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ARTICLE

Corporate ESG Disclosure in Agribusiness: Effects on Market Value and Investor Behavior

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ABSTRACT

This paper examines the impact of market value and investor behaviour associated with Environmental, Social and Governance (ESG) disclosure in agribusiness. ESG disclosure is an important area of corporate reporting, as investors are increasingly focused on sustainability, accountability, and good governance when making investment decisions. The paper is based on a 5-year longitudinal database for 150 publicly traded agribusiness firms with a total of 750 firm-year observations. The results show that one point increase in the ESG disclosure score is related to an increase in market capitalization by about USD 0.45 billion ($p = 0.000$). In addition, ESG disclosure has a positive relationship with investor sentiment, with a coefficient of 0.35 ($p = 0.000$), meaning that the more transparency there is, the more positive the investors' perception. The results also confirm that corporate governance quality is positively associated with the quality and reliability of ESG disclosure, thus promoting long-term investment. Overall, this study underlines the increasing importance of ESG factors in shaping the market performance and investor engagement of agribusiness. By presenting empirical evidence on the relationship, this study informs the sustainable finance literature and has practical implications for managers, policymakers, and stakeholders interested in shaping business growth that is aligned with responsible and transparent business practices.

Keywords: ESG Disclosure; Agribusiness; Market Capitalization; Investor Behavior; Corporate Governance; Sustainability Reporting; Investor Sentiment

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1. Introduction

Environmental, Social and Governance (ESG) factors have become very important topics in many industries, especially in the last few years. Each of these factors constitutes a whole solution of viewing how a company functions regarding its impact on the environment, its attitude to the social challenges, and the level of its good governance. Initially, the aspects of ESG were principally the matters of interest of the socially responsible investors or ethical investment funds. Nevertheless, since awareness in the world concerning sustainability, corporate responsibility, and governance-related issues has grown, ESG disclosures have become an essential aspect of the corporate strategy of every company in any industry. Of these, the agribusiness industry is the most crucial since it has a direct impact on the environment as well as the social aspects of the world's societies [1].

Agribusiness, which has a diverse scope and includes many aspects like agriculture, food production, and forestry, is particularly sensitive to the ESG factors. There are a number of environmental issues that are experienced in the industry, including land degradation, water shortage and greenhouse gas emissions due to the inevitability of farming activities. The needs of agribusiness firms that should be handled socially are related to the labour rights, community involvement, and equal access to resources. There also exists the problem of governance, particularly in areas that are still developing where the tendency of governance issues such as corruption, transparency, or even ineffective regulatory control may bring about a decline in sustainable practice [2].

With the world moving towards consumer sustainability, businesses involved in agribusiness are being pressured to promote responsible business operations. The corporate ESG disclosure enables such firms to show that they are devoted to environmental sustainability, social responsibility, and good governance. When it comes to ESG Disclosure, openness generated through disclosures can help agribusiness firms gain trust with stakeholders, improve the reputation of their brands and direct more capital to the company. Nevertheless, the quality and uniformity of ESG disclosures are not very widespread and the effects of disclosures on financial performance, especially market value, and investor behaviour continue to attract ongoing research.

ESG disclosure is the same concept as how companies report their risks, opportunities, and ESG-related performances. The ESG reporting has become more relevant over the past few years due to the voluntary programs, as well as compulsory regulations in some countries. Some global reports, like the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), have come up with standards that help these businesses standardize their environmental, social, and governance reports. Furthermore, as the level of concern with climate change, social justice and corporate governance increases, so is the agitation of stakeholders (through investors, consumers and regulators) toward such transparency [3].

In the case of agribusinesses, the ESG disclosure is of special importance due to several reasons. The industry is also rife in natural resources as it is with climate change threatening to eradicate them, including land, water, and biodiversity. Secondly, their customers and investors are increasingly particular, with most of them preferring to patronize enterprises that are willing to engage in sustainable business. Finally, agribusinesses that would report on their ESG Disclosure would help reduce potential loss or damage in terms of regulatory breaches, reputation, and operational weaknesses.

