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# Drivers and Value-pertinence of CSR in Africa: The Case of African Logistics Sector

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## ABSTRACT

Following the limited literature on CSR in the logistics sector in Africa, this study is conducted to explore the relevance of CSR performance in the logistics sector, focusing on the firm's board characteristics and ownership structure. The purpose of the study is achieved by measuring CSR with composite ESG (Environmental, Social and Governance) score and other three sub-dimensions from the period of 2011-2018. The study used fixed-effect regression analysis and OLS regression to test the hypotheses and robustness. Some of the results fall in line with the hypotheses; therefore, they are accepted, the contradictory ones are rejected. Based on the results, conclusions are drawn, and recommendations are made on how logistics firms in Africa could structure their board rooms to benefit CSR, thus increasing its competitiveness and value. According to the findings, board gender diversity is positively related to overall corporate social responsibility and governance performance. Firms with sustainability committees have higher CSR performance than those that do not. Firms with diffused ownership structures show more outstanding performance in the Social Pillar of CSR. The analysis result showed a limited relationship between board independence and governance performance. There was a surprising result as CSR performance negatively correlated with the firm's value. The results stipulate that the percentage of women's inclusion in the company's board of directors and corporate social responsibility committees is essential in achieving CSR goals. However, the negative relationship between board characteristics and the Environmental Pillar of CSR performance is quite surprising and raises various questions that need further research. The research presents significant contributions in the academic, business, and policy fields. The academy domain challenges the conventional way of conducting CSR and firm value analysis. The business domain provides an overview of how a firm should structure its board to achieve a higher CSR score that transcends its value. Finally, in the policy domain, recommendations are made to the regulatory institutions of the logistics sector in Africa to enforce operational environmental standards.

## Keywords

**Keywords:** Africa, Board characteristics, Corporate social responsibility, Drivers, Firm value, Logistics sector.

## 1. Introduction

### 1.1. Research Background

Over the past few decades, serious environmental problems, including the overuse of natural resources, the air, water, and noise pollution, and the rapid disappearance of rainforests, have posed threats to the quality of life across the world (Wu and Dunn, 1995). Logistics companies have a crucial role in the supply chain's social and environmental initiatives because they connect companies in the network (Piecyk and Björklund, 2015). Their activities depend heavily on fossil fuel and energy consumption resulting in high carbon emissions. There is no doubt that sustainable logistics is crucial for achieving economic growth and decreasing negative social and environmental impacts, although logistics performance has conventionally been oriented towards cost, time, and accuracy. Logistics companies are now subject to intense pressure from governments and other stakeholders (i.e., customers) regarding their compliance with responsible practices (Shaw et al., 2010). As concerns about sustainable and green logistics increase, the factors impacting corporate social responsibility (CSR) efforts in the logistics sector gain more importance. External (i.e., the institutional environment) and internal (i.e., the board of directors) mechanisms can influence CSR strategies, policies, and efforts. The board of directors can have a significant role in promoting a company to balance financial and non-financial goals, managing stakeholder interests, providing negotiation between diverse stakeholder groups with conflicting demands, and improving corporate CSR performance (Hussain et al., 2018). In that context, board composition and structure are essential factors in corporate decision-making related to environmental and social issues. Although there is significant progress towards understanding the link between board structure and CSR performance, no prior study has yet investigated that link in the logistics sector nonetheless in Africa. Academic and professional research works on logistics have appeared in the literature since the late 1980s. However, the logistics research debate in academic journals has been dominated by issues related to North America, Europe, and some emerging Asian countries (Soni and Kodali, 2012), whereas largely overlooked issues regarding logistics research in Africa. Consequently, this lack of evenly spread international representation of research data is likely to adversely affect current knowledge and understanding of various phenomena within logistics management (Svensson et al., 2008). Hence, an analysis of studies in Africa is needed to see how CSR by logistics companies in Africa differs regarding understanding and implementation. Doing so helps the researchers to identify the drivers and value-relevance of corporate social responsibility performance in the logistics sector by focusing on board characteristics and ownership structure in the African context. This analysis can generate insights for other logistics and CSR research and inform policy. Such endeavor is becoming increasingly important since several African countries are becoming outsourcing hubs for global supply chains of apparel, automobile, and electronic consumer goods (African Economic Outlook, 2015). Africa is one of the most dynamic regions globally from an economic

perspective. (The World Bank, 2017). An analysis by The Economist (2016) highlights the potential of the African continent by showing that six of the world's ten fastest-growing economies are in Sub-Saharan Africa. African countries have endured endless difficulties and instabilities due to political, social, and technological changes. Many social issues stem from the lack of appropriate CSR practices from companies operating within the continent. The logistics sector contributes massively to environmental issues; therefore, investigating logistics firms is relevant in context. Several scholarly papers have focused on logistics and SCM in African countries from either a conceptual or an empirical perspective over the past decades. Such research works have generated insights that contribute to logistics knowledge and help illustrate the specific characteristics of the African countries, including the political, social, and cultural environment. The motivation behind the realization of the current study is to address this gap in the literature by analyzing the relationship between a set of board characteristics and CSR performance in the logistics context. CSR involvement may help companies establish strong relations with key stakeholders, mitigate firm-specific risks (i.e., the risk of fines), enhance their brand value, and improve their operational and economic performance. By contrast, irresponsible corporate practice can damage the corporate reputation, cause future customers, and reduce corporate profits and stock market returns. Many papers have studied the relationship between CSR performance and firm value in the past, but not in the African context. This study compiled data from 100 logistics multinationals with their subsidiaries in the African region. The data was collected from the Thomson Reuters (TR) EIKON database for 2011–18. The study adopted a Fixed Effects panel analysis to test the hypothesized relationships

## **1.2 Research Problem Statement**

Over the past few decades, serious environmental problems, including the overuse of natural resources and the rapid disappearance of rainforests, have posed threats to the quality of life across the world (Wu and Dunn, 1995). Logistics companies have a crucial role in the supply chain's social and environmental initiatives because they connect companies in the network (Piecyk and Björklund, 2015). The activities of the logistics firms depend heavily on fossil fuel and energy consumption resulting in high carbon emissions. There is no doubt that sustainable logistics is crucial for achieving economic growth and decreasing negative social and environmental impacts. Although logistics performance has conventionally been oriented towards cost, time, and accuracy, logistics companies are now subject to intense pressure from governments and other stakeholders (i.e., customers) regarding their compliance with responsible practices (Shaw et al., 2010). As concerns about sustainable and green logistics increase, the factors impacting corporate social responsibility (CSR) efforts in the logistics sector in Africa gain more importance.

## **1.3. Research Objectives**

The study seeks to offer valuable insights to the understanding of the link between CSR performance and firm value,

Specific objectives

1. To provide valuable evidence to the literature by investigating the relationship between CSR performance and firm financial performance focusing on the African logistics sector.
2. Consequently, this study will explore whether board characteristics and ownership structure are associated with the adoption and implementation of CSR practices by logistics companies.
3. Further, it analyzes the impact of CSR performance on firm value in the logistics sector.

#### **1.4 Research Questions**

the following research questions guide the research

1. What are the board-level drivers of CSR performance in the logistics sector?
2. What is the association between CSR performance and firm value in the logistics sector?

#### **1.5 Significance of the Study**

The current paper provides contributions to literature and knowledge in several ways. First, while the logistics discipline has mainly paid attention to legal and economic considerations in Africa, it has paid limited attention to CSR issues. This study extends past research by examining CSR in the logistics sector in the African sample, which reinforces its findings' generalizability for African firms. Second, until now, an extensive part of CSR research in the logistics discipline has examined specific logistics processes such as sustainable transportation, sustainable warehousing, sustainable purchasing, reverse logistics and has studied environmental aspects as a subset of sustainability performance. However, this paper adopts a more holistic approach in measuring CSR performance and utilizes a composite ecological, social, and governance (ESG) score and all three pillars of ESG in the logistics sector, without focusing on a particular aspect (i.e., environment) or a specific process. As adopted in this study, ESG covers various indicators related to the environment, social responsibility, and corporate governance. Third, while prior studies on the link between corporate governance structure and CSR have primarily focused on reporting practices, a limited number of studies have investigated the influence of corporate governance on actual CSR performance. This paper contributes to the corporate governance research by analyzing the effect of board structure on logistics companies' actual CSR performance using the ESG score as a proxy for this purpose. Fourth, to the best of the authors' knowledge, this is one of the first attempts to examine the association between the board

characteristics and CSR performance in Africa regarding the logistics sector. Fifth, this study analyzes the association between a specific committee on sustainability issues (i.e., CSR or sustainability committee) and CSR performance which the previous literature has rarely examined.

## Chapter Two

### 2. 1 Literature Review

#### 2.1.1 Environmental sustainability and firm value

Jacob et al. (2010) used corporate environmental initiatives (CEIs) and environmental awards and certifications (EACs) to analyze the shareholder value effects of environmental performance by measuring the stock market reaction (abnormal returns) associated with announcements of ecological performance. In line with Skapinker (2008), there is a question on the proactive sustainability initiatives of Unilever and Walmart on the persisting controversy on whether these initiatives are just window dressing. Although both companies have environmental initiatives widely accepted by the general public, there are still concerns about whether such initiatives attract returns on alternative investment opportunities. Basically, what is the possibility of a firm increasing shareholder value using an improved environmental performance initiative? The issue continues to receive attention in the press (Elgin, 2007; Thomson, 2006). Proponents of CEIs argue that there are numerous benefits from CEIs, some of which come from direct economic use and improved market value and return on investment. Benefits include energy, raw material, abatement cost reductions, and intangible advantages of improved consumer perception, community relations, among others. However, there are doubts due to the perceived high costs of improving environmental performance and the uncertain and longer-term payoffs from such efforts (Engardio et al., 2007).

Also, scholars have studied the relationship between environmental performance and financial performance in theory and empirically. Friedman (1970) posits that environmental expenses may harm firm performance and value if it goes beyond the regulatory compliance standard. However, Barnett and Salomon (2006) point a contrast; good social performance attracts resources to the firm in the form of quality employees and expanded market opportunities. In addition, proactive environmental initiatives create more valuable assets and become a competitive advantage. Yet, Walley and Whitehead (1994) proposed otherwise. They argued that environmental efforts barely improve firm performance.

Environmental performance has gained a dominant impression of improving a company's financial performance. Yet, empirical results show otherwise by showing a complex relationship between the two

variables based on portfolio, regression, and event studies (King and Lenox, 2001; Guenster et al., 2006). Portfolio analysis determines whether the return on a portfolio of firms with good environmental performance outperforms the market. Regression studies are used to determine the long-term relationships between environmental performance and accounting-based measures of firm performance. In these approaches, a careful match of a firm is needed to calculate and transition from a regular financial performance within the study duration. These studies are usually conducted longer; thus, they become sensitive to the host of possible explanatory factors of firm performance.

Event studies use environmental performance announcements or publications to estimate firm value. Based on statistics, the publication of environmental performance will show a casual link with market reaction. A few scholars have used this approach to determine ecological events' positive and negative outcomes, including environmental awards and crises, and lawsuits. Klassen and McLaughlin (1996) analyzed the market reaction to independent, third-party awards for environmental performance. Using a 140-sample announcement from 1986–1991, they established that awards on environmental performances are statistically significant to the average market reaction of about 0.60%. Gilley et al. (2000) researched the market reaction to ecological activities and products, using 71 samples from *The Wall Street Journal* from 1983 to 1996; they confirmed that process-related reports result in a statistically significant average market reaction of about 0.40%, but the market does not react significantly to product-related announcements.

