Environmental, Social, Governance Risks and Stock Market Performance in Africa

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Abstract

The study employed ex-pos facto research design and secondary source of data was used and the data was sourced from World Bank Data Indicators. The study focused on five African countries which were chosen based on their nominal gross domestic product which are Egypt, Nigeria, South Africa, Algeria, Ethiopia (NEESA) and over time series of 27 years ranging from 1996 to 2022 and this constitutes one hundred and thirty-five observations. The environmental, social and governance risk was capture using three years rolling standard deviation while the stock market performance was measure as ratio of market capitalization of listed domestic companies to gross domestic product. The study found short run the dynamic changes in the previous value of stock market performance, governance risk and environmental risk could lead to negative changes in the present stock market performance and while previous values of social risk has positive effect on stock market performance. The study concluded that there is bi-causality between the stock market performance and environmental, social and governance risks in Africa. The study recommended that ESG factors and overall sustainability outlook when evaluating investment opportunities most especially in the African stock markets. In addition, the regulatory authorities in the stock markets should promote ESG integration, transparency and accountability in order to attract more investors and enhance stock market performance in African countries.

Keywords: Environmental risk, Social risk, Governance risks, Stock market performance

1. Introduction

ESG activities have experienced a significant rise in prominence in academia, business, and government. Meyer and Hess (2018) assert that the early proponents of socially responsible investing (SRI) were the primary individuals who initially included ESG factors in their investment strategies. Therefore, the ESG framework is frequently cited as the “pillars of sustainability” (Ewens & Townsend 2020). The terms “ethical”, “green”, “impact”, “mission”, “responsible”, “socially responsible”, “sustainable”, and “values” encompass concepts that are relevant to strategies aimed at attaining a balanced state of corporate responsibility, social fairness, and environmental standards. These strategies aim to provide advantages for society while attaining sustainable competitive profitability in the long run. Przychodzen et al. (2016) have pointed out that there has been a substantial expansion in the worldwide socially responsible investment (SRI) business in recent years. Umar et al. (2020) have observed a worldwide surge in attention given to ESG aspects. The ESG criteria provide a structured framework for assessing the managerial quality of potential investment opportunities. The three fundamental pillars of ESG encompass the domains of “environmental”, “social”, and

"governance". The environmental factors encompassed within a corporate context are its waste management strategies, the utilization of renewable energy resources, and the dedication to mitigating greenhouse gas emissions. Social factors include the observance of human rights, the elimination of child labour, the provision of fair salaries, and the establishment of safe working conditions.

In recent years, there has been increasing acknowledgement of the significance of Environmental, Social, and Governance (ESG) factors in investment decision-making globally. ESG criteria are used by investors to assess their investments' environmental, social and ethical impact, considering a firm's performance along environmental, social, and governance dimensions. They have been associated – to an increasing extent – with financial performance, with studies suggesting that companies with strong ESG practices tend to outperform their peers over the long term (Bassen et al., 2019; Khan et al., 2020). Examining the connection between ESG risk and stock market performance is especially crucial in Africa, where social and environmental issues are prevalent. Africa is a continent with a wide range of natural conditions, social dynamics, and political systems. This offers investors regionally specific possibilities as well as problems. Concerns about social inequality, political instability, resource scarcity, climate change, and poor governance are all the rage in African markets right now (Wu et al., 2018; Msimang et al., 2020). The present knowledge of the link between ESG risk and stock market performance in Africa is inadequate, despite the rising worldwide trend towards ESG investment. Although studies in this area are increasing, there hasn't been much on the subject, with the majority of studies concentrating on established markets. Given Africa's distinct socioeconomic and environmental context, as well as the possible ramifications for investors and the region's financial markets, this disparity is significant.

By analyzing the connection between ESG risk and stock market performance in Africa, this research aims to close this gap. Its specific goal is to investigate how ESG issues affect stock market volatility and returns, as well as how they affect African firms' valuation and investment choices. This research adds to the body of knowledge on sustainable finance and investing in developing nations by examining the relationship between ESG risk and stock market performance. The findings have implications for African governments, investors, and corporate stakeholders. The literature on ESG risk and stock market performance will be reviewed, the African setting will be briefly discussed, and the research methods used in this study will be described in the parts that follow. We want to address the following queries in this study. 1. What effect does environmental risk have on the performance of the African stock market? 2. What effect does social risk have on the performance of the African stock market? 3. What effect does governance risk have on the performance of the African stock market? The study concentrates its analysis on African nations to address these research topics.

2. Literature Review

Concept of ESG

The United Nations Principles of Responsible Investment report introduced the idea of ESG and advised investors to use ESG scores as a major determinant when making investment choices. In reality, investors and management consulting companies often utilize ESG ratings as a key indicator to comprehend a company's entire CSR performance. In essence, ESG assesses and aggregates the results of a company's corporate governance, social, and environmental activities. The environmental performance of a company shows how hard it works to cut emissions and resource use. A company's social performance reveals how well it upholds community connections, human rights, high employment standards, and product responsibility. Last but not least, a company's corporate governance performance reveals the obligations and privileges of the management team (governance structure). Although the notion of ESG emerged relatively late, there is a wealth of research examining the relationship between ESG and operational performance or business value (Miralles et al., 2018. & Han et al., 2016).

Environmental risk and stock market performance in Africa

Africa is home to a diverse range of habitats, including deserts, savannas, tropical rainforests, and coastal areas, that support the lifestyles of millions of people and provide vital ecosystem services. However, rapid urbanization, industrialization, and population growth have harmed the environment and increased human susceptibility to environmental hazards. Climate change is one of Africa's most pressing environmental problems since it is threatening infrastructure, water supply, and agricultural productivity via rising temperatures, changing rainfall patterns, and an increase in extreme weather events (IPCC, 2019). Deforestation and land degradation are significant problems that lead to the loss of biodiversity and ecosystem services because of logging, mining, and agricultural development (FAO, 2020).

