ability to address social concerns effectively.

**Table 1.** Regression models

| <i>Variables</i>                   | <i>ESG Score</i>        | <i>Environmental Pillar Score</i> | <i>Social Pillar Score</i> |
|------------------------------------|-------------------------|-----------------------------------|----------------------------|
|                                    | <i>Model 1</i>          | <i>Model 2</i>                    | <i>Model 3</i>             |
| <i>Board gender diversity</i>      | 0.245**<br>(0.111)      | 0.162<br>(0.145)                  | 0.409***<br>(0.154)        |
| <i>Board size</i>                  | -0.459<br>(0.683)       | -0.765<br>(1.006)                 | -0.00793<br>(0.784)        |
| <i>Independent board members</i>   | 0.243***<br>(0.0775)    | 0.315**<br>(0.122)                | 0.253***<br>(0.0834)       |
| <i>Non-executive board members</i> | 0.327***<br>(0.124)     | 0.522***<br>(0.198)               | 0.473***<br>(0.135)        |
| <i>CEO Chairman duality</i>        | -15.79***<br>(4.524)    | -2.092<br>(6.812)                 | -10.57**<br>(5.377)        |
| <i>Firm size</i>                   | 7.26e-05*<br>(4.23e-05) | 0.000126*<br>(7.25e-05)           | 4.75e-05<br>(4.48e-05)     |
| <i>Leverage</i>                    | 0.00824<br>(0.0110)     | 0.0174<br>(0.0144)                | -0.000173<br>(0.0150)      |
| <i>ROA</i>                         | -0.257*<br>(0.131)      | -0.0160<br>(0.167)                | -0.645***<br>(0.190)       |
| Constant                           | 20.48**<br>(10.32)      | 2.964<br>(17.20)                  | 3.482<br>(10.42)           |
| Observations                       | 96                      | 96                                | 96                         |

Note: Standard errors are in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , and \*  $p < 0.1$ .

## 5. CONCLUSION

This study explores the role of boards of directors in advancing sustainability within the aerospace industry. It aims to broaden the theoretical understanding of the relationship between board

characteristics and firms' sustainability outcomes, providing governance insights for promoting environmental and social responsibility in aerospace companies.

The research contributes significantly to both theory and practice. It enhances corporate governance literature by investigating how board characteristics can foster sustainability in aerospace companies. The study also urges aerospace firms to improve board composition to boost sustainability performance. This includes advocating for increased female representation, bolstering independent and non-executive board members, and addressing CEO duality.

Despite its contributions, the study has limitations. It is based on data from European aerospace firms only. Future research should explore the aerospace industry in other regions, such as North America, and incorporate additional board-level variables to further elucidate the impact of board characteristics on corporate sustainability performance.

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