A firm can achieve revenue growth through gains in existing markets or access to new markets. According to Klassen and McLaughlin (1996), reputational benefits of positive environmental performance can accrue profit from the existing market. They argue that a company's ability to publicize the reduced environmental impact of its product and services and establish Environmental Management Standards (EMS) improves its reputation. Dowell et al. (2000) also noted that stringent environmental management standards could positively affect a firm's reputation. Corbett and Muthulingam (2008) opined that a primary reason companies adopt the Leadership in Energy, and Environmental Design (LEED) method for building construction is to signal environmental concern to regulators, employees, and the public. Strategic philanthropy directed towards ecological issues improves brand recognition and reputation (Seifert et al., 2003).

Improved environmental initiatives give market diversity. The increasing environmental concerns lead to new markets, increasing the desire for eco-friendly products. Examples include; high-fashion clothing produced with organic materials to hybrid vehicles and data centers that consume less energy.

In addition to the impact on revenues, environmental performance reduces cost through waste reduction, material consumption, energy inputs, and several product components that benefit Both inbound and outbound logistics. Other cost avoidance benefits of effective environmental management include mitigation of risks of

losses from crises or regulation and preventing expenses associated with lawsuits and legal settlements (Karpoff et al., 2005). Dowell et al. (2000) opined that strict environmental standards reduce the cost to develop, maintain, and enforce policies and procedures, thus allowing easy transfer of accrued knowledge and increasing employee morale and productivity. Similarly, Von-paumgarten (2003) argues that LEED-certified buildings can improve productivity and retention. CEI announcements represent self-disclosed information by the firm without independent verification of the initiatives. EACs, however, are the result of third-party reviews of environmental performance. In the quality management context, the positive impact of third-party assessments on financial performance is documented by Hendricks and Singhal (2003) for awards and Corbett et al. (2005) for ISO 9001 certification. Klassen and McLaughlin (1996) found out that announcements of environmental awards are associated with a significant positive market reaction. Melnyk et al. (2003) used surveys to explain that financial performance and environmental performances are related to the level of formality of the firm's EMS, with an ISO 14001 certified EMS correlated with the best overall performance.

### 2.1.2 Social performance and firm value

Over the last decade, corporate social responsibility (CSR) has become a fundamental aspect of business activity. Many firms devote a section of their annual reports and company websites to CSR efforts, demonstrating how vital such activities are to them. However, do such actions add value to the firm's shareholders, or do they place too much emphasis on other stakeholders, decreasing the firm's worth? Despite extensive research on the subject, researchers could form few definite conclusions. Even though there appears to be increasing evidence that CSR activities are linked to profitability and business value, a substantial number of studies show the contrary. As a result, the normative implications of corporate social responsibility studies remain a mystery. Because of methodological issues, the relationship between CSR efforts and corporate value is uncertain (Margolis and Walsh 2001) and, in particular, model misspecification. Maybe the lack of understanding about the channels through which CSR affects firm value is even more critical. Most theoretical models assume a direct link between CSR and a firm's value. According to Barnett (2007), the effect of CSR on firm value should reflect the ability of CSR to influence the stakeholders of the firm.

A necessary condition for CSR to manipulate consumer behavior and affect firm value is consumer awareness of CSR activities. Sometimes, consumers can be fully aware of a firm's CSR activities, yet they might be irresponsive if CSR activities are not aligned with its reputation as a responsible citizen (Du et al., 2010). Therefore, to establish how CSR affects firm value, it is crucial to define the activities that encompass CSR.



With extensive literature on the topic, there hasn't been any consensus on the activities regarded as CSR activities and those which are not.

For this reason, Baron (2001) argued that "Corporate social responsibility is an ill- and incompletely defined concept." Practitioners of the concept use the World Business Council for Sustainable Development definition.

This definition encompasses the general work on CSR, such as the community, the environment, human rights, and the treatment of employees. As such, this definition is consistent with Dahlsrud (2008), who reviewed the multidimensional notion of CSR and various definitions of CSR to establish that stakeholder and social dimensions receive the same attention based on frequency counts.

The inclusion of stakeholders doesn't spark controversy, thanks to the boundary between stakeholder management and CSR. For example, Jensen (2001) argued that anyone a potential benefactor of the firm's engagement is a stakeholder. These engagements include issues related to human rights, the environment, and the community, as well as elements that others would consider more "social." This definition is more or less similar to Freeman's (1984) definition of a stakeholder as "any group or individual who is involved in the achievement of an organization's purpose." However, Freeman (1984) explicitly considered groups and individuals that can be negatively affected by the firm's actions. Based on this view, all CSR activities fall under the umbrella of stakeholder theory, but Harrison et al. (2010) distinguished between stakeholder orientation versus a focus on social issues and considered only the last activities as CSR.

An extensive literature argues that CSR activities can increase profitability and enhance firm value. Empirical studies concerning the relationship between the value of the firm and CSR activities go both ways, with many reporting a negative relation. Research by Penn Schoen Berland (2010) suggests that consumers pay higher prices for products and services from firms with higher CSR engagement; in other instances, they will more likely purchase goods from firms that are more socially responsible. Berland's assertion solidifies the findings from Baron's (2001) original insight, which states that "a practice labeled as socially accountable increases the demand for the firm's product. CSR is regarded as a strategic investment chosen to maximize firm value in this context. The second fact is that consumers are often unaware of a firm's CSR activities (Sen and Bhattacharya 2001). There is a clear contrast between these two facts, such that; a lack of customer awareness of a firm's CSR initiatives limits their ability to respond to these initiatives. As Siegel (2001) established, businesses must fully inform customers and potential customers of CSR characteristics to aid the successful implementation of CSR differentiation. They also predicted a positive correlation between advertising intensity and CSR provision. All the listed authors suggested that companies increase CSR awareness if CSR is a profitable strategic investment. The idea that advertising provides information about the firm stems from Nelson (1974) and (Bagwell 2007). More recently, relating advertising to CSR, Siegel (2001) suggested that

CSR-related publications and media coverage may increase consumer awareness of CSR. This awareness increases the demand for socially responsible behavior and the returns to engaging in such behavior. They did not, however, formally model or test this conjecture. Schuler and Cording (2006) also argued that information intensity is one of the critical elements in the CSR–value relation. Their argument was based on disseminating CSR information by the firm or other parties through advertising, but advertising does not directly publish its CSR activities. Schuler and Cording's (2006) argument applies only to firms with specific CSR strengths.

Schuler and Cording (2006) argued that the intensity of positive CSR information is more vigorous for firms with an excellent reputation than those with a poor reputation. If there isn't any congruency between a firm's current actions and its reputation, customers will not respond positively to CSR information because customer response to CSR activities is path-dependent. A move that may yield positive returns for one firm may bring negative returns depending on the customer's prior notion about the firm's intentions. An excellent previous reputation enhances the positive effect of CSR communication. In sum, primary literature suggests that CSR is a product attribute valued by consumers, which they can only appreciate if they are informed about it. Advertising spending increases public awareness about the firm and feeds customers' curiosity about the firm's CSR activities. The scrutiny benefits companies with CSR strengths and harms companies with CSR concerns. In a simple corporate philanthropy model where companies use CSR to indicate product quality, CSR activities are more beneficial in more competitive industries with high advertising intensity. Such assertion allows profit-oriented firms to take the opportunity to produce lower-quality products. However, firms that care about product quality and externalities seize the chance to signal their orientation towards the high-quality product by engaging in CSR activities.

From the consumer point of view, only firms that care about product quality will invest in CSR activities because profit-oriented firms see these CSR activities as too expensive and refrain from them. Thus, firms that engage in CSR opportunities easily identify themselves as the company with the quality product and services. Fisman et al. (2008) argued that CSR activities are more beneficial in competitive industries and industries with more opportunities to signal quality. They employed industry advertising intensity, measured as industry-median advertising to sales, as a proxy for the ability to signal quality. The empirical work of Fisman et al. (2008) solidifies their "consumer awareness" argument establishing that CSR activities enhance the firm's value in industries with high advertising intensity. They also stated that the reward from CSR is more substantial in a more competitive sector where there is more competition and the need for product quality signals. Consistent with Fisman et al. (2008), firms in more competitive industries are more likely to engage in CSR, and Siegel and Vitaliano (2007) showed that firms involved in the sales of experience goods (for which determining product quality is more complex) have higher CSR involvement. However, none of these researchers studied the relationship between CSR and firm value. Moreover, companies in competitive

industries are more likely to engage in CSR, consistent with the consumer awareness argument. CSR may be a tool for product differentiation only if CSR can be considered a product attribute.

### 2.1.3 Corporate governance and firm value

Corporate governance affects the firm in two ways; the first is the multiplication of stock price since investors anticipate minor cash flow diversion. Thus, the higher percentage of the firm's profit will return to them as interest or dividends (La Porta et al., 1998). Second is the ability of good corporate governance to reduce the expected return on equity to reflect shareholders' monitoring and auditing costs, leading to lower costs of capital (Shleifer and Vishny, 1997). The argument of whether governance has a positive effect on a firm's value persists because the cost of implementation outweighs the benefit (Bruno and Claessens, 2010), yet, a good number of prior studies show a positive relationship between corporate governance and firm value. However, most of them deal with a specific area of corporate governance such as; ownership and board structure, the other half of the literature deals with individual corporate governance, which attributes to corporate governance indices. According to studies made in the USA by (Bebchuk et al., 2009), the value-relevance of such governance indices aggregate an astounding number of firm-level governance attributes. Few studies have been conducted on the valuation impact of firm-level corporate governance practices in a global context. The credibility of some of these studies has been questioned due to data availability and credibility.

A new approach to the research on corporate governance and firm value has emerged due to the availability of detailed information on firm-level corporate governance from all around the world. Aggarwal et al. (2009), for example, used data from Risk Metrics (formerly Institutional Shareholder Services (ISS)) to make a comparison between the governance of non-U.S. firms with a matched set of U.S. firms. He established that the value of non-US firms deteriorates as their corporate governance index decreases compared to the governance index of matching U.S. firms. Bruno and Claessens (2010) went on the same route and documented that the value of a firm strongly depends on both country-level shareholder protection laws and firm-level corporate governance attributes. Chhaochharia and Laeven (2009) also adopted the ISS database to distinguish between governance attributes that are legally required and attributes that are adopted voluntarily. The result showed that firms voluntarily adopt a more rigorous corporate governance structure are rewarded with higher value.

## 2.2 Theoretical Framework and Hypotheses

To understand the correlation between corporate governance and sustainability, one has to study agency theory and stakeholder theory as these are the two theories that best explain the link Freeman (, 1984). Agency theory is such that companies always protect investors from reducing agency conflicts using control mechanisms,

such as the corporate governance structures. Stakeholder theory posits that the improvement of corporate legitimacy lies in the ability of the company to establish strong relations with stakeholders to maintain and improve corporate legitimacy. The stakeholder theory always gives the impression that the firm is well-managed and stakeholder interest is always a top priority making CSR reporting a crucial mechanism to satisfy stakeholder expectations. Based on agency and stakeholder theories, this study researches the relationship between a set of corporate governance characteristics and ownership structure and CSR performance in the logistics sector.