Environmental issues may have a direct effect on a company's financial performance if it operates in an industry like mining, tourism, agriculture, or energy that largely depends on natural resources and ecosystem services. Examples of climate-related disasters that might impair crop yields and profitability for agribusiness firms include droughts and floods, which could disrupt agricultural supply chains (UNEP, 2020). Similarly, environmental policies intended to encourage renewable energy sources and decrease greenhouse gas emissions may result in greater operational expenditures and regulatory risks for enterprises in the energy sector (IEA, 2021). Because environmental challenges have larger social and economic ramifications, they may have an indirect impact on stock market performance. For instance, social inequality, food security, and civil unrest may all be made worse by the depletion of natural resources and environmental degradation, which may lead to political unrest and economic uncertainty (World Bank, 2019). These factors might weaken investor confidence, increase market volatility, and harm the performance of the stock markets of the affected countries.

Notwithstanding the challenges posed by environmental risks, Africa has opportunities for sustainable investment and finance. An increasing number of investors are realizing the importance of taking the environment into account when making investing decisions. This is not just to lower risk but also to capitalize on emerging opportunities in finance for conservation, renewable energy, and sustainable agriculture (UNEP FI, 2020). Thanks to sustainable finance tools like impact investment, sustainable indexes, and green bonds, investors now have more chances to support environmentally aware projects and companies in Africa (IISD, 2021). However, many obstacles prevent the integration of environmental risk into stock market performance research and investment decision-making in Africa. These include a lack of knowledge and skills among investors and financial institutions to assess and manage environmental risks, inadequate regulatory frameworks and enforcement mechanisms, and restricted data availability and transparency on environmental performance metrics (GIZ, 2018). To solve these concerns, governments, regulatory agencies, financial institutions, civil society organizations, and the corporate community must collaborate to strengthen environmental governance, develop sustainable finance practices, and enhance transparency and reporting requirements.

Social risk and stock market performance in Africa

Environmental, social, and governance (ESG) variables are non-financial measures that evaluate a company's ability to handle the possibilities and risks related to these areas (PRI, 2020). Social risk in Africa refers to the potential negative impacts of social factors on businesses and financial markets. These social components include a wide range of issues, including social inequality, labor relations, political unpredictability, human rights, and interpersonal relationships in communities (UNICEF, 2020). These social risks might significantly hinder businesses operating in Africa and have a range of consequences for stock market performance.

Social inequality is one of the most significant social dangers that Africa is now facing (World Bank, 2020). The continent is renowned for having high levels of economic inequality, with a significant portion of the population living below the poverty line (UNDP, 2020). The

detrimental effects of social disparity on social cohesion, economic growth, and political stability may lead to an increase in social tensions, crime rates, and political instability (World Bank, 2020). Businesses operating in countries with high levels of social inequality may face challenges related to labor relations, worker productivity, and consumer demand. These issues might impact the performance and profitability of these businesses on the stock market (UNCTAD, 2020). Labor relations are another social risk that might have an effect on businesses and the performance of the stock market in Africa (ILO, 2020). The workforce is diverse across the continent, with varying degrees of training, abilities, and national labor market regulations (ILO, 2020). Strikes, employee churn, and labor disputes are possible roadblocks for companies doing business in Africa. Production schedules, supply chain operations, and overall business performance might all be impacted by these problems (ILO, 2020). Furthermore, if businesses are seen as engaging in unethical labor practices such as child labor, forced labor, or discrimination, they may risk losing their good reputation and the confidence of investors (ILO, 2020).

Human rights also represent a significant social risk in Africa (UN, 2020). particularly in countries with weak administrative frameworks and low standards of respect for human rights (UN, 2020). Businesses operating under these conditions could run into issues with human rights breaches, such as forced evictions, land grabs, and labor laws being broken. Legal repercussions, damage to a company's reputation, and operational disruptions might all arise from these problems (OHCHR, 2020). Investors and financial markets are becoming more aware of the need to consider social concerns when making investment choices to lower social risks and enhance long-term financial performance (PRI, 2020). Community interactions provide another social risk that might affect firms' and the stock market's performance in Africa (World Bank, 2020). The continent is home to a multitude of communities, each with distinctive cultural, social, and economic characteristics (World Bank, 2020). Businesses operating in Africa must deal with many facets of community relations, including disputes over resources, land rights, and community resistance to development projects (UNDP, 2020). Ineffective community relations management may lead to regulatory issues, project delays, and reputational damage, all of which can have a detrimental impact on investor confidence and business profitability (UNDP, 2020).

Political unrest also presents a major threat to society in Africa (World Bank, 2020). Particularly in countries experiencing political unrest, civil conflicts, and weak governance structures (World Bank, 2020). Enterprises functioning in politically unstable environments may face challenges from shifting regulations, shifting policies, and security risks. Corporate operations, investment decisions, and stock market performance might all be impacted by these problems (World Bank, 2020). Additionally, businesses that are seen as supporting or benefiting from despotic or dishonest regimes may face the danger of losing investor confidence and their good reputation (World Bank, 2020). Through increased operational expenses, supply chain disruptions, reputational damage, legal responsibility, and political instability, these risks have the potential to undermine investor confidence and reduce business profitability (World Bank, 2020). As a result, investors and the financial markets are beginning to understand how important it is to include social elements in investment decision-making processes to lower social risks and enhance long-term financial performance (PRI, 2020).