The nexus between the ESG disclosure and market value has been the focus of various scholarly studies. The conventional approach of finance asserts that shareholder wealth maximization is the major goal of a company. In that regard, the market value, which is expressed in terms of the stock price or total market capitalization, or other financial indicators, is one of the important signs of financial performance and investor confidence in the firm [4].

Upon doing a study, the companies that perform strongly on the ESG front have been found to perform better than the rest of the companies on the stock market. The reasoning is uncomplicated; companies that deal with ESG risks competently are hence in a better place to satisfy long-term grounded development. As an example, the company that values environmental sustainability can potentially pay less on energy expenditure and on waste disposal, and the company whose social responsibility is high can experience a better relationship with its employees and community [5]. Better decision-making and risk management as a result of good governance practices can also maximize shareholders' value.

In addition, investor attitude is important to the establishment of value in the market. A vein of ethical ESG consideration is already seeing ESG factors used in increasing capacity by investors to take them into consideration when making decisions as well as the assumption that a high ESG rating will mean that the firm is at less risk of economic or reputational calamity in the future. Consequently, a favourable disclosure of ESG may accommodate long-term investors, hence increasing the stock price and market value of a business enterprise.

But ESG disclosure does not always have a direct effect on market value. Although positive correlation is observed in some studies between ESG disclosure and financial performance, the negative result is also provided by others who believe the relation is multifaceted, situationally conditional, and contingent on various outside factors, including the type of industry, geography, and regulatory framework. This begs critical questions regarding the extent to which ESG disclosures increase market value individually and in agribusiness in particular.

Another area that is particularly important where confrontation of ESG disclosure can be used is investor behaviour. In the last 10 years or so, the increased shift to sustainability by investors has been evident Pension funds and mutual funds are growing institutional investors who put their capital into companies that match their values and ESG standards. This has especially been the case as more and more investors have turned to impact investing where the overall aim is to observe a social or environmental impact in addition to the returns on the investment [6].

Due to the nature of agribusiness, the risk that companies take to control the environment such as the changes in climate and depletion has caused particular concern among investors. Labour conditions and engagement of the community are also social aspects to be considered. With an increaseing number of investors trying to diversify their portfolio by investing in line with sustainable development goals (SDGs), there are agribusinesses that are expected to receive more consideration by socially responsible investors (SRI) and funds that measure their impact [7].

Meanwhile, institutional investors continue to rely more and more on ESG measurements in an attempt to understand how agribusiness companies rate in long-term risk assessment. A company that has a weak ESG score can experience increased operational risk, regulatory oversight, and lack access to capital which may further affect its share value and total performance in the market negatively. Conversely, firms with thorough and accurate ESG disclosures are seen as more transparent and credible and this may increase the confidence of investors and improve access to capital.

Although increasing attention is given to ESG disclosure activities in different industries, not much research has been conducted about its implications in the agribusiness sector. Moreover, the body of research on the effects of ESG disclosure on market value and investor behaviour is dispersed and incomplete (not even agribusiness) [8]. The current research has mainly focused on big companies or individual industries leaving a gap in knowledge on the agribusiness firm regarding the unique challenges and opportunities of ESG disclosure in the corporations [9].

The aagribusiness industry is facing increasing pressure to implement Environmental, Social, Governance (ESG) practices as the issue of sustainability, social responsibility, and corporate governance has gained more focus and attention. Although it is important to consider the ESG factors, adequate and transparent disclosures are still not consistent, which presents a risk of failure in investor confidence, market value, and long-term sustainability for agribusiness firms. In this paper, we examine whether countries that practice ESG disclosure and those that do not have the same effects on market value and investor activated in publicly traded agribusiness firms.

The principal aims of this research are to:

Investigate the correlation between ESG disclosure and market value in the agriculture industry.

Evaluate how investor sentiment is being affected by the quality of ESG disclosure.

Find out how corporate governance helps to make ESG disclosures effective.

Research Questions

1. Investigate how ESG disclosure is related to the market value of agribusiness companies.
2. Review the impact of ESG disclosure on investor behaviour such as making investment decisions and stock performance.
3. Analyse how ESG disclosure helps to attract long term, sustainable investors.