### 2.2.1. Board size

The size of the board is assumed to be one of the main drivers of its effectiveness. A sizeable corporate board is viewed as negatively influencing the board's functioning. It slows decision-making and limits the board's effectiveness (Hussain et al., 2018). In contrast, another literature argues that larger panels enhance decision-making and better manage conflicts between owners and shareholders (Allegrini and Greco, 2013). Therefore, including more directors may control the discretionary behaviors of managers, improve the board's monitoring capacity, and enhance value-creation activities. There is no link in the current literature regarding the relationship between board size and sustainability performance. Although Tamimi and Sebastianelli (2017) established a positive association between board size and voluntary sustainability initiatives, many others revealed otherwise. Given that board size enhances a firm's effectiveness, logistics firms with larger boards will adopt sustainability practices. Thus, hypothesis one.

H1. Board size has a positive relationship with ESG performance in the logistics sector.

### 2.2.2 Board gender diversity

gender composition of the corporate boards is one of the main factors related to corporate governance, and it is viewed as the factor that influences the adoption and performance of CSR in the company (Velte, 2016). Velte's opinion is based on the fact that female directors often have different educational backgrounds and show more competency than male directors. They may provide different perspectives to the board discussions and bring stakeholder-related values to the board, influencing the board's decision and enhancing its ability to effectively address sustainability issues (Bear et al., 2010). Gender diversity brings diverse views to the meeting and improves the oversight function of boards (Erhardt et al., 2003). It enhances board effectiveness in stakeholder management, promotes sustainability initiatives, and encourages companies to act more environmentally responsible. Regarding the empirical evidence, Shaukat et al. (2016) stated that companies with more female directors are more likely to develop a comprehensive and proactive CSR strategy that helps to achieve better environmental and social performance. In the same auspices, Hussain et al. (2018) realized a positive relationship between board gender diversity and the adoption of CSR initiatives in a company.

Following theoretical arguments and prior empirical findings, female directors on the board are expected to enhance the corporate decision-making process and improve stakeholder management, leading to high-level sustainability performance. Thus, hypothesis two.

H2. Board gender diversity positively correlates with ESG performance in the logistics sector.

### 2.2.3 Board independence

In the agency theory literature, independent board members can control and monitor the actions of the managers effectively (Hussain et al., 2018). From the perspective of this theory, boards should appoint a more significant number of independent (i.e., external and outsider) directors to reduce agency costs arising from the opportunistic behavior of managers (Shaukat et al., 2016). In the view of stakeholder theory, board independence is expected to have a positive association with a greater level of sustainability performance because external directors are subject to less pressure from managers and shareholders than internal directors. Independent directors can connect a company with its external stakeholders by considering their interests in that context. Therefore, board independence can improve the board's objectivity, enhance its ability to represent multiple perspectives on the social and environmental responsibility of the company, and ensure balance among the interests of different stakeholders (Michelon and Parbonetti, 2012).

Although Naciti (2019) found that a higher proportion of independent directors is negatively associated with sustainability performance, most prior empirical research presented positive results on the link between board independence and sustainability performance. Following these studies and arguments of agency and stakeholder theories, board independence is assumed to enhance the implementation and adoption of sustainability initiatives. Thus, the following hypothesis is proposed:

H3. Board independence has a positive relationship with ESG performance in the logistics sector.

### 2.2.4 CEO and board chair separation

CEO duality gives a significant mandate to a single person, which allows him to make decisions without considering stakeholders' interests because an enormous amount of the firm power lies in the same person to act like a CEO and board chair (Duru et al., 2016). In this management type, the conflicting interests of managers and stakeholders regarding the use of corporate resources, among other things, may lead to failure in the maximization of the utility function (Prado-Lorenzo and Garcia-Sanchez, 2010). Therefore, while CEO duality may lead to negligence in social or community activities, CEO and board chair separation may encourage democracy and accept diverse views on corporate sustainability issues. Hence, companies might engage in more social and environmentally responsible practices considering the interests of their stakeholders. Thus, hypothesis four.

H4. CEO and board chair separation positively correlates with ESG performance in the logistics sector.

#### 2.2.5 Sustainability committee

Most firms have sustainability committees that formulate CSR policies and improve stakeholder engagement. Such a committee's expertise, knowledge, and skills play a significant role in developing and integrating CSR perspectives into corporate policies and strategies (Amran et al., 2014). The presence of a CSR committee is regarded as a tool for managing the firm's relationship with stakeholders and an effective monitoring mechanism for improving the sustainability performance of companies (Michelon and Parbonetti, 2012). As stated in the empirical literature review by Hussain et al. (2018), a CSR committee fosters the environmental and social performance of companies. Therefore, the existence of the Corporate Social Responsibility committee should promote the adoption of sustainability initiatives and improve corporate sustainability. Thus, hypothesis five.

H5. A sustainability committee (i.e., CSR) positively correlates with ESG performance in the logistics sector.

#### 2.2.6 Ownership structure

Irrespective of the media's pressure on listed firms to undertake CSR initiatives to avoid public scrutiny, ownership concentration gives listed firms less freedom to pursue sustainability agendas because such activities are considered costly and misuse of the firm's resources. (Piecyk and Bjoerklund, 2015). Piecyk and Bjoerklund (2015) made an assertion based on stakeholder theory that logistics companies listed on the stock exchange are likely to disclose a broader range of CSR achievements within their annual CSR reports, implying the impact of stakeholder pressures on their CSR practices. Liao et al. (2015) stated that ownership concentration negatively impacts environmental transparency. In this regard, it is expected that ownership diffusion positively impacts corporate sustainability performance. Thus, the following hypothesis is proposed:

H6. Ownership diffusion has a positive relationship with ESG performance in the logistics sector.

#### 2.2.7 Firm value

From a theoretical school of thought, there are two opinions on whether ESG is value-adding or value-deteriorating. The first perspective argues that Environment, Social, and Governance practices increase operational costs and drive the company to a position of economic disadvantage and, consequently, a lower market value (Aupperle et al., 1985). The second argues that engaging in ESG practices enhances corporate reputation and generates competitive advantages by differentiating the organization from its competitors (He et al., 2017). Aside from the second school of thought, a strong CSR report of a logistics firm gives the firm a positive review and impacts their financial performance through operational efficiency and reduces cost

(Piecyk and Bjoérklund, 2015), and consequently provides higher market values (Mervelskemper and Streit, 2017). For example, reducing greenhouse gas emissions from freight transport directly affects the amount of fuel used by transport vehicles and now decreases operating costs, improving operational and economic performance.

Furthermore, Khan and Qianli (2017) posited that green supply chain practices significantly positively affect economic performance. CSR engagement can also improve firm value by reducing potential conflicts between the company and its stakeholders and mitigating agency conflicts (Jo and Harjoto, 2011). Concerning empirical research, Humphrey et al. (2012) established a financial cost neither nor benefited from investing in firms with good ESG scores. Also, Velte (2017) pointed out that although ESG performance enhances firm profitability, it does not impact substantial market value. Crisostomo et al. (2011) also outlined a negative impact of adopting Corporate Social Responsibility practices on a firm's value. In contrast, Lo and Sheu (2007) determined a significant positive association between corporate social responsibility performance and firm value. With regards to the arguments on the value-adding role of ESG engagement, the following hypothesis is proposed:

H7. Sustainability performance positively affects the firm's value in the logistics sector.

### **2.3 Empirical Research**

Companies often structure their supply chain policies to reflect social and environmental concerns as responsible corporate entities. They also engage in responsible practices, including low-carbon logistics, green packaging, green distribution, green warehousing, transportation, philanthropy, employee training, and health and safety. The integration of sustainability practices in the logistics and supply chain sector has been the standard for Logistics social responsibility practices from the raw material provided to the service and product delivery (Miao et al., 2012). In this regard, a massive body of literature has focused on merging CSR and logistics and studied sustainability-related issues in the logistics field. Research has examined sustainability efforts in the overall supply chain, yet few studies have focused on the role and significance of logistics operations in environmental and social initiatives. For example, Rensburg (2015) provided a framework in green logistics for companies in South Africa and evaluated whether and to what extent firms in Africa engage in this act. Nikolaou et al. (2013) reviewed the social responsibility performance of reverse logistics systems with CSR's triple bottom line approach. Pazirandeh and Jafari (2013) studied Nordic multinationals and analyzed how green environment efforts in transportation influence logistics efficiency and effectiveness. Another piece of research examined the adoption of environmental initiatives by logistics companies in developing countries (Abbasi and Nilsson, 2016) Piecyk and Bjoérklund (2015), and Massaroni et al. (2016) explored CSR reporting practices in the logistics industry. Also, some papers examined the relationship

between logistics performance and social, environmental, and economic sustainability indicators at the local level (Zaman and Shamsuddin, 2017; Liu et al., 2018).

A couple of academic research reports the drivers of logistics firms' social responsibility practice. A mail survey was conducted by Miao et al. (2012) with MBA students working for manufacturing companies in China. The result showed that business ethics, clan culture, pressures from customers, and regulations are essential factors of the logistics social responsibility of a company. Colicchia et al. (2013) analyzed institutional factors that motivate logistics service providers to adopt environmental initiatives using a case study. Concerning challenges in developing environmentally responsible logistical practices, Abbasi and Nilsson (2016) determined that low customer willingness to purchase the ecologically responsible logistics services, organizational complexity, technological and legislative uncertainties, and network imbalance are amongst the main challenges in making logistics services environmentally sustainable. He et al. (2017) researched the same area using multiple case studies. He revealed inconsistencies in regulations such as the lack of low-carbon awareness, unreasonable infrastructure and facilities, scarcity of qualified logistics professionals, low efficiency in logistics operations management, and the disordered transport modes as the main obstacles to achieving low-carbon and sustainable development logistics services.

Based on the reviewed literature, it is clear that CSR-related issues have been studied globally in the logistics sector and few in the African context, yet, country-and company-level factors impacting CSR performance of logistics firms need further attention. Corporate governance is recognized as a mechanism that effectively delineates the rights and responsibilities of various stakeholder groups in a company and develops and implements social obligations to society (Cucari et al., 2018). According to Naciti (2019), CSR practices cannot be effective as a tool for handling the needs of corporate stakeholders when it is not activated in corporate governance. Since policymakers initiate CSR efforts in the companies, the structure and composition of the boards can influence corporate decisions on sustainability matters (Liao et al., 2015). The Naciti (2019) study justifies the effort to study the board-level drivers of CSR performance in the logistics sector.

CSR performance of a firm may lead to better financial results because responsible corporate practice is often viewed as a value add-on to the firm and can be rewarded by investors with a higher valuation in the market (Lo and Sheu, 2007). Nevertheless, empirical research on the relationship between corporate sustainability performance, firm performance, and firm value showed contradictory results in Brazil (Crisostomo et al., 2011), the U.K. (Humphrey et al., 2012), and Pakistan (Khan et al., 2019). Thus, another justification for further investigation on the topic.



## 2.4 Conceptual Framework

The study conceptualized the relationship between independent variables (board size, board gender diversity, sustainability committee, CEO and board chair separation, board independence, and ownership structure) affecting Firm Value (dependent variable). The framework below depicts how the six variables in their flawless operation will affect ESG, which directly increases the firm's CSR performance score and takes its value to the roof. Based on existing works of literature and the hypothesis of the study, the listed variables have a direct positive relationship with the company's ESG. Therefore, a company that utilizes these variables in its correct state/frame will show a positive/ high ESG score. A firm with good environmental and social initiatives attracts a sustainability score because ESG scores directly affect a company's CSR; thus, the higher its ESG score, the better its CSR ratings. CSR has been hailed as one factor that directly affects firms' value. A company with strong environmental concerns and sustainability initiatives attracts investors and gains customers. Thus, a direct link between CSR and firm value. The framework shows that a perfect operationalization of the independent variables will take the dependent variable (firm's value) to the roof, yet inconsistencies in the independent variables' operationalization will affect the firm's value. Figure 1 shows the graphical presentations of the conceptual research framework.