Governance Risk and stock market performance in Africa

Governance risk in Africa encompasses several aspects related to political stability, institutional effectiveness, corruption, rule of law, and quality of governance (Kaufmann, et al. 2009). These factors have a significant effect on business operations, investor confidence, and ultimately the prosperity of the stock market across the continent. Many African countries suffer from inadequate governance structures and ineffective regulatory frameworks, which may lead to governance risks that jeopardize company operations and limit economic progress (World Bank, 2020). For instance, a culture that promotes dishonest business practices, fraud, and corruption

may be fostered by inadequate regulatory oversight and lax enforcement procedures, eroding investor confidence and negatively impacting stock market performance. Political unpredictability and volatility pose significant governance risks in Africa and might have a significant effect on businesses and the financial markets (Hegde, et al. 2021). Political instability is indicated by frequent changes in government, civil unrest, and social upheaval. Political instability may interrupt business operations, deter foreign investment, and lead to capital flight. The uncertainty surrounding political transitions and governance changes may lead to stock market volatility as investors react to perceived risks and uncertainties associated with political developments.

Corruption is a serious governance issue in Africa that might negatively affect businesses and stock market performance (Transparency International, 2021). Examples of corruption that undermines investor confidence warps market competition, and jeopardizes the rule of law include bribery, embezzlement, and nepotism. Companies that function in severely corrupt environments may struggle with unfair commercial practices, regulatory roadblocks, and reputational risks. The company's long-term health and stock market value may be impacted by these problems. The rule of law and institutional effectiveness are critical components of governance that impact the performance of the African stock market (World Bank, 2020). International investment may be discouraged and investor confidence damaged by insufficient legal frameworks, incompetent courts, and a lack of property rights protection. Furthermore, inadequate institutional capacity to protect investors' interests, carry out contracts, and resolve conflicts may expose businesses to risks and uncertainties that might lead to subpar stock market performance.

Africa's governance risk poses serious challenges to businesses and financial institutions, impacting stock market performance via a variety of processes. To strengthen governance frameworks, enhance regulatory frameworks, promote accountability and transparency, combat corruption, and uphold the rule of law, significant reforms are required to manage governance risks (World Bank, 2020). African countries that effectively manage governance risks may attract investment, support corporate development, and improve stock market performance. This will help ensure the sustained economic growth of the continent.

2.2 Theoretical reviews

Stakeholder Theory

Businesses engage with a broad variety of stakeholders, including governments, communities, suppliers, shareholders, and employees, according to the Stakeholder Theory (Freeman, 1984). According to this theory, businesses must account for a larger range of stakeholders than just their shareholders, whose interests and well-being are touched by the company's activities. Regulatory bodies, local communities, and environmental advocacy groups are a few of the important players that influence how corporations operate in terms of the environment. Companies that prioritize environmental sustainability and adopt eco-friendly practices have a higher chance of gaining the trust and support of stakeholders, which enhances their reputation with investors. This positive outlook may lead to long-term financial success and higher stock market prices (Jones, 1995).

In contrast, social stakeholders including employees, customers, and civil society organizations have an interest in corporate social responsibility initiatives that support fair labor practices, diversity and inclusion, and community engagement. Companies that demonstrate a commitment to social responsibility are seen as more moral and trustworthy, which attracts investors who are conscious of social issues and improves stock market performance (Margolis & Walsh, 2003). Stakeholders are essential in ensuring that businesses adhere to good corporate governance practices, which include transparency, accountability, and ethical behavior. These stakeholders include shareholders, regulators, and trade associations. Companies with strong governance

structures are seen as less risky and more reliable investments, which boosts investor confidence and improves stock market performance, according to Shleifer and Vishny (1997).

Agency Theory

The Agency Theory examines the potential effects on organizational behavior and performance of conflicts of interest between principals (shareholders) and agents (management) in companies (Jensen & Meckling, 1976). This interaction is at the center of the theory. Using the Agency Theory, the study emphasizes how important corporate governance frameworks are for encouraging stakeholder alignment between management and shareholders' interests. The Agency Theory emphasizes how important it is to monitor and control management's activities to ensure that the long-term environmental implications of business operations are taken into consideration. Shareholders and external stakeholders rely on corporate governance instruments including executive compensation plans, board monitoring, and environmental reporting to hold management accountable for environmental performance. According to Hermalin and Weisbach (1998), companies with robust governance policies that promote environmental stewardship are more likely to minimize environmental risks and outperform the stock market. The Agency Theory highlights how crucial it is for managers to give different stakeholders' interests top priority and consider the social implications of corporate decisions. Effective corporate governance techniques include social performance metrics, employee board involvement, and stakeholder engagement processes. These techniques may help align management's incentives with the organization's social objectives. When social elements are integrated into governance frameworks, businesses are better equipped to manage social risks, cultivate stakeholder trust, and enhance stock market performance (Hillman & Dalziel, 2003).

To minimize agency conflicts and prevent governance mistakes, the Agency Theory highlights the need to establish clear lines of accountability and oversight. Strong corporate governance practices that encourage moral behavior and assist in aligning management's interests with those of shareholders include independent board oversight, open disclosure standards, and robust internal controls. Stock market performance is enhanced by effective governance measures because investors see them as more reliable and trustworthy (Fama & Jensen, 1983).