The research design used in this study is a quantitative one—the researcher will use panel data regression analysis to monitor the interconnection between ESG disclosure and key market performance items (market capitalization, stock price volatility, ROA). The sample comprises publicly-traded agribusiness firms over five years and makes up a sample of 750 observations. The data sources are ESG scores based on the ESG platforms such as Sustainalytics, MSCI ESG Ratings as well as annual report data and stock markets.

The research will contribute to new knowledge in terms of the effect of ESG disclosure on market value and investor behaviour in agribusiness. The contribution of the study is as follows:

- Presenting a viable empirical evidence of the financial effect of ESG disclosure in the agribusiness industry.
- Providing a clear insight into how investor moods change depending on the ESG practices.
- Demonstrating how effective corporate governance can make your ESG transparent and appeal to long-term investors.

2. Literature Review

2.1. ESG in Agribusiness

Environmental, Social and Governance (ESG) has taken center stage in current corporate responsibility, sustainability and investor decision-making. The need to enhance corporate communication with the increasing global awareness of the effects that corporate activities have on the environment, society, and governance systems is one of the factors that has developed ESG reporting into a staple aspect of corporate communication. These ESG dimensions are particularly important to agribusinesses because their operations have direct implications for the environment, social challenges as far as labor is concerned, to governance challenges which may include corruption and poor regulatory frameworks.

Agribusiness is the industry that is located on the border of multiple important global challenges including climate change, food security, and rural development. Globally the population is increasing and the same is the demand for food production, which puts an enormous pressure on resources and farming systems. Responding to this trend, agribusinesses incorporate sustainable practices and report their ESG Disclosure even more frequently, as well as disclose it in hopes of receiving new investments and enhancing their reputation and competitive advantage. Nonetheless, there is relatively less literature explored on the impact of ESG disclosure on the market value and investor behavior in the agribusiness sector despite the significance of the ESG factors in the sector [10].

2.2. ESG Disclosure in Corporate Governance

Corporate governance can be defined as the structure, procedures and interactions that control and manage corporate affairs. Regarding ESG, corporate governance stakeholder is a critical element in establishing how ESG disclosure is effective. ESG variables related to governance, including the presence of diversity in the board, payments given to executives, rights of shareholders, and the transparency of the firms, can considerably influence the general ESG Disclosure and, therefore the performance of that firm in the market.

Research indicates that effective corporate governance results in superior decision-making procedure, risk management, and accountability. Transparent and responsible governance practices are important issues in agribusiness because the structures of governance are usually challenged with cases of corruption or the absence of regulation. Study proposes that good governance firms tend to deliver better ESG reporting since they are in a better position to cope with the intricacies of ESG problems and their reports due to good governance [11].

2.3. Disclosure of ESG and Market Price

The discussion of the association between ESG disclosure and market value is one of the most controversial in the ESG literature. Market value (financial) is the value of the company in the market in terms of the value of the share of stock actually issued. According to research, the higher market value of such businesses is attributed to companies that have higher ESG Disclosure and this is underpinned by the following factors [12].

Investors can be less risk-averse with firms with strong ESG strategies as they are more equipped against risks in terms of environment, social, and governance. With the ESG issues becoming more and more associated with financial performance, such companies are perceived to possess a superior long-term sustainability that can lead to higher confidence in the market.

The presence of an ESG profile gives a firm an excellent reputation, which would create consumer preference and customer loyalty. According to the efforts by scholars, high scores in ESG rating lead to a better financial performance of companies because of their sustainability and ethically committed business standards [13].

Recently, access to capital has been easier when the companies performed well with respect to ESG, because the investors and the lenders are inclined to provide their capital to the company with low exposure to risk and a higher probability of success in the future. According to the study by the researcher, companies that disclose their ESG-related information better are characterized by a lower cost of capital and a higher ability to raise capital [14].

Within the context of agribusiness, ESG disclosure is integral in investment receiving, especially since the industry tends to be volatile itself due to various external factors including weather patterns, the instability of commodity prices and the rise or fall of international trade policies. Agribusiness companies capable of thorough ESG reporting can prove their capability to address said risks, which could increase their market value.