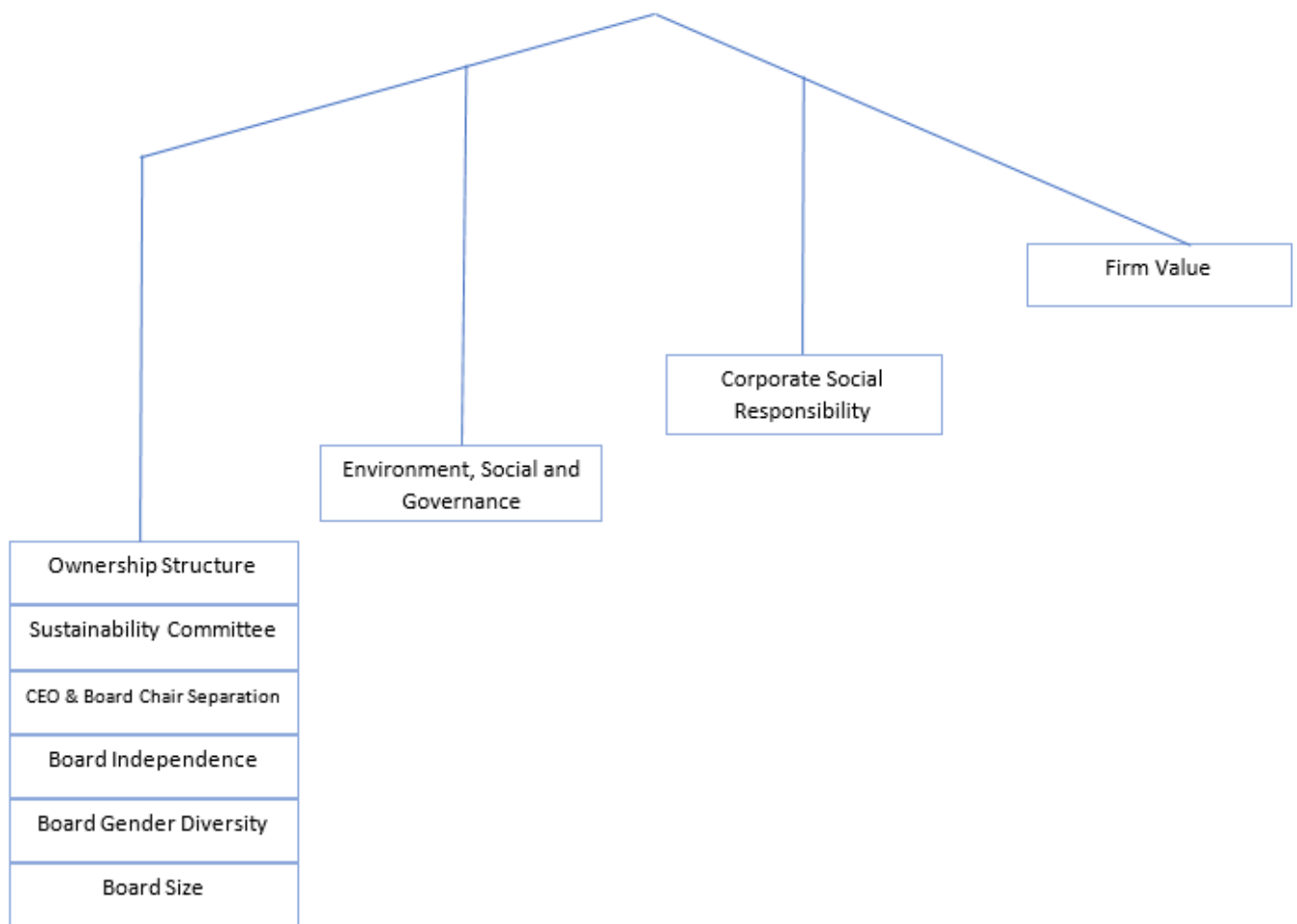


Figure 1. conceptual framework of the research

Source: author's summary

## Chapter Three

### 3. Logistics and Economic Growth in Africa

#### 3.1 Brief overview of logistics and economic growth in Africa

Logistics has proven to be a competitive weapon for companies and territories: continents, nations, regions, and districts, including urban/metropolitan areas. In today's rapid globalization, a country without efficient supply logistics and infrastructure networks can seriously compromise its economic development. The physical space can become one context infrastructure, which must be planned and designed to be attractive and balanced, creating a more cohesive living and work environment. However, the space value is not only about the strength of the infrastructure network. Infrastructure is necessary but not enough for the development

of a competitive edge. Due to globalization, the concept of competitiveness has been revised and extended to affect territories. Competition is now defined as a set of operating systems that create the conditions of economic and social development, support local businesses, and attract new entrepreneurship.

Sustainable economic growth has been and remains a priority for policymakers and researchers as the achievement of the phenomenon seems evasive due to volatility and constant changes in the business environment. As a result, third-world countries have adopted various macroeconomic growth strategies that yield different results. For example, the success of the East Asian tigers is attributed to export-led growth strategies in China (Palley, 2011), services-led growth in India (Ghani, 2010), and Pakistan (Siddiqui and Saleem, 2008). Other scholars link economic success to investment, particularly transport infrastructure investment-led growth strategies. The economic gap between advanced and third world countries keeps growing despite the long-run macroeconomic predictions of economic catch-up and steady-state economic growth for all countries. In Africa, Unemployment, repressed economic growth, trade performance, and inequality persist. For instance, the World Development Indicators (WDIs) show that in 2017 the high-income countries reported 1.83% annual growth of GDP per capita and 62.78% of trade (trade measured as a percentage of GDP). In the same year, Sub-Saharan Africa reported a negative GDP growth (-0.26%) and trade of 53.99% (World Bank Group, 2020). The data shows that African countries should identify and prioritize alternative growth strategies to ensure sustained economic growth and development

### **3.2 Role of logistics in economic growth in Africa**

The role of logistics in economic growth has become an important topic for researchers and policymakers globally. Logistics is a rapidly growing academic discipline, far from reaching full maturity (Karatat-Cetin and Denktas-Sakar, 2013). Logistics companies have a crucial role in delivering sectoral connections within a country and connects the country's economy to the global economy; it also creates employment opportunities and generates additional income (Tang and Abosedra, 2019), which facilitates economic development. In recent years, globalization and the resultant increase in the intensity of global competition amongst African countries have necessitated the role of logistics in business efficiency and success. Navickas et al. (2011) theorize that logistics enhances the economic production capacity by improving efficiency, reliability, and service quality. The improvement in these factors contributes to lower logistics costs, shortened transit times, and business expansion, enhancing productivity, competitiveness, and economic growth. An economic role bounds the logistics sector to promote several financial aspects such as storage, transport networks, packaging services, communication, and information technology, amongst other factors (Sharipbekova and Raimbekov, 2018).

### **3.3 Logistics challenges in Africa**

Poor logistics performance is a significant contributor to the economic undertakings in Africa. A country that lacks an effective logistics operation also experiences stunted economic growth. According to Takele (2019), African economies have the lowest logistics performance due to low trade quality, transport-related infrastructure, and inefficient customs and border clearance procedures. Figure 2 shows a similar observation and justifies that most countries in Africa have low-to-average logistics performance.

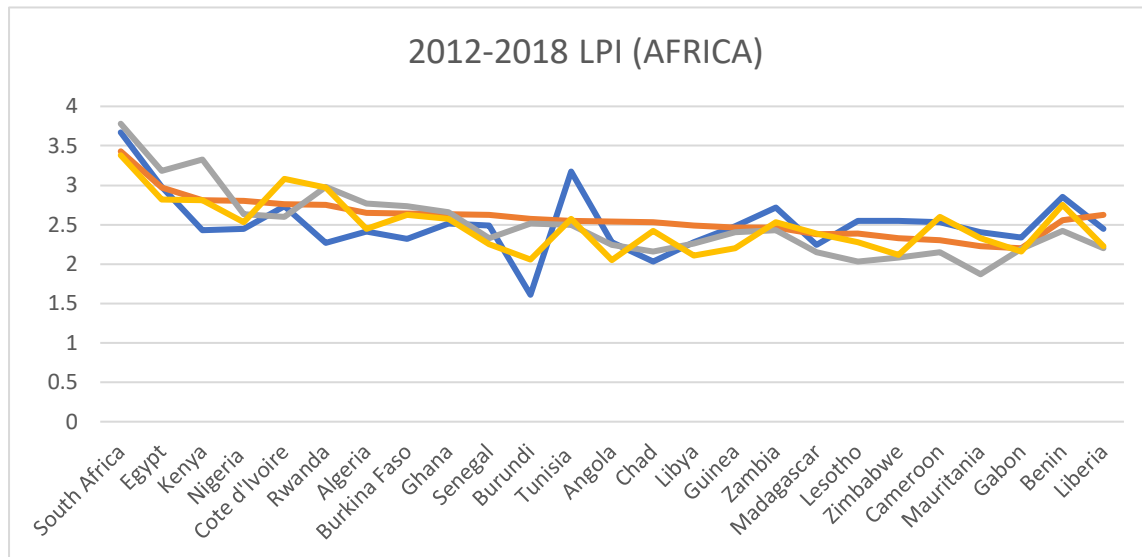


Figure 2. Logistics performance of African countries

2012 2014 2016 2018

World bank 2012-2018

A study by the Knight Frank group (2016) reported that poor transport infrastructure is a significant problem affecting the growth of the African logistics sector. The poor transport infrastructure includes limited rail and road connections linking major economic and trade hubs. The effect on the logistics sector and the economy is connected to the fact that poor transport infrastructure results in higher transportation costs than in advanced countries.

Although the best in the African logistics sector, South Africa experiences limited business efficiency and economic growth thanks to significant macro logistics challenges resulting from poor transport infrastructure (Havenga, 2018). These comprise high total logistics costs arising from increased transportation costs. According to Havenga et al. (2016), South Africa's logistics costs amounted to R499 billion (11.8% of GDP) in 2016 due to modal transport imbalance where longer distance road transports are used instead of rail transport (Havenga, 2018). Also, there is the problem of traffic congestion. The challenge is worse in cities booming with economic activities such as Nairobi in Kenya, Accra in Ghana, Lagos in Nigeria, and Douala in Cameroon (AFRIC, 2018). The Citizen (2020) reported Cape Town, Johannesburg, and Pretoria as the most

congested cities in Africa, respectively; thus, South Africa is mainly affected by the traffic congestion problem. Besides congestion, high transport cost is a persisting business constraint in Africa.

Transport costs account for approximately 50%-75% of the retail price of goods in Africa (Knight Frank Group, 2016). An increase in investment in logistics infrastructure, operational activities, and technology could improve logistics performance in Africa, thereby reducing the final market price of goods in Africa. Most of the logistics challenges in Africa are linked to the inefficiency of logistics firms, poor infrastructure, and other bureaucratic hindrances (Muogboh et al., 2018). Wawira (2019) confirmed the findings of the Knight Frank group and revealed that the cost of transportation represents between 50% and 75% of the retail price goods in the African market. The effect is felt across the board, from delayed deliveries between domestic destinations to the slow growth of cross-border trade. These problems call for long-term strategies to resolve the problem in the sector. In Africa, logistics issues such as inefficiency, high costs and inadequate capacity of the nation's logistics systems, and poor inter-modal transport systems are numerous constraints that hinder sustainable economic growth (Havenga, 2018). Logistics is a vital element in business efficiency and a key facilitator to economic growth. Given the logistics challenges in Africa, it is unclear whether addressing these challenges by way of firms channeling their CSR activities to these issues can lead to increased economic growth in Africa.