Institutional Theory

The institutional theory studies how institutional environments—such as social norms, rules, and values—affect how organizations behave and what kinds of outcomes they generate (DiMaggio & Powell, 1983). The present study used the Institutional Theory to examine the relationship between institutional characteristics and the adoption of ESG practices by firms, as well as the impact of these practices on stock market outcomes. From an environmental perspective, the Institutional Theory highlights how institutional pressures and regulatory frameworks affect how firms behave in the environment. Companies operating in countries with stringent environmental regulations and strong enforcement mechanisms are inclined to adopt proactive environmental strategies to comply with legal requirements and meet stakeholder expectations. International organizations, trade groups, and civil society organizations may exert institutional pressure on businesses to enhance their environmental performance, therefore safeguarding their reputation and credibility in the marketplace. Companies that align their environmental policies with institutional norms and expectations are more likely to achieve positive stock market outcomes, according to Suchman (1995). From a social perspective, the Institutional Theory emphasizes how cultural norms and societal values influence firms' social responsibility initiatives. Companies that operate in African countries with a history of community participation, social cohesion, and ethical business practices are more likely to include social concerns in their corporate strategies. Businesses may enhance their legitimacy, reputation, and social capital via social activities that align with institutional norms and values, hence increasing their stock market performance (Scott, 2014).

When seen through the perspective of governance, the Institutional Theory highlights the importance of institutional structures and regulatory frameworks in shaping firms' governance practices. Companies operating in countries with well-established regulatory bodies, corporate governance guidelines, and enforcement protocols are more likely to adopt good governance practices to comply with legal requirements and meet stakeholder expectations. To attract investment and enhance stock market performance, corporations may also be compelled to upgrade their governance frameworks by institutional constraints arising from investor regulations, industry best practices, and international governance standards. Consequently, firms that align their governance practices with institutional norms and expectations have a higher chance of achieving positive stock market outcomes (Davis, Schoorman, & Donaldson, 1997).

2.3 Empirical Reviews

Al-Hiyari and Kolsi (2021) looked at whether shareholders get value-relevant data on ESG performance to help with stock price decisions. Based on a cross-national sample of non-financial companies chosen from ten Middle East and North African (MENA) countries between 2013 and 2019, the study finds evidence that ESG performance practices are positively priced by market participants and add incremental information content to book value of equity (BVE) and earnings. This evidence is based on the price specification of the Ohlson (1995) valuation model. When the research breaks down the entire ESG performance into its component pieces, governance practice is revealed to be more value-relevant than social practice, and the environmental pillar is judged to be value (ir)relevant to shareholders. The return valuation model findings support and enhance the pricing model specification. The results suggest that social capital and institutional frameworks have a bigger impact on how businesses affect the environment. Several tests confirm that these results are reliable. Overall, our empirical results demonstrate that market participants consider ESG performance when assessing a firm's value in the MENA region. The study's findings might have a variety of effects on managers, investors, and regulatory bodies.

The performance of portfolios consisting of Turkish and European stocks that are put together using environmental, social, and governance (ESG) ratings was examined by Emre and Ash (2020). To create the portfolios, each company is first independently rated according to ESG (environmental, social, and governance) standards, which are then arranged in decreasing order. The performance of eight portfolios is then analyzed, where 10% of the stocks in the "Top" portfolio are those with the highest ratings, and 10% of the stocks in the "Bottom" portfolio are those with the lowest ratings. Finally, the capital asset pricing model (CAPM) and the Fama-French three-factor model serve as performance assessment standards. Two portfolios that use ESG-based rankings outperform the market index, based on the results of the CAPM research. The Bottom GOV and Bottom ESG portfolios outperform the market excess return by 0.53% and 0.57%, respectively, based on the results of the three-factor model. The overall findings of the article demonstrate the lack of correlation between socially responsible investing (SRI) and portfolio performance. The efficient market hypothesis, which maintains that prices reflect all available information, is compatible with these findings.

Moneer and Mohd (2022) examined the dynamic volatility relationship of major environmental, social, and governance (ESG) stock indexes from May 2010 to March 2021. The empirical analysis focuses on five major S&P ESG stock indexes from the US, Latin America, Europe, the Middle East and Africa, and Asia Pacific. The data shows that ESG stock indexes in Latin America, Africa, and the Middle East are net shock transmitters, whereas those in the Americas and Asia Pacific are net volatility receivers. The research also finds that group pairings from the US, Latin America, and Europe had stronger bilateral intercorrelations than group pairs from the Middle East, Africa, and Asia Pacific areas. These results imply that established and/or growing areas are not immune to contagion, which has implications for risk and portfolio management.

Sandu (2023) used South Africa as an example and looked at the performance of five portfolios built in line with the level of integration of governance, social, and environmental principles throughout four years, starting on January 2, 2019, and ending on December 29, 2022. When constructing the portfolios, the two aspects of ESG ratings—responsible and irresponsible—as well as the two levels of ESG implication—partially and significantly—were taken into account. A portfolio with no reporting that was intended just for non-engaged firms was also included. Since several recent studies comparing the performance of ESG and non-ESG portfolios have shown contradictory results, this debate is still open. I start by looking at whether ESG-integrated portfolios make sense for developing countries like South Africa, which have a lot of social and economic challenges. The study included four risk-adjusted measures to evaluate performance: Jensen's alpha, Treynor ratio, Modigliani-squared, and Sharpe ratio. This study indicates that the performance of portfolios is negatively impacted by ESG. Overall performance of the ESG Irresponsible portfolios was better than that of their peers. The study's findings, which contrast five ESG portfolios' performances in the context of South Africa, contribute to and improve the corpus of academic literature.