2.4. Behavior of the Investors + ESG disclosure

The behavior of investors has changed considerably over recent years, and more investors increasingly consider the ESG criteria when making their investment decisions. This trend is also associated with a broader shift towards sustainable investing whereby investors want to create a positive social and environmental impact in addition to expecting financial returns. According to a study by Chen, it is also demonstrated that investors tend to prefer companies that have high ESG scores as they are believed to be smaller risks and more likely to result in sustainable returns of their investments [15].

In addition, the trend towards impact investing, whereby investors are not only seeking financial gains but also need social impact, has been especially remarkable in fields such as agribusiness where sustainability efforts are directly going into the long-run value-creation. Environmental and social performance is crucial to the attitude of an investor towards the agribusiness firms. To exemplify, investors can have a higher propensity to invest in businesses that specialize in eco-friendly agriculture methods, economical use of resources, and their treatment of employees [16].

But the correlation between ESG disclosure and investor behavior is not necessarily that. Although it has been documented that robust ESG disclosure has the ability to attract sustainable investment, the excellence of the disclosure is a factor as well. Researchers have revealed that there is a more positive response when the disclosure is associated with a high-quality ESG that is transparent, reliable, and consistent with the investor capital ethical standards.

2.5. Emerging Market ESG Disclosure

The impact of ESG disclosure on the market value and investor behavior may be very different in different localities especially across developed and emerging markets. Agribusiness companies are at risk of not having enough regulatory measures, the state of infrastructure, or even governance in emerging markets, and that may influence the quality and reliability of ESG reporting. Nevertheless, the disclosure of ESG also offers a great opportunity that will enable agribusinesses to cut through the noise, to welcome global investors, and to access funding with a focus on sustainable operation [17].

In their topic on the role of ESG in economies of emerging markets, Alfonso, Scholars discovered that there is a possibility that an emerging market company with excellent Environmental, Social, and Governance (ESG) performance in these markets is more likely to perform better than its peers in attracting foreign investment. Increased transparency and disclosure to deal with the abuses like deforestation, land rights, and water management can help agribusinesses in countries with developing economies including those in some regions of Latin America, Africa, and Southeast Asia. These companies can get international investors who are exploring opportunities with the developing markets more closely in the areas of sustainable development goals (SDGs) [18].

2.6. Research Gap

Although past studies on the impact of ESG disclosure on other industries have been high, specifically in finance, energy, and technology sectors, studies on the agribusiness industry still lack a comprehensive study on the industry. Furthermore, the available literature is mainly devoted to ESG of big corporations whereas the current state of affairs in relation to the role of ESG practice in market value and investor behavior of companies in the agribusiness category, especially agribusiness companies in the emerging economies, is relatively less discussed [19].

ESG has been studied most often in developed markets as well with less attention paid to the impact of ESG disclosure on the agribusiness companies across these regions where governance structures and transparency can vary considerably. The existing margin of research on ESG disclosure of agribusiness and its direct effects on investor behavior is very high and the study attempts to contend that margin by conjuring the outcome of the ESG disclosure on market value and investor sentiment of the agribusiness sector.

In order to fill the above gaps, the following hypotheses are put forward:

H1: *Quality of the disclosure improves the market value of the agribusiness firms in emerging markets.*

Earlier research demonstrated that there exists a positive correlation between sustainability practices and market value. Companies that have good ESG scores have better prospects in terms of profitability, reduced risks of any operational problems, and better market performance.

H2: *ESG disclosure transparency and reliability have a large impact on Investor Sentiment in the agribusiness sector.*

Institutional investors give a greater consideration to environmental performance and corporate governance as they are becoming increasingly important in affecting investment decision-making. Qualitative disclosure of ESG enhances credibility of investors as well as brings in socially conscious investments.

H3: *Good corporate governance has a positive influence on quality ESG disclosure of agribusiness firms.*

With well-established governance structures, there are high chances that these firms will present transparent and reliable governance reports. Governance also plays an important role in making ESG disclosures not only compliant but also as evidence of company commitment to long-term sustainability.