### **3.4 Continental comparison of logistics performance indexes**

International competitiveness drives a country's economic success. The World Economic Forum started publishing the annual World Competitive Index in 1980, and the rankings have become the primary criteria for a national performance. The Global Competitiveness Report is a comprehensive tool that measures both microeconomic and macroeconomic foundations of national competitiveness. It has studied and benchmarked the numerous factors underpinning national competitiveness. The concept of competitiveness involves both static and dynamic components grouped into 12 pillars, namely; Institutions, Infrastructure, ICT adoption, macroeconomic stability, health, skills, product market, labor market, financial systems, market size, business dynamism, and innovation capability. These are not independent factors: They tend to reinforce each other; thus, a weakness in one area often affects others.

***Table 1. Logistics Performance Index and Global Competitiveness Index rank.***

Europe	2018 LPI rank	2018 GCI rank	Africa	2018 LPI rank	2018 GCI rank	Asia/Oceania	2018 LPI rank	2018 GCI rank
Austria	4	22	South Africa	33	67	Singapore	7	2
Belgium	3	21	Egypt, Arab Republic	67	94	Japan	5	5
Bulgaria	52	51	Malawi	97	129	Hong Kong	12	7
Croatia	49	68	Kenya	68	93	Australia	18	14
Cyprus	24	44	Nigeria	110	115	Tiawan	27	13
Czech Republic	22	29	Cote d'Ivoire	50	114	Korea Republic	25	15
Denmark	8	10	Rwanda	57	108	New Zealand	15	18
Estonia	36	32	Namibia	m.v	100	Malaysia	41	25
Finland	10	11	Algeria	117	92	China	26	28
France	16	17	Burkina Faso	91	124	Qatar	30	30
Germany	1	3	Ghana	106	106	Thailand	32	38
Greece	42	57	Senegal	141	113	Vietnam	39	77
Hungary	31	48	Ethiopia	m.v	122	Indonesia	46	45
Ireland	29	23	Burundi	158	136	Saudi Arabia	55	39
Italy	19	31	Tunisia	105	87	Bahrain	59	50
Latvia	70	42	Angola	159	137	India	44	58
Lithuania	54	40	Chad	123	140	Kuwait	63	54
Luxembourg	24	19	Mauritius	78	49	Philippines	60	56
Malta	69	36	Libya	155	n/a	Oman	43	47
Netherlands	6	6	Botswana	m.v	90	Pakistan	122	107
Poland	28	37	Guinea	145	126	Cambodia	98	110
Portugal	23	34	Zambia	111	118	Nepal	114	109
Romania	48	52	Madagascar	128	n/a	Bangladesh	100	103
Slovak Republic	53	41	Lesotho	139	130	Laos PDR	82	112
Slovenia	35	35	Zimbabwe	152	128	Mongolia	130	99
Spain	17	26	Tanzania	m.v	116	Myanmar	137	n/a
Sweden	2	9	Cameroon	95	121			
The United Kingdom	9	8	The Gambia	127	119			
			Mozambique	m.v	133			
			Mauritania	135	131			
			Gabon	150	n/a			
			Benin	76	123			
			Liberia	143	132			

\*m.v -LPI - missing values for 2018, \*\*n/a – GCI - data for 2018 not available.

Sources: LPI World Bank and GCI World Economic Forum, 2018 editions.

The first ten countries on the annual world competitive index have remained relatively unchanged since 2007 and, as expected, high-income European countries dominate the top 10 rankings (1. Germany, 2. Sweden, 3.

Belgium, 4. Austria, 6. Netherlands, 8. Denmark, 9. the United Kingdom, and 10. Finland). These countries are booming, well-established logistics players with a leading role in global or regional supply chains. Wealthy European countries are among the top 20 countries globally (16. France, 17. Spain, 19. Italy), and even those European countries with the worst performance do not go lower than the 70th position because Europe is the most efficient logistics hub in the world. In Asia & Oceania, only two countries (5. Japan and 7. Singapore) fall within the top ten rankings. As shown in the table above, it is noteworthy that many countries offer logistics efficiency levels comparable to the European Continent (12. Hong Kong, 18. Australia, 27. Taiwan, 25. Rep. of Korea, 15. New Zealand, 41. Malaysia, and 26. China). In contrast, as expected, the lowest rankings come close to the African continent, recording a substantial heterogeneity of the sector's development. As for the African continent, industry efficiency is deficient except 33 (South Africa), with 159 (Angola) receiving the worst score. With Global Competitive Index (GCI), the results differ from the LPI; out of the 28 listed EU countries, only five appears in the GCI top ten rankings (3. Germany, 6. Netherlands, 8. The United Kingdom, 9. Sweden, and 10. Denmark). Except 17 (France), wealthy nations that appeared in the top 20 on LPI ranking have lower GCI rankings (26. Spain, 31. Italy); and only 19 (Luxemburg) scores a better result than its LPI ranking. Croatia, 68, is the least competitive European country. For Asia and Oceania, the competitiveness efficiency can be divided into two subgroups: competitive and uncompetitive nations. The competitive nations include 2. Singapore and 5. Japan, whereas the uncompetitive nations have 103. Bangladesh, 107. Pakistan, 109. Nepal, 110. Cambodia and 112. Laos PDR. In Africa, as with the LPI index, GCI performance is very low for all nations, from 50. Rwanda and 57. Côte d'Ivoire to 133. Mozambique and 130. Lesotho.

## 4. Chapter Four

### Research Methodology, Data Analysis, and Presentation

#### 4.1 Methodology

##### 4.1.1 Research Approach

The completion of the research objectives will necessitate precise and sufficient details due to the nature of the analysis. As a result, the empirical research method was used in this study to aid in answering research questions. Statistical data was acquired to help the quantitative approach. The quantitative section also retrieved data from the website of logistics multinationals and other data sources for selected African countries. The paper examines the value relevance of CSR performance in the logistics sector in Africa based on these data sets.

#### 4.1.2 Population of the Study

This study focused on determining the value relevance of CSR performance in the logistics sector in Africa. The selection of these logistics firms centered on logistics performance index discrimination of selected African countries with published LPI per year spanning 2011 – 2018. With this, the population consists of 33 out of 54 African Countries.

### 4.2 Empirical Research Methodology

The empirical research methodology is structured as follows:

- The construction of the statistical models to test the existing hypotheses.
- Identification and collection of the data sets.
- The collected data sets were cleaned and made compatible for analyses.
- Verification and analyses of statistical models.
- Compilation and interpretation of the results.

#### 4.2.1 Statistical models

Model 1 is such that ESG performance is related to corporate governance characteristics including Sustainability Committee, CEO Board Chair Separation, Board Gender Diversity, Board Size, Board Independence, and Free Float Percentage. i.e., a proxy for ownership diffusion. Leverage is the controlling variable, and profitability is proxied by return on assets [ROA]. The natural logarithm of total assets is proxied as company size. Previous studies by (Uyar et al., 2020); used free float percentage as a proxy for ownership structure in CSR performance and reporting. Free float is often referred to as the part of the shares of a company that is traded publicly in an organized stock exchange (Kiliç et al., 2015). In this sense, free float exerts a direct effect on ownership structure. i.e., the higher the free float, the more dispersed the ownership structure because a firm's CSR performance and report are higher considering the information needed to attract a broad spectrum of shareholders and other stakeholders (Kuzey and Uyar, 2017). Also, many research works used firm size, profitability, and leverage in their model because they are potential drivers of CSR performance. They stated that more prominent and profitable firms have more reasons and resources for achieving excellent CSR performance results (Karaman et al., 2018; Uyar et al., 2020). Model 2 linked firm performance (Tobin Q) to ESG performance and controlled the corporate governance variables (mentioned above) and other firm characteristics. Both statistical models are presented below respectively:

Model 1:

$$\begin{aligned} \text{ESG Score}_i / \text{Pillar Score}_i = & \beta_0 + \beta_1 \text{Board Size}_i + \beta_2 \text{Board Gender Diversity}_i \\ & + \beta_3 \text{Board Independence}_i + \beta_4 \text{CEO Chair Separation}_i \\ & + \beta_5 \text{Sustainability Committee}_i + \\ & \beta_6 \text{Free Float Percentage}_i \end{aligned}$$



$$+\beta_7\text{Ln}(\text{Total Assets})_i + \beta_8\text{Leverage}_i + \beta_9\text{ROA}_i + \varepsilon_i$$

Model 2:

$$\begin{aligned} \text{Tobin Q} = & \beta_0 + \beta_1\text{ESG Score}_i / \text{Pillar Score}_i + \beta_2\text{Board Size}_i \\ & + \beta_3\text{Board Gender Diversity}_i + \beta_4\text{Board Independence}_i \\ & + \beta_5\text{CEO Chair Separation}_i + \beta_6\text{Sustainability Committee}_i \\ & + \beta_7\text{Free Float Percentage}_i + \beta_8\text{Ln}(\text{Total Assets})_i \\ & + \beta_9\text{Leverage}_i + \beta_{10}\text{ROA}_i + \varepsilon_i \end{aligned}$$

The predicted variable in the first model, the self-disclosed ESG score and the ESG Pillar scores (consequently the individual ESG Pillar scores, respectively). Tobin Q (dependent variable) in the second model, expresses the firm performance in a given year. The corporate governance characteristics were the predictor variables in both models. Besides, the ESG disclosure (ESG score or the individual ESG Pillar scores, respectively) was used as a predictor variable in the second model. Firm size, leverage, and ROA are controlled in both models. To induce less skewness, the “size” variable and “total assets” were log- transformed. Table 2 shows the definition of variables.

**Table 2. Definition of variables**

Variables	Definition	Source
<b>ESG score</b>	overall firm score from the self-disclosed information combining ESG pillar scores	Refinitiv Eikon
<b>Environmental pillar score</b>	assesses the firm’s influence on living and non-living natural ecosystems including land, water, and air	Refinitiv Eikon
<b>Social pillar score</b>	measures the firm’s ability to create faith and devotion with its customers, employees, and the society	Refinitiv Eikon
<b>Governance pillar score</b>	evaluates the firm’s systems, processes and executives as well the actions of the board of directors to guarantee long term shareholder value	Refinitiv Eikon
<b>Tobin Q (Tobin’s Q ratio)</b>	the ratio of total debt and market capitalization to total assets	author’s calculation

<b>Board size</b>	the number of board of directors	Refinitiv Eikon
<b>Board gender diversity</b>	the percentage of the female board of directors	Refinitiv Eikon
<b>Board independence</b>	shows the existence of policy about the independence of the firm's board	Refinitiv Eikon
<b>CEO board chair separation</b>	indicating either the CEO leads the board or the chairperson is the CEO of the company	Refinitiv Eikon
<b>Sustainability committee</b>	indicating whether the company has a CSR or sustainability team	Refinitiv Eikon
<b>Free float percentage</b>	the percentage of outstanding shares	Refinitiv Eikon
<b>Total assets</b>	the overall assets owned by the company	Refinitiv Eikon
<b>Leverage</b>	the ratio of total liabilities to total assets	author's calculations
<b>Return on assets (ROA)</b>	the ratio of net income (minus taxes) to total assets	author's calculations

To transform models 1 and 2, entity and time dimensions were introduced. The Fixed Effects models (with both time and entity fixed effects) for both the ESG performance and the firm performance within cross-sectional observations were presented in models 3 and 4 respectively:

Model 3:

$$\begin{aligned}
 \text{ESG Score}_{it} \mid \text{Pillar Score}_{it} = & \beta_1 \text{Board Size}_{it} + \beta_2 \text{Board Gender Diversity}_{it} \\
 & + \beta_3 \text{Board Independence}_{it} + \beta_4 \text{CEO Chair Separation}_{it} \\
 & + \beta_5 \text{Sustainability Committee}_{it} + \beta_6 \text{Free Float Percentage}_{it} \\
 & + \beta_7 \text{Ln(Total Assets)}_{it} + \beta_8 \text{Leverage}_{it} + \beta_9 \text{ROA}_{it} + \alpha_i + \lambda_t + \varepsilon_{it}
 \end{aligned}$$

Model 4:

$$\begin{aligned}
 \text{TobinQ}_{i,t} = & \beta_1 \text{ESG Score}_{i,t} \mid \text{Pillar Score}_{i,t} + \beta_2 \text{Board Size}_{i,t} \\
 & + \beta_3 \text{Board Gender Diversity}_{i,t} + \beta_4 \text{Board Independence}_{i,t} \\
 & + \beta_5 \text{CEO Chair Separation}_{i,t} + \beta_6 \text{Sustainability Committee}_{i,t} \\
 & + \beta_7 \text{Free Float Percentage}_{i,t} + \beta_8 \text{Ln(Total Assets)}_{i,t} + \beta_9 \text{Leverage}_{i,t} \\
 & + \beta_{10} \text{ROA}_{i,t} + \alpha_i + \lambda_t + \varepsilon_{i,t}
 \end{aligned}$$

In correspondence to previous studies, including Ioannou and Serafeim (2017), and Yang and Baasandorj (2017), the authors used Fixed Effects panel data analysis in their methodology. Other researchers, to mention a few, Cucari et al. (2018), adopted a Random Effects model, but the Hausman (1978) test stipulated that the Fixed Effects methodology is more effective in this setting. Structural equation modeling (SEM) is another viable methodology more suitable for multi-faceted, hardly direct measurable, not well-defined hypothetical constructs, which calls for testing multiple series and independent complex models (Kline, 2015). SEM also allows potential measurement errors in explanatory variables (Raykov and Marcoulides, 2006). However, in the context of longitudinal studies, multiple regression-based approaches are preferable (Nusair and Hua, 2010). According to an assumption (Wooldridge, 2016), if the exogeneity of predictor variables, Fixed Effects estimators are unbiased and can address unobserved individual heterogeneity across all periods, then the idiosyncratic errors do not correlate with predictor variables.

#### 4.2.2 Data sources

The ESG scores, corporate financial variables, and board characteristics were downloaded from the Refinitiv Eikon database, covering 99% of the worldwide market capitalization. The Refinitiv Eikon database maintains about 10,000+ company ESG scores globally. The Refinitiv database computes ESG scores using firm-reported data to calculate a firm's ESG achievement, engagement, and effectiveness. The database covers and maintains 178 related and comparable ESG measures to be used in the scoring process. These measures are grouped across ten categories: resource use, environmental product innovation, emissions, community, product responsibility, workforce, human rights, shareholders, management, and CSR strategy. Afterward, a combination of 10 categories is formulated to the ESG Pillar scores (Thomson Reuters, 2019).

The overall ESG score is dependent on companies' self-disclosed information, which combines the ESG Pillar scores. The Environmental Pillar score includes the emissions, resource use, and innovation scores (Thomson Reuters, 2019), whereas the Environmental score assesses the firm's influence on living and non-living ecosystems. The score shows the firm's efforts to eradicate environmental risks and prosper ecological prospects. The Social score category includes the workforce, community, human rights, and product responsibility facets. The class aims to evaluate how well a company ensures equal opportunity and diversity among employees, respects human rights, engages in community development initiatives, and considers human health and safety in their daily operations (Thomson Reuters, 2019). The Governance Pillar score incorporates CSR strategy, shareholders, and management dimensions aiming to assess the ability of the firm

to make corporate governance decisions, treat shareholders equally, devise antitakeover provision strategies, and communicate its CSR practices with stakeholders (Thomson Reuters, 2019).

TR Eikon uses a percentile ranking methodology to calculate the relative ranks of firms in each ESG measure and the category score depending on the number of firms that have

1. a score at all,
2. a lower score than the firm under consideration, or
3. the same score as the current firm.

Initially, the individual percentile ranks of ESG are derived for all the ESG measures in the category. Then, an average category score is computed for each firm. Next, the percentile ranking methodology is applied to finalize the category percentile ranks for all firms. Finally, the ESG Pillar scores and the overall ESG score are computed by the weighted sum of the category and the Pillar scores, respectively. The ESG and individual Pillar scores fluctuate between 0 and 100; the highest score represents the superior performance (Thomson Reuters, 2019).

The author calculated Tobin Q regarding the company's total debt and market capitalization and rationing to total assets. Previous studies by (Karaman et al., 2018; and Singh et al., 2018) used Tobin Q as a proxy for the company's appraisal. Table 2 shows all other variables' definitions and corresponding data sources. The data downloaded belonged to 100 logistics companies maintained in the Rifinitiv database for 2011–18. The sample includes courier, postal, airfreight & land-based, marine freight & logistics, integrated logistics, and ground freight & logistics (freight trucking, railway freight, truck rental, warehousing) firms. Thomson Reuters, 2019). The initial sample had 519 firm-year observations. However, 15 out of the 519 observations were missing for board gender diversity. Hence, the reduction to a final set of 504 observations. The list of the companies is displayed in Table A1 in the Appendix. The countries within which firms operate in Africa are listed in the sample. The countries adopted for the study are all developing countries from the African continent, which validates the eligibility of the finding applies to the whole of Africa and other developing countries around the world.

#### 4.2.3. Descriptive statistics

The description of the variables in the analyses is reported in Table 3. In 2011–18, the average ESG score was 50.02, the average Environmental Pillar score was 50.87, the average Social Pillar score was 51.08, and the average Governance Pillar score was 47.82. The ESG scores experienced a significant fluctuation between

2.76 and 96.15. The average Tobin's Q ratio was initially recorded at 1.27, which later changed from 0.18 to 5.39. within the stipulated period, a board of ten members on average oversaw the companies, with the smallest board being four members and the largest, twenty-three members. The percentage of women on corporate boards was 11.49% on average, whereas the maximum only reached 50%. The results show that 56% of the panels had a policy about their independence. In the remaining 44% instances, either the CEO chaired the board simultaneously, or the board's chairperson instantaneously was the company's CEO. Half of the companies from 2011 to 18 had a sustainability committee or CSR team. The free float percentage of outstanding shares was recorded slightly above 75%. The average total assets were around twelve billion dollars, and the mean leverage was 59.37%. Finally, the mean ROA was 4.25% within the 2011-2018 period.

**Table 3 Descriptive statistics**

<i>Variables</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Minimum</i>	<i>Max.</i>
<i>ESG score</i>	519	50.02	17.38	10.82	87.63
<i>Environmental pillar score</i>	519	50.87	23.46	6.21	96.15
<i>Social pillar score</i>	519	51.08	21.31	7.63	94.58
<i>Governance Pillar Score</i>	519	47.82	21.00	2.76	93.69
<i>Tobin Q</i>	519	1.27	0.76	0.18	5.39
<i>Board size</i>	519	10.03	3.40	4	23
<i>Board gender diversity</i>	519	11.49	11.69	0	50
<i>Board independence</i>	519	0.56	0.50	0	1
<i>CEO board chair separation</i>	519	0.44	0.50	0	1
<i>Sustainability committee</i>	519	0.50	0.50	0	1
<i>Free float percentage</i>	519	75.08	25.42	0	100
<i>Total assets</i>	519	11,700,000,000	21,600,000,000	334,000,000	243,000,000,000
<i>Leverage</i>	519	59.37	22.13	0	160.55
<i>ROA</i>	519	4.25	6.84	-39.00	66.60

#### 4.2.4 Correlation coefficient

Table 4 shows the correlation coefficients (the Pearson's) and their significance. The table shows a highly significant correlation among the ESG scores. In particular, the correlation coefficient between the ESG and

Environmental Pillar score was  $r = 0.8562$  ( $p < .01$ ), the ESG and Social Pillar score was  $r = 0.8659$  ( $p < .01$ ), and the ESG and Governance Pillar score was  $r = 0.6235$  ( $p < .01$ ). In contrast, the correlation between the ESG scores and Tobin Q was insignificant with the exception Environmental Pillar score which showed a negative correlation ( $r = -0.1206$ ,  $p < .01$ ). The ESG scores were moderately correlated with board size and board gender diversity. However, Tobin Q was not in correlation with board size but positively correlated with board gender diversity ( $r = 0.2374$ ,  $p < .01$ ). Tobin Q also showed a positive correlation with board independence ( $r = 0.2699$ ,  $p < .01$ ). Among the ESG scores, only the Governance Pillar score showed a positive correlation with board independence ( $r = 0.2269$ ,  $p < .01$ ). The correlations between ESG scores and CEO Board Chair Separation were negligible (except for the Governance Pillar score where  $r = -0.1025$ ,  $p < .05$ ); however, the correlation between Tobin Q and CEO Board Chair Separation was  $r = 0.2696$  ( $p < .01$ ). In addition, the ESG scores and presence of a sustainability committee or team, and the ESG scores and company size were averagely/highly correlated.

**Table 4 Pearson's correlation coefficient**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. ESG score	1													
2. Environmental pillar score	0.8562 <sup>a</sup>	1												
3. Social pillar score	0.8695 <sup>a</sup>	0.6898 <sup>a</sup>	1											
4. Governance pillar score	0.6235 <sup>a</sup>	0.2623 <sup>a</sup>	0.3085 <sup>a</sup>	1										
5. Tobin Q	-0.0768	-0.1206 <sup>a</sup>	-0.0339	-0.018	1									
6. Board size	0.446 <sup>a</sup>	0.3716 <sup>a</sup>	0.4662 <sup>a</sup>	0.1964 <sup>a</sup>	-0.0717	1								
7. Board gender diversity	0.3795 <sup>a</sup>	0.2908 <sup>a</sup>	0.2876 <sup>a</sup>	0.3239 <sup>a</sup>	0.2374 <sup>a</sup>	0.1894 <sup>a</sup>	1							
8. Board independence	0.0662	-0.0424	0.0046	0.2269 <sup>a</sup>	0.2699 <sup>a</sup>	0.1377 <sup>a</sup>	0.2781 <sup>a</sup>	1						
9. CEO board chair separation	-0.0283	0.0153	0.0058	-0.1025 <sup>b</sup>	0.2696 <sup>a</sup>	-0.0647	-0.074	0.1957 <sup>a</sup>	1					
10. Sustainability committee	0.5632 <sup>a</sup>	0.4942 <sup>a</sup>	0.5297 <sup>a</sup>	0.2864 <sup>a</sup>	0.0666	0.2431 <sup>a</sup>	0.2744 <sup>a</sup>	-0.0483	-0.107 <sup>b</sup>	1				
11. Free float percentage	0.166 <sup>a</sup>	0.0616	0.1391 <sup>a</sup>	0.2091 <sup>a</sup>	0.2335 <sup>a</sup>	-0.0835	0.2653 <sup>a</sup>	0.204 <sup>a</sup>	0.1964 <sup>a</sup>	0.1514 <sup>a</sup>	1			
12. Ln (total assets)	0.6355 <sup>a</sup>	0.6074 <sup>a</sup>	0.5274 <sup>a</sup>	0.3444 <sup>a</sup>	-0.1515 <sup>a</sup>	0.5411 <sup>a</sup>	0.2097 <sup>a</sup>	0.0592	0.0442	0.3146 <sup>a</sup>	0.0194	1		
13. Leverage	0.3245 <sup>a</sup>	0.3187 <sup>a</sup>	0.2854 <sup>a</sup>	0.1464 <sup>a</sup>	-0.1082 <sup>b</sup>	0.177 <sup>a</sup>	0.0937 <sup>b</sup>	0.0478	-0.1235 <sup>a</sup>	0.1763 <sup>a</sup>	0.06	0.2008 <sup>a</sup>	1	
14. ROA	-0.0861 <sup>b</sup>	-0.1339 <sup>a</sup>	-0.0524	-0.005	0.5542 <sup>a</sup>	-0.0326	0.2529 <sup>a</sup>	0.153 <sup>a</sup>	0.1658 <sup>a</sup>	0.0192	0.2272 <sup>a</sup>	-0.0877 <sup>b</sup>	-0.1363 <sup>a</sup>	1

*a* – significance level (2-tailed) is: .01

*b* – significance level (2-tailed) is: .0

### 4.3 Data analysis and presentation

Initially, the author considered the relationship between the ESG performance of the logistics companies to their corporate governance characteristics. Initially, the OLS regression analysis in Model 1 was used to establish the relationship between the ESG score and the predictor variables. Also, the author introduced the company fixed effects in Model 1. These models were used to check the robustness by running preliminary analyses. Afterward, the time fixed effects and the cross-sectional time variation were considered using model 3. Hypotheses were accepted or rejected based on the results from model 3. Also, the author used model 3 to analyze the individual pillar scores. The results are displayed in table 5 below.