Yunus et al. (2022) examined comovements between stock market returns and investments that take Environmental, Social, and Governance (ESG) concerns into account by examining the correlations between the two returns in both time and frequency space. The study examined the relationships between ESG equities and the standard stock market using daily data for 19 industrialized and 19 developing countries from 2007 to 2021. The results show significant comovement tendencies between ESG returns and market returns, particularly during periods of financial turmoil, in all countries across a variety of frequencies, time scales, and sample events. The majority of the time, comovements between stock returns and ESG returns are positive (in-phase) in developing countries and negative (out-of-phase) in affluent ones. This implies that the inclusion of ESG businesses in a diversified portfolio will have a significant positive influence on portfolio performance in affluent nations but a modest impact in poor countries.

Khoury et al. (2021) looked at the impact of environmental, social, and governance (ESG) on bank performance (FP) in the Middle East, North Africa, and Turkey (MENAT) region. The sample consists of 46 listed banks from 2007 to 2019. FP is measured using market indicators (Tobin's Q Stock Return) and accounting metrics (Return on Equity, Return on Assets). The study looks at the effect of ESG and its quadratic term on FP after controlling for bank-specific, macroeconomic, and financial development variables. The results support a non-linear ESG–FP relationship. Extra ESG investments are beneficial—up to a point. It's fascinating to notice that the financial development elements stand out even if the ESG pillars show unique patterns. While there is a convex connection between the environmental pillar and market return, there is a concave association between accounting performance and the governance pillar. The pillars, the FP measure, and the ESG level are the three vectors that define the ESG–FP connection. Banks should identify ESG tipping points to justify their investments and consider efficient returns.

Using R/S (Rescaled Range) analysis and fractional integration techniques, Guglielmo et al. (2022) examine the persistence of two sets of 12 ESG (Environmental, Social, and Governance) and conventional stock price indices from the MSCI (Morgan Stanley Capital International) database over the period 2007–2020 for a large number of both developed and emerging markets. It can be inferred from both sets of data that there are no discernible differences in the degree of persistence and dynamic behavior between the two types of indices. For example, the BRICS (Brazil, Russia, India, China, and South Africa) are the emerging markets under review that show more persistence, suggesting that they are less efficient and hence provide more opportunities for profitable trading strategies. These findings might be explained by the "camouflage" and "washing" of different sorts of enterprises (green, blue, pink, social, and Sustainable Development Goals—SDG) in the setting of relatively lax ESG reporting regulations.

Gavrilakis and Floros (2023) examined the link between the market capitalization, price-to-book value, Sharpe ratio, and ESG score of large-cap European firms and their stock performance. We investigate a panel data collection that spans six European countries (Portugal, Italy, Greece, Spain, France, and Germany) and spans the years 2010–2020. The size of a corporation often hurts the stock returns of Greek and French businesses. Except for Italy, investors in any European nation are not in danger of losing money when they choose to invest in firms that have high ESG rankings. Based on the findings of the study, investors have an edge over investing in highly ESG-scoring companies by selecting smaller companies with a higher price-to-book value and Sharpe ratio, which increases the likelihood of generating superior returns. Additionally, there seems to be a strong inverse relationship between stock return and ESG performance, which makes Italian businesses especially susceptible to ESG issues. This significant result was confirmed by doing a robustness test across all of Europe using the Euronext100 index. Finally, the study shows no indication that ESG causes herding in our selected sample (this is not the case for Greece and France), even though we offer evidence of ESG herding behavior during the COVID-19 outbreak in Portugal, Italy, and Greece.

Rooh et al. (2023) examined the decision-making process of investors for portfolio creation on the Pakistan Stock Exchange, with a particular emphasis on the incorporation of environmental, social, and governance (ESG) factors. A quantitative research approach has been used for this project. The theories have been developed and tested using the updated surveys. The data was acquired from individual Pakistani investors. The present study used SmartPLS-SEM to quantitatively assess the data gathered from a sample of 421 out of 500 respondents. Based on the data that is presently available, investors who trade on the Pakistan Stock Exchange are significantly impacted by ESG concerns. The study's findings have theoretical and real-world ramifications for regulators, investors, and businesses that operate in developing nations. The study's findings provide a clear illustration of how significant ESG concerns are to investors. This work significantly advanced the field of behavioral finance with a focus on ESG-related issues. This study contributes to the corpus of research on ESG features by modifying the ESG components from the United Nations Global Compact (UNGC) and the Thomson Reuters Corporate Responsibility Index (TRCRI) using the Theory of Planned Behavior (TPB). Additionally, it provides stakeholders involved in the dynamic sector of sustainable finance in developing countries with valuable information.

Ersoy et al. (2022) examined the impact of ESG and ESG pillar scores (environmental, social, and governance) on the market value of U.S. commercial banks between 2016 and 2020 using both linear and non-linear panel regression models. In addition, the study used market value as a measure of bank value and considered the effects of COVID-19. While there is a U-shaped link between the market value and The Environment Pillar Score (EPS), there is an inverted U-shaped correlation between the market value and ESG and The Social Pillar Score (SPS). The study's conclusions should be noted by legislators and investment managers who want to optimize bank market value while abiding by ESG regulations.

Fakoya and Molatji's (2020) research examined whether mutual fund managers, acting on behalf of their trustees, take environmental, social, and governance (ESG) factors into account when choosing which industries to invest in. This procedure resulted in the selection of the top 20 asset managers (mutual fund companies) in South Africa that are listed on the Johannesburg Stock Exchange (JSE). The paper identified the top 30 JSE-listed companies (in the large industrial, equipment, and machinery sectors, excluding unlisted and service-oriented companies) where trustees' funds were invested (a total of 28 companies between 2007 and 2017). The Equity Fund Fact Sheets 2017 of the mutual fund companies represent recent investment focus. While ESG data was collected from integrated and sustainability reports that were accessible on the websites of the chosen companies, financial data was taken from the IRESS database. In this study, panel data analysis was used. The results show that return on equity (ROE) and the ESG proxies—

water consumption, employee health, and safety cost (number of work-related fatalities), and the percentage of women on corporate boards—have a minor adverse association. Given that the chosen companies do not follow the United Nations Principle of Responsible Investment (UN PRI) guideline, it may be concluded that asset managers place a higher priority on increasing shareholder profits than on considering environmental, social, and governance (ESG) issues. The research concludes that a distaste for advice on responsible investment does not drive corporations to modify their unsustainable business practices.