2.7. Theoretical Framework

The study is informed by the Stakeholder theory and the Signaling theory that is adopted as the foundation of the research.

Stakeholder Theory presupposes that companies are meant to bring value to everyone rather than just the shareholders by considering factors of the employees, customers, suppliers and the society at large. The disclosure of ESG in the case of agribusiness is one that gives the firms the opportunity to express their intention to improve on issues that are of concern to the various stakeholders, which will in turn influence the behavior of investors as well as the market performance [20].

Signaling theory has it that a firm employs a signal (eg. Communicate (via ESG disclosures) about their value and credibility to other stakeholders, and investors. The possibility of quality reporting of ESG is a signal to the investors that a company is ready to pursue good governance and sustainability practices, and this can also be reflected in both positive investor behavior and even increased market value of the company [21].

The theoretical approach to the present study is represented by the Signaling Theory and Stakeholder Theory. Stakeholder Theory refers to the fact that any business should take into account the interests of all stakeholders (shareholders, employees, communities), so it directly determines ESG disclosure. According to Signaling Theory, the quality of ESG disclosure can be used as a signal of a company that is committed to sustainability and good governance and thus builds its credibility to attract investors. This paper will analyses the use of ESG disclosure as a signal by agribusiness firms to communicate their value to investors using two complementary frameworks, namely that they help the firms on how the signals can and do influence investor behavior and market performance.

3. Methodology

3.1. Research Design

This study uses a quantitative type of research design given that it is suitable when analysing the correlation between the ESG disclosure and an associated market value plus the behaviour of investors in the agribusiness. The design is most appropriate when it comes to conceiving hypotheses related to the dependence and causality of the focus variables that are investigated, namely, ESG Disclosure, market value, and investor behaviour, based on the empirical evidence presented by the financial and ESG disclosure reports.

The proposed research is causal-comparative in seeking to determine the relationship between the disclosure of ESG of some agribusiness firms and performance and investor behaviour. This will be attained by obtaining information on a large number of agribusiness companies over a series of years, which will enable the determination of trends and connections between the ESG releases and their financial performance [22].

3.2. Data Collection

Sample Selection

The population that will be sampled in this study includes listed agribusiness firms on the global and emergeing markets. The choice of the agribusiness industry is based on its dependence on natural resources and abundant environmental and social consequences that make it a vital industry in disclosure of ESGs.

Inclusion Criteria:

Publicly traded companies located in the agribusiness industry (so as to have access to financial data and ESG disclosures).

Companies that have had at least 5 years of ESG data to enable time series analysis

Organizations that are currently included in global sustainability indices (e.g. the Dow Jones Sustainability Index or Sustainability Yearbook) or publicly traded on large stock exchanges like the New York Stock Exchange (NYSE), the London Stock Exchange (LSE), or Emerging Market Exchanges [23].

Exclusion Criteria:

Non-listed companies, since ESG information is not always reported publicly by the non-listed companies.

Companies which fail to report ESG information, or where such information lacks rigour in terms of detailed, auditable reporting of annual performance on ESG [24].

The treatment of missing data was done using listwise deletion which involved the exclusion of firms that did not have complete information in over two consecutive years. This left at the end with a total of 150 firms over a period of five years that gave a total of 750 observations. The sample includes 750 publicly traded agribusiness firms listed on the major global exchanges, New York Stock Exchange (NYSE), London Stock Exchange (LSE) and other big emerging markets exchanges. The selection of companies was made through the following criteria: they have to be included in one of the globally recognized sustainability indexes (e.g., Dow Jones Sustainability Index) and have at least five years of consistent ESG data available. Data collection will be carried out between 2016 and 2023. Sustainalytics data, MSCI ESG Ratings as well as Refinitiv data were applied. Duplication was corrected and standardisation processes implemented to obtain consistent comparisons in all the variables and ESG ratings.

Data collection process is explained in **Figure 1**.