**Table 5. Regression analysis for ESG scores**

Variable	Pooled OLS	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
<b>ESG score</b>	Dependent variable	Dependent variable	Dependent variable			
<b>Environmental pillar score</b>				Dependent variable		
<b>Social pillar score</b>					Dependent variable	
<b>Governance pillar score</b>						Dependent variable
<b>Board size</b>	0.572 (0.170) ***	-0.456 (0.256) *	-0.189 (0.258)	0.169 (0.349)	-0.266 (0.345)	-0.497(0.441)
<b>Board gender diversity</b>	0.261 (0.047) ***	0.353 (0.058) ***	0.224 (0.066) ***	0.113 (0.090)	0.050 (0.089)	0.552 (0.113) ***
<b>Board independence</b>	-1.669 (1.064)	3.771 (1.242) ***	1.568 (1.326)	-0.326 (1.796)	1.113 (1.777)	4.208 (2.269) *
<b>CEO board chair separation</b>	1.585 (1.031)	-3.010 (1.253) **	-1.537 (1.269)	-0.935 (1.718)	-0.631 (1.700)	-3.264(2.171)
<b>Sustainability committee</b>	10.479 (1.066) ***	2.015 (1.177) *	3.201 (1.189) ***	1.530 (1.610)	6.091 (1.593) ***	1.699(2.035)
<b>Free float percentage</b>	0.060 (0.021) ***	0.060 (0.036) *	0.044 (0.035)	-0.015 (0.047)	0.148 (0.047) ***	-0.013(0.060)
<b>Ln(total assets)</b>	5.815 (0.480) ***	10.612 (1.709) ***	9.802 (1.734) ***	6.424 (2.348) ***	10.721(2.324) ***	12.498 (2.967) ***
<b>Leverage</b>	0.101 (0.022) ***	0.098 (0.050) *	0.103 (0.049) **	0.170 (0.067) **	0.069 (0.066)	0.069(0.085)
<b>ROA</b>	-0.121 (0.080)	-0.070 (0.064)	-0.067 (0.062)	-0.054 (0.085)	-0.007 (0.084)	-0.153(0.107)
<b>Constant</b>	-104.118(9.907) ***	-197.262(37.284) ***	-182.332(38.720) ***	-108.506 (52.440) **	-206.045(51.894)	-237.029 (66.264) ***
<b>No. of observation</b>	504	504	504	504	504	504
<b>Firm fixed effects</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effects</b>	No	No	Yes	Yes	Yes	Yes
<b>P-value</b>	<.001	<.001	<.001	<.001	<.001	<.001
<b>Adjusted R2</b>	0.61					

Standard deviation error in parentheses; \*\*\*p<.01; \*\*p<.05; \*p<.1



The regression models were statistically significant (with the F statistics' p-values less than 0.01). The pooled OLS regression (column 2 in Table 5) shows 61% of the variability in the ESG performance. According to the OLS results, there is a positive and statistically significant relationship between the ESG score and Board Size ( $\beta_1 = 0.572$ ), Board Gender Diversity ( $\beta_2 = 0.261$ ), Sustainability Committee ( $\beta_5 = 10.479$ ), and Free Float Percentage ( $\beta_6 = 0.060$ ) with p-values  $< .01$ . Therefore, it can be concluded that firms with larger board, a higher number of females on board, a sustainability committee, a more dispersed ownership structure records a better CSR performance result. The analysis obtained similar results after the author introduced the company fixed effect in model 1 (column 3 in Table 5). This time the results showed minor differences; Board Independence was positively significant, but CEO Board Chair Separation was negatively significant.

Furthermore, observations were made for fixed effects and time variation within cross-sectional observations using Model 3. The results are shown in columns 4–7 in Table 5. The results show a positive relationship between ESG performance and the Board Gender Diversity ( $\beta_2 = 0.224$ ). Also, there was a positive and statistically significant relationship between ESG score and Sustainability Committee ( $\beta_5 = 3.201$ ), with p-values  $< .01$  for both variables. In contrast to column 4, the Fixed Effects results in the fifth column did not show any statistically significant connection between Environmental Pillar and other explanatory variables. In column 6, the results showed a positive statistically significant relationship between the social pillar score and sustainability committee at 6.091. It also showed a significant positive relationship between the social pillar score and free float percentage at 0.148. Both relationships had their p-values recorded at  $< .01$ . Finally, the regression results in column 7 revealed that there was a positive and statistically significant connection between the Governance Pillar and Board Gender Diversity ( $\beta_2 = 0.552$ ) with p-value  $< .01$ , and the Governance Pillar and Board Independence ( $\beta_3 = 4.208$ ) with p-value  $< 1$ .

Contrary to hypotheses 1 and 4, neither Board Size nor CEO Board Chair Separation are significant predictors of composite ESG score and any of the sub pillars' score; therefore, H1 and H4 are firmly rejected. Board Gender Diversity is a significant predictor for aggregate ESG score and the Governance Pillar; therefore, hypothesis 2 is valid. Although significant, Board Independence has a weak relationship with only Governance Pillar; hence H3 can be supported. Hypotheses 5 is valid because the Sustainability Committee is significantly and positively associated with the composite ESG score and the Social Pillar. Finally, hypothesis 6 has a limited validity because of the free float percentage (diffused ownership structure).

This section studied the relationship between the Tobin Q and ESG performance. A pooled OLS regression (Model 2) was carried out to explore the relationship. The author integrated the company fixed effects into Model 2. Then, both time fixed effects and fixed effects within cross-sectional observations were considered

(Model 4). Model 4 was also used to execute results for individual ESG Pillar scores. The regression analyses are shown in Table 6.

Table 6. Regression analysis for firm performance (Tobin q)

Independent variables	Pooled OLS	Fixed effects	Fixed effects	Fixed effects	Fixed effects	Fixed effects
ESG score	-0.004(0.002)	-0.004 (0.002) *	-0.004 (0.002) *			
Environmental pillar score				0.000(0.001)		
Social pillar score					-0.005 (0.001) ***	
Governance pillar score						-0.001(0.001)
Board size	0.000(0.009)	0.024 (0.011) **	0.027 (0.010) ***	0.028 (0.010) ***	0.026 (0.010) ***	0.027 (0.010) ***
Board gender diversity	0.007 (0.003) ***	-0.003(0.003)	-0.005 (0.003) *	-0.006 (0.003) **	-0.005 (0.003) **	-0.005 (0.003) *
Board independence	0.204 (0.059) ***	0.045(0.052)	0.004(0.052)	-0.001(0.052)	0.004(0.051)	0.002(0.052)
CEO board chair separation	0.284 (0.057) ***	-0.030(0.052)	-0.017(0.050)	-0.012(0.050)	-0.015(0.049)	-0.014(0.050)
Sustainability committee	0.206 (0.064) ***	-0.040(0.049)	-0.039(0.047)	-0.050(0.047)	-0.021(0.047)	-0.049(0.047)
Free float percentage	0.001(0.001)	0.000(0.001)	-0.001(0.001)	-0.001(0.001)	0.000(0.001)	-0.001(0.001)
Ln (total assets)	-0.080(0.030) ***	-0.369 (0.074) ***	-0.416 (0.071) ***	-0.452 (0.069) ***	-0.399 (0.069) ***	-0.441 (0.070)***
Leverage	-0.001(0.001)	-0.002 (0.002)	-0.003(0.002)	-0.003(0.002)	-0.003 (0.002)	-0.003(0.002)
ROA	0.054 (0.004) ***	0.008 (0.003) ***	0.009 (0.002) ***	0.010 (0.002) ***	0.010 (0.002) ***	0.009 (0.002) ***
Constant	2.541(0.603) ***	11.192 (1.590) ***	10.606 (1.558) ***	11.285 (1.530) ***	10.257 (1.531) ***	11.077 (1.546) ***
No. of observation	504	504	504	504	504	504
Firm fixed effects	No	Yes	Yes	Yes	Yes	Yes
Year fixed effects	No	No	Yes	Yes	Yes	Yes
p-value	<.001	<.001	<.001	<.001	<.001	<.001
Adjusted R2	0.41					

Standard deviation error in parentheses; \*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .10$

The regression models showed statistically significant associations with the F statistics' p-values less than 0.01. The pooled OLS regression in the second column of Table 6 explained 41% of the variance in Tobin Q. The OLS results did not show any connection between the Tobin Q and the ESG score. After the author introduced the firm fixed effects to Model 2 (third column in Table 6), the ESG score showed a negative relationship, although weak, with Tobin Q. Also, the study analyzed both time and firm fixed effects using Model 4 in columns 4–7 in Table 6. In column 4, the Fixed Effects results present a negative and statistically significant (but weak) link between Tobin Q and ESG score at 0.004 with p-value < .1. The Fixed Effects results in columns 5 and 7 also did not show any statistically significant links of Tobin Q with Environmental and Governance Pillar scores. However, the results in column 6 indicated a negative but statistically significant connection between Tobin Q and Social Pillar score ( $\beta_1 = -0.005$ ) with a p-value < .01. In a nutshell, the results presented by Models 2 and 4 suggest that CSR performance is not a value driver in the logistics sector; therefore, Hypothesis 7 is invalid. Table 7 summarizes the hypothetical decisions drawn from the analyses. The assumed reasons underlying the acceptance and rejection of hypotheses are discussed in the preceding section of the study.