Sherwood and Pollard (2017) look at actual data on country- and region-specific integrated emerging market indices that are both ESG and non-ESG. This research looks at historical returns, beta, the Sortino, Sharpe, the Conditional Value at Risk, skewness, and the Omega ratio for both ESG and nonESG integrated emerging market indexes. The data measurement includes a paired t-test analysis. The results of the research demonstrate a significant benefit based on ESG integration. The results of the research indicate that, as compared to non-ESG equity investments, institutional investors may be able to get higher returns and lower downside risk from ESG emerging market stocks.

Magubane and Wesi (2023) investigated the impact of ESG investment on the stock performance of financial service companies in South Africa (SA) during the COVID-19 pandemic. This has significant ramifications for the potential value of ESG investments during difficult times. To do this, the study makes use of panel nonlinear autoregressive distributed lags or PNARDL. ESG investment has a major effect on stock performance, according to the report. The error term of the PNARDL suggests that ESG investment has a significant effect on the share prices of South African financial sector companies. A 1% rise in ESG investments, cetiris paribus, increased stock price returns by 5% on average, according to the PNARDL. This significant finding has broad ramifications. It implies that ESG, another crucial resilience factor, has a major impact on the stock performance of financial services businesses. Moreover, the PNARDL found that during COVID-19, stock price returns were positively impacted by an increase in ESG investment and negatively impacted by a decline in ESG investment. Accordingly, the study indicates that financial service organizations need to increase their ESG investment in times of crisis.

Yoon et al. (2018) investigate whether corporate social responsibility (CSR) has a substantial impact on a company's market value in Korea, a growing market. The study uses environmental, social, and corporate governance (ESG) evaluations to evaluate CSR performances and examine how they impact company value. In line with previous studies conducted on developed countries, the research concludes that a company's CSR practices have a positive and significant influence on its market. However, the impact on share prices may differ based on the characteristics of the firm. enterprises in environmentally sensitive industries see a lesser value-creating benefit from corporate social responsibility (CSR) than do enterprises outside of these sectors. More precisely, corporate governance policies negatively affect the firm value of environmentally concerned businesses. Additionally, investors give other firms' governance methods minimal weight; only the chaebols' governance policies significantly boost market value. This finding highlights the value-adding advantages of the governance structure reformation in the former. This paper's main addition to the literature is the confirmation of a positive relationship between value and corporate social responsibility (CSR) in emerging economies. This relationship has important policy and welfare implications for nations where governments play a major role in promoting CSR. The economic foundation of the Korean government's involvement in the Chaebol Reform may lie in the broader value effect of corporate social responsibility.

Al-Hiyari et al. (2022) looked at the possibility of a positive correlation between business investment efficiency (IE) and environmental, social, and governance (ESG) performance in emerging countries. It also examines if having a diverse board of directors may lessen the ESG–IE relationship. A cross-national sample of listed businesses from seven developing countries

between 2011 and 2019 is used in this research. The fixed effect panel regression is used by the authors to empirically test their hypotheses. To address potential endogeneity problems, the authors also use a delayed model using a two-stage Heckman approach (1979). A two-stage least squares regression analysis was carried out as an additional robustness check. This paper claims that businesses with higher ESG performance also make more cost-effective investments. Interestingly, our study indicates that board cultural diversity negatively moderates the impact of ESG performance on IE for businesses that operate in situations where overinvestment is widespread. This research suggests that managers' propensity to overinvest is less countered by ESG performance when there are more foreign directors on business boards. However, the authors do not find this sort of evidence in businesses that are prone to underinvestment. When endogeneity concerns are taken into consideration and an alternative IE measure is used, these findings hold valid.

Sahut and Pasquini-Descomps (2015) examined the possible effects on the monthly market return of Swiss, US, and UK stocks that news-based scores in ESG (Environmental, Social, and Corporate Governance) may have had between 2007 and 2011. The poll indicates that the overall ESG score in the UK only differs significantly. The analysis also shows that, although there are differences between the countries, the governance, economic, environmental, labor, human rights, society, and products sub-category ratings of GRI have a small but significant impact on the stock's performance over short periods or on particular sectors. Finally, the results of the non-parametric kernel regression indicate that the link between changes in an ESG score and a stock's performance is probably not linear.

Próchniak et al.'s research from 2023 looks at the economic side of sustainability by analyzing the stock exchange interface of the financial markets, the influence of capital market participants, and the processes supporting a fiscal framework. Because sustainability indexes only include well-established stock exchanges, there is less stock exchange comparative analysis available, and doing such research is more challenging. This study uses multivariate analysis to investigate the potential that African stock markets may promote sustainability. An empirical study on a sample of 15 African stock exchanges was conducted at the end of 2020 using 5-year interval data from Q1 of 2021. A total of twenty-two criteria were selected based on how well they would support sustainability. Through exploratory factor analysis, two significant sustainability drivers of differentiation and classified exchanges—hard and soft—were identified. The K-means classification technique, which corroborated the data, showed that of the four identified homogeneous groups, the Johannesburg Stock Exchange, the Nigerian Stock Exchange, and the Egyptian Exchange looked to be the most dominating group. Two smaller, potentially reinforced groups followed the dominating group. The research demonstrated the significance of identifying the primary drivers of sustainability by examining the materiality of the factors in an African context.