3.2.1. ESG Data

ESG sources and information about the selected firms are being gathered by using well-known ESG rating agencies and platforms like:

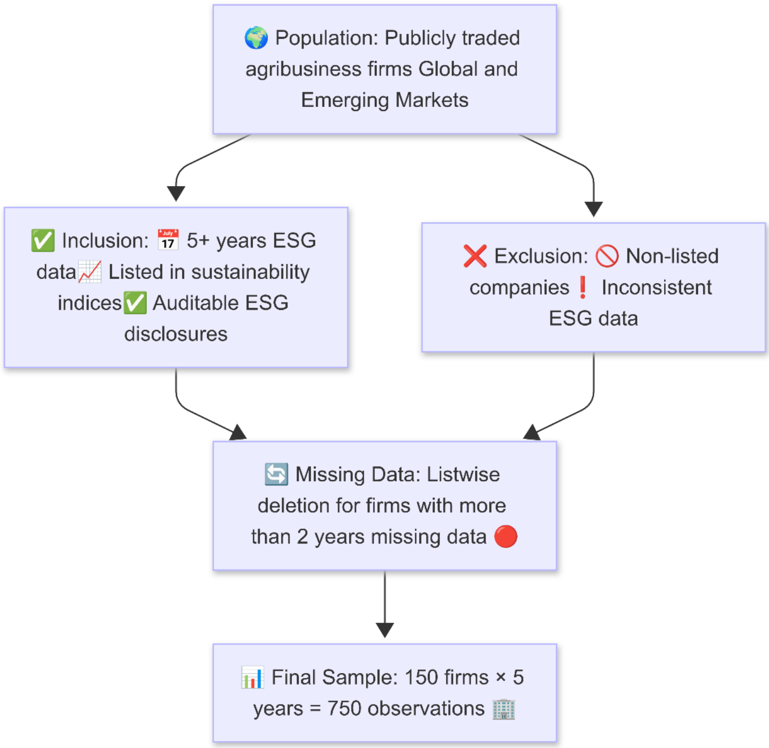

Figure 1. Data Collection Process.

It offers an in-depth rating and scorecard on numerous ESG considerations such as environmental impact, social responsibility, and governance procedures.

MSCI ESG Ratings: This is another source that also ranks ESG Disclosure in the different sectors among which agribusiness is included and allocates a score on how a company manages ESG risks and opportunities.

Refinitiv ESG Data: It will be used to gauge the quality of ESG disclosure by the companies by using the in-depth ESG Disclosure metrics of different environmental and social dimensions available on this platform.

Furthermore, the annual sustainability reports, the corporate social responsibility (CSR) reports, and the integrated annual reports published by the companies will be analysed to get more detailed information about particular ESG activities and practices launched by the companies [25].

3.2.2. Market Value and Investor Behaviour Data

Market Capitalization is a measurement of Market value which represents the total value of outstanding stock of a company which is computed as number of outstanding shares multiplied by price per share. Financial gauges of market value include:

Market Capitalization: This refers to the overall value of a firm in the market which is obtained by the stock price at the time multiplied by the outstanding number of shares. Market capitalization is also a benchmark to the value of a company (market value) and investor confidence.

VOLUMS-Stock Price Volatility: The volatility of stock prices is utilized as a gauge of risk to an agribusiness firm, as it is assumed that the lower the volatility is, the more stable market and the confidence that investors may have in a company due to its ESG practices.

Return on Assets (ROA): Here, ROA is employed to determine how well a firm is able to produce revenue relative to its resources, and this is used as a tool to show how well a company is doing when looked at in relation to ESG disclosure.

With regards to investor behaviour, study gathers information on:

Stock Trading Volumes: It is a liquidity measure and the level of investor reaction in the market. The trade volume increase can serve as an indicator of investor attitude shift to ESG-disclosing companies [25].

Investor Sentiment Indices: Public sentiment towards agribusiness companies that can be estimated based on investor sentiment indices or by reading sentiment in social media (e.g. Twitter, websites of major news outlets following the stock market and other market news) will also be investigated.

Analysts Information and Reports: A report by analysts who issue a rating of ESG Disclosure will be included to know how the ESG disclosure impacts the investor confidence and decision [26].

Market Capitalization can mainly represent Market Value (MV) and is the total value of the company outstanding shares in the market. Such a metric depicts the monetary value of a firm according to the stock exchange. The Stock