**Table 7. Summary of hypotheses**

Hypotheses	Decisions
<b>H1: Board size has a positive relationship with ESG performance in the logistics sector in Africa</b>	Rejected
<b>H2: Board gender diversity has a positive relationship with ESG performance in the logistics sector in Africa</b>	Accepted for composite ESG score and governance pillar
<b>H3: Board independence has a positive relationship with ESG performance in the logistics sector</b>	Accepted for governance pillar
<b>H4: CEO and board chair separation has a positive relationship with ESG performance in the logistics sector</b>	Rejected
<b>H5: The existence of a sustainability committee has a positive relationship with ESG performance score in the logistics sector</b>	Accepted for composite ESG score and social pillar
<b>H6: Ownership diffusion has a positive relationship with ESG performance in the logistics sector in Africa</b>	Accepted for social pillar
<b>H7: Sustainability performance has a positive relationship with the firm value in the logistics sector in Africa</b>	Rejected

## 4.4 Discussion

Based on the results, the board size and CEO board chair separation have no significant relation with CSR performance. Therefore, board size is not a predictor of CSR performance in the logistics sector. Thus, the conflicting views from (Allegrini and Greco, 2013) and (Hussain et al., 2018). Also, board composition is more important than board size concerning monitoring function. This finding validates previous findings by (Hussain et al., 2018), where there were insignificant relationships between board size and sustainability initiatives. Regarding the insignificant results for CEO and board chair separation, some previous studies (Michelon and Parbonetti 2012) had the same results.

Board gender diversity is positively connected to both CSR performance and governance performance. This finding aligns with many previous studies that showed a positive relationship between board gender diversity and CSR performance (Hussain et al., 2018; Naciti, 2019), and further support the fact that females effectively monitor firms. The findings validate that, female directors promote sustainability engagement, enhance corporate citizenship, and ensure stakeholder engagement. As stipulated by Bear et al. (2010), board diversity, with a real fusion of skills, experience, and abilities, is an excellent asset for firms, and it helps the board achieve better monitoring functions for CSR issues. Hence, confirmation to the assertion that female directors enhance board effectiveness and monitoring functions translates into higher CSR performance (Kiliç et al., 2015). Females might be perfect for improving the overall CSR and governance pillar score; respectively, they do not show any relevancy in the Environmental and Social pillar scores. The average of 11.49% females on corporate boards offers an insufficient number of female directors (i.e., currently 11.49% on average). Therefore, a higher number of female directors on corporate boards of logistics firms with greater empowerment may foster corporate environmental and social agenda (Post et al., 2011).

Further, board independence has a weak association with only the Governance Pillar score. This result is quite surprising since independent directors are assumed to be less exposed to shareholder pressure; thus, they are expected to balance better shareholders' and stakeholders' interests to contribute to the effective operation of the boards (Duru et al., 2016). Although there are some exceptions, most previous studies, for example, (Kiliç et al., 2015; Hussain et al., 2018), established a positive relationship between board independence and CSR engagement. The absence of solid predictability of this variable on CSR performance might be related to independent directors' quality or actual freedom since prior studies point out that genuinely independent directors create value by allocating resources. Also, the outcome may be related to the fact that a board with excessive separate director ratios may weaken its monitoring and controlling function.

Again, firms with a sustainability committee are expected to have higher CSR performance (both overall and social) than those that do not. This finding solidifies the outcomes of several studies in the past. The underlying reason is that a particular CSR committee is likely to have the necessary expertise and skills and be more committed to pursuing CSR initiatives on behalf of the corporations. Meanwhile, the findings show that CSR committees do not significantly influence CSR's Environmental and Governance Pillars. This finding confirms the relative effectiveness of CSR committees rather than in absolute terms. Logistics companies may face operational risks if a CSR committee malfunctions in the Environmental pillar. Logistics operations are shifting towards sustainable supply chain practices such as green packaging, green distribution, green warehousing, green transportation, and low-carbon logistics. It is estimated that the following practices will help eradicate the negative environmental impact of logistics operations while contributing to economic development (Khan et al., 2019). As a result, CSR committees are urged to prioritize ecological initiatives in the logistics sector to align with the corporate plan so that the CSR committee's effectiveness in the Governance Pillar will trigger the overall management structure to lean towards CSR orientation by shaping the management structure to help firms in the logistics sector with their human resource structure from top management to lower levels with a domino effect.

In addition, logistics firms with diffused ownership structures tend to show higher performance in the Social Pillar of ESG, based on the fact that shareholders are attracted to companies who are more socially responsible inclined. Some past research works, including (Kiliç et al., 2015), established a positive relationship between dispersed ownership structure and CSR commitment. However, the insignificant relationship between free float percentage and the Environmental Pillar might be attributed to the lack of interest of dispersed ownership structure in ecological issues, as it is a missing link in the CSR performance of the logistics sector in Africa. Because of stakeholder supervision of the logistic industry due to its environmental degradation tendencies, the broad shareholder base should also be concerned with the daily practices of the firms regarding these concerns.

Surprisingly, the results on the value-relevance of CSR performance did not yield a significant positive outcome. While the composite ESG score showed a weak negative connection with firm value, the Social Pillar of ESG recorded a robust negative relationship. Prior evidence from other studies on the association between CSR performance and corporate performance is also inconsistent as there are some positive results from (Lo and Sheu, 2007; Jo and Harjoto, 2011), negative (Crisostomo et al., 2011), and insignificant (Humphrey et al., 2012) outcomes. There might be some possible justifications for the lack of a significant

positive link between CSR performance and firm value. First, the stock exchange cannot adequately reflect firms' CSR practices and disclosures on share prices (Youn et al., 2015). Second, it might be because the logistics sector pursues non-financial objectives such as community development and corporate legitimacy rather than financial objectives out of CSR efforts (Wang and Sarkis, 2017). Third, shareholders consider CSR investment a fundamental obligation of logistics firms (Chen and Lee, 2017).

## 5. Chapter Five

### Conclusion, Recommendations, and Limitations

#### 5.1 Conclusion

In conclusion, results from the study stipulate that the composition or diversity of personnel included in the board of directors matters more than the number of members on the board because the number of members on the board does not yield any significance, as revealed by statistics results. The study also revealed that firms with diffused ownership structures are more capable of dealings involving stakeholders and their social concerns. The separation of CEOs and board chairs is irrelevant to CSR in the African logistics context because it does not affect CSR performance in any way. The inclusion of female directors mainly enhances the governance dimension and the overall CSR engagement and performance. Firms with CSR committees will outperform companies without CSR committees in terms of overall and social CSR indicators. Surprisingly, independent directors on the boards do not influence higher CSR performance. The results altogether show that firms with diffused ownership structures are more successful in addressing the social concerns of African stakeholders. None of the hypotheses tested in the previous chapter showed any significance with environmental indicators of CSR performance in the African logistics sector. In contrasting expectations, the study showed an insignificant association between CSR and firm value, justifying the need for further research on this subject matter. The theoretical implications of the findings imply that shareholder wealth may be at significant risk on the environmental and social risks that the firm might be exposed to due to the non-existence of CSR committee and female directors on the company's board. In line with stakeholder theory, female directors and CSR committees are the perfect tools for logistics firms to successfully and effectively address stakeholders' concerns and meet their expectations. Despite being essential for corporate governance, independent directors are not significant to the CSR achievements of firms. Therefore, they do not consider stakeholders' non-financial interests due to their strict focus on the firms' financial interests or

negligence on environmental and social issues. Also, the current research tested the link between CSR performance and firm value; the results did not show a significant association between CSR performance and firm value, thus contrasting with the argument as to whether CSR is a value addition or subtraction agent to firm value.

## 5.2 Recommendations

This section discusses the practicality of the results from the statistical analysis applied to logistics firms in Africa and other developing countries. As seen from the results, there are high CSR performers, yet some inferior performers suggest that the logistics sector is a vast and diverse sector with average engagement with CSR initiatives. Therefore, practices of high-performing firms can be used as precedents for low-performing firms to improve their CSR practices. Secondly, based on the empirical results, female directors and the existence of the CSR committee in the firm influence companies to undertake CSR initiatives. This finding justifies the view that female directors bring incremental skills, expertise, and perspectives to the boards regarding the firm's sensitivity towards CSR initiatives. And prove that women can be to a firm's corporate board; thus, firms are urged to appoint more women directors or set a certain women ratio in board size. Given this, firms should diversify their boardrooms to include women when making CSR-related decisions. According to the descriptive statistics, the female director ratio of logistics firms is, 11.49% ranging between 0 and 50%. This means companies should do better by introducing female directors with the necessary skills. Also, firms without a CSR committee should set up one to guide them through their corporate social responsibility agendas. The existence of CSR committees in their proper state will help logistics firms to align their CSR practices with the UN sustainable development goals and help eradicate ecological concerns of stakeholders. These committees can also structure the internal operations to aid the daily operations to greener supply chain practices. According to the descriptive statistics, more than half of the firms operating in Africa do not have a CSR committee; thus, this study should inform their knowledge of the value of having a CSR committee in the company. Third, the national logistics sector representatives or the transport ministry should set a precedent by launching innovative CSR activities to stimulate the sector's edge for such initiatives. Fourth, stakeholders should show their awareness of and sensitivity to logistics operations' undesired environmental and social outcomes until logistics firms take legitimate actions. Fifth, the insignificant association between all test variables and environmental indicators of CSR performance raises many questions casting doubts over the intended results of female and independent directors and CSR committees on environmental issues among logistics companies in Africa. Due to the sector's heavy dependency on energy and fossil fuel, addressing environmental concerns should be a significant priority of the board of directors

and CSR committees to introduce innovative and environmentally friendly solutions such as alternative energy sources and recyclable materials, which might go a long way to contribute to the legitimacy of the sector in society. Sixth, CSR performance does not contribute to the market value or the firm's overall value. The main reason is that firms may incur additional operational costs to lean towards greener environmental practices, putting shareholder wealth at risk. Therefore, investors may think that these practices do not contribute to the firms' profitability and do not value their CSR performance. However, their negligence to greener environmental practices may equally pose some stakeholder threats to the firm. Furthermore, investors might be unaware of firms' CSR practices which means that share prices do not reflect CSR engagement of firms realistically. This finding points to communication malfunction within the firms concerning CSR engagements. Thus, firms should introduce effective traditional communication techniques, including websites and social media, with investors and other stakeholders to enhance the stock markets' functioning because investors will have more information to aid their trading activities.

In addition to implications to firms, boards, CSR committees, female and independent directors, sector representatives, investors, and stakeholders, the study also suggests implications for policymakers in various African countries. In countries with operational requirements for firms, policymakers can consider the study's findings and incorporate them into their laws or code of conduct. The rules can enforce a mandatory establishment of CSR committees or meeting a certain female proportion in their boards of directors, as has already been done in some European countries. Besides, the policymakers may also specify characteristics of genuinely independent directors to act independently from the management to consider all stakeholders, including shareholders.

### 5.3 Limitations of the study

Although the study presents essential findings in its empirical and theoretical state for logistics firms in Africa and other developing countries, it has a few limitations: time interval of the study, sampling, and data constraints. The sample consists of the logistics companies listed in the TR Eikon database between 2011 and 2018; therefore, the consequences should be considered and evaluated accordingly. The time constraint is because firms' CSR practices might evolve, which will render the study irrelevant at a point in time. The sampling limitation requires caution while generalizing the results over non-listed and small logistics firms. Besides, the reader should be cautious when applying the findings from this study to non-logistics firms since firm and board characteristics might differ from sector to sector. Therefore, it will be worth testing the hypothesized relationships in non-listed and small logistics firms and other industries. Data constraints



limitation has to do with the fact that the data used in the study lags behind time. The ESG data in the TR Eikon database is published in a two-year duration. The author could not use the 2020 data because there are many lost variables in the African context as data is covid-19 biased. This limitation allows the interested researcher to repeat this study in 2022. It should be noted that the set of variables incorporated in this study is not a significant predictor of the Environmental Pillar; thus, there is the need to research factors that can model environmental performance in the logistics sector.

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