Al-Hiyari and Kolsi (2023) looked at whether shareholders get value-relevant data on ESG performance to help with stock price decisions. Based on a cross-national sample of non-financial companies chosen from ten Middle East and North African (MENA) countries between 2013 and 2019, the study finds evidence that ESG performance practices are positively priced by market participants and add incremental information content to book value of equity (BVE) and earnings. This evidence is based on the price specification of the Ohlson (1995) valuation model. When the research breaks down the entire ESG performance into its component pieces, governance practice is revealed to be more value-relevant than social practice, and the environmental pillar is judged to be value (ir)relevant to shareholders. The return valuation model findings support and enhance the pricing model specification. Our research indicates that social capital and institutional frameworks have a stronger impact on a firm's environmental effect. Several tests confirm that these results are reliable. Overall, the empirical results demonstrate that market participants consider ESG performance when assessing a firm's value in

the MENA region. Our findings might have a variety of effects on management, investors, and regulatory bodies.

3. Methodology

The study employed ex-pos facto research design and secondary source of data was used and the data was sourced from World Bank Data Indicators. The study focused on five African countries which were chosen based on their nominal gross domestic product which are Egypt, Nigeria, South Africa, Algeria, Ethiopia (NEESA) and over time series of 27 years ranging from 1996 to 2022 and this constitutes one hundred and thirty-five observations. The environmental, social and governance risk was capture using three years rolling standard deviation while the stock market performance was measure as ratio of market capitalization of listed domestic companies to gross domestic product. The study adopted Panel Vector Autoregressive Model. This was chosen based on the output of the unit root test conducted. The model estimation was specified as;

4. Result and Discussion

This section presents the estimation of the model specified in section three and they are discussed in line with previous studies. The Table 1 summarized the descriptive result of the variables of interest.

Table 1: Descriptive Statistics

	ENVR	GOVR	SOCR	SP
Mean	0.242359	0.233940	4.987866	44.15988
Median	0.059177	0.119240	0.455350	0.250836
Maximum	4.180221	1.084786	43.58059	322.7110
Minimum	0.000979	0.011991	0.035218	0.000000
Std. Dev.	0.631250	0.259654	11.88894	81.96877
Skewness	4.610880	1.798280	2.336558	1.877414
Kurtosis	25.13269	5.220655	6.681087	5.243811
Jarque-Bera	3161.933	98.26606	194.6362	105.2338
Probability	0.000000	0.000000	0.000000	0.000000

Note: envr represents environmental risk, govr represents governance risk, socr indicates social risk, sp indicates stock market performance.

Source: Authors' Computation, (2024).

Table 1 shows the summarized descriptive statistics computed on the series of environmental, social and governance risks on stock market performance. It is remarkable that both the median and average values are positive in each case. This means these variables displayed an increasing tendency through the period of investigation. Also the study reveals that the stock market performance has the highest standard deviation value and this implies it is the most volatile variable among the variable under consideration. In a different token, the governance risk is associated lowest standard deviation value and it denotes that is the least volatile variable among the variable under consideration. The scales of skewness with respect to all variables are positively skewed and this implies that they have large values over a short period. The values of kurtosis that are larger than 3 and this indicates that they are leptokurtic and therefore, they have tin tail in their distribution pattern, suggesting that there are presence of outliers or large values in the expected future date. More so, the probability values corresponded to Jarque Bera statistics with respect to all the variables are lesser than 5 percent, meaning that the distribution pattern of these variables is not normal. Thus, the study proceeds to conduct the correlation coefficient among the explanatory variables and the result is presented in the Table 2.

Table 2: Correlation Analysis

	ENVR	GOVR	SOCR
ENVR	1	0.1114	0.6772
GOVR	0.1114	1	0.2174
SOCR	0.6772	0.2174	1

Source: Author's Computation, (2024)

The result from the correlation matrix showed the association between each pair of explanatory variables and it is very clear from the result that the correlation coefficient is 0.6772 which indicate weak correlation. The interpretation of the Pearson correlation would follow Guilford rule of thumb which is < 0.2 is a negligible correlation, 0.2 to 0.4 is low correlation, 0.4 to 0.7 is a moderate correlation, 0.7 to 0.9 is a high correlation > 0.9 is a very high correlation. This implies that the assumption of multicollinearity among the independent variables can be refuted. The study proceeds to test the stationarity among the variables and the result of the stationarity is documented in the Table 3.

Table 3: Panel Unit Root Test

	Im-Pesaran-Shin		ADF - Fisher Chi-square	
	Level		Level	
	Stat	(P-val)	Stat	(P-val)
envr	-2.28942	0.0110	27.8535	0.0019
socr	-6.13728	0.0000	55.2982	0.0000
govr	-2.28942	0.0110	27.8535	0.0019
sp	-2.12074	0.0170	16.6892	0.0335

Source: Author's Computation, (2024)

The unit root test is conducted under ADF - Fisher Chi-square and Im-Pesaran-Shin unit root tests which confirm the order of integration of each variable. The null hypotheses is that the series are not stationary. The hypotheses were rejected, when the ADF - Fisher Chi-square-statistic and Im-Pesaran-Shin- Statistic are larger than the associated critical value at 5 percent in absolute form or the associated probability value is less than 5 percent (0.05). It is explicit that the the associated probability values of ADF - Fisher Chi-square-statistic and Im-Pesaran-Shin-Statistic with respect to environmental risk, social risk, governance risk and stock market performance are lesser than 0.05. This simply implies that environmental risk, social risk, governance risk and stock market performance are stationary at level and this is simply denoted as I(0). Thus, the study estimate the panel VAR. In the course of the estimation, the study select the optimal lag using modified akaike information criterion, modified Schwarz information criterion and modified Hanna Quinn information criterion. The panel VAR approach is restricted to lag one. Thus, the study estimated panel VAR using Generalized Method of Moment (GMM). Table 4 provides the summarized results.

Table 4: Short Run Dynamic Effect

Variables	Coef.	Std. Err.	z	P>|z|
Panel A: sp				
Sp(-1)	-.0199835	.1334586	-0.15	0.881
govr (-1)	-81.0484	22.40419	-3.62	0.000
envr (-1)	-206.8784	18.23756	-11.34	0.000
socr (-1)	15.62134	1.59114	9.82	0.000
Panel B: govr				
Sp (-1)	.0010949	.0001973	5.55	0.000
govr (-1)	1.315017	.0419694	31.33	0.000
envr |	3904027	.0361806	10.79	0.000
socr (-1)	-.0317545	.0031516	-10.08	0.000

Panel C: envr				
sp (-1)	.0061772	.0010008	6.17	0.000
govr (-1)	.9381699	.2347044	4.00	0.000
envr (-1)	2.579754	.1587851	16.25	0.000
socr (-1)	-.1060691	.0131935	-8.04	0.000
Panel D: socr				
sp (-1)	.0707143	.0103358	6.84	0.000
govr (-1)	4.583174	2.112519	2.17	0.030
envr (-1)	12.47049	1.978694	6.30	0.000
socr (-1)	.4391894	.1761388	2.49	0.013

Source: Authors' computation, (2024)

The results of the interrelationship between stock market performance, environmental risk, social risk and governance risk. This provides a test on the hypothesis that there is dynamic relationship between these variables. It is revealed in panel A; that the lag one value of stock market performance inverse and insignificant relationship with stock market performance, while lag one value of governance risk and environmental risk have negative and significant effect on stock market performance. On the other hand, social risk has positive and significant effect on stock market performance. Also, the panel B reveals that the lag one value of stock market performance, governance risk, and environmental risk have positive and significant effect on governance risk while the lag one value of social risk has negative but significant on governance risk. Panel C reveals that current value of environmental risk is positively and significantly influenced by immediately previous value of stock market performance, governance risk, and environmental risk. On the other hand, the lag one value of the social risk has negative but significant effect on environmental risk. Panel D showed that the lag value of stock market performance, governance risk, environmental risk and social risk have positive effect on current value of social risk. The study proceeded to examine granger causality between each pair of the variables in the model using the wald test technique. The result was presented in Table 5.

Table 5: Granger Causality

Panel A: govr	chi2	df	Prob >chi2
govr	13.087	1	0.000
envr	128.676	1	0.000
socr	96.387	1	0.000
ALL	128.800	3	0.000
Panel B: govr			
sp	30.781	1	0.000
envr	116.433	1	0.000
socr	101.517	1	0.000
ALL	121.534	3	0.000
Panel C: envr			
sp	38.096	1	0.000
govr	15.978	1	0.000
socr	64.633	1	0.000
ALL	74.426	3	0.000
Panel: D: socr			
Sp	46.809	1	0.000

govr	4.707	1	0.030
envr	39.720	1	0.000
ALL	88.539	3	0.000

Source: Authors' Computation, (2024)

In the first compartment, all p-values are significant and this implies that environmental risk, social risk and governance risk granger cause stock market performance. Thus, it means environmental risk, social risk and governance risk can be used in predicting stock market performance. The p-values in the second compartments are also significant and this implies that stock market performance, environmental risk, and social risk can be used to explain the future behaviour of the governance risk. In the third compartment, all the p-values are significant and this implies that stock market performance, governance risk and social risk granger cause environmental risk. In the fourth compartment all the p-values are significant and this means that stock market performance, governance risk, and environmental risk are useful tool for predicting social risk in the future.

Discussion of Findings

The study found short run the dynamic changes in the previous value of stock market performance, governance risk and environmental risk could lead to negative changes in the present stock market performance and while previous values of social risk has positive effect on stock market performance. This partially conform with Yunus et al. (2022). In addition, it was found that there is bi-causality between the stock market performance and environmental, social and governance risks in Africa and this conform with the findings of Magubane and Wesi (2023). This indicates that ESG risks can predict stock market performance and the implication of this is that investors may consider ESG factors such as environmental disaster, social disputes, and corruption etcetera when making investment decision and countries with ESG performance may attract more investment in the stock market which may lead increase in the stock market performance. Also stock market performance predict the ESG risks and this indicates that countries with strong stock market performance are often subjected to rigorous scrutiny which may lead to disclosure of ESG-related information transparently in order to give the investors an insight on ESG risks.

5. Conclusion

The study found short run the dynamic changes in the previous value of stock market performance, governance risk and environmental risk could lead to negative changes in the present stock market performance and while previous values of social risk has positive effect on stock market performance. The study concluded that there is bi-causality between the stock market performance and environmental, social and governance risks in Africa. The study recommended that ESG factors and overall sustainability outlook when evaluating investment opportunities most especially in the African stock markets. In addition, the regulatory authorities in the stock markets should promote ESG integration, transparency and accountability in order to attract more investors and enhance stock market performance in African countries. One of the limitation of the study is that it only focused on some selected African countries. Thus, other studies can be re-conducted considering the some selected from developed economy.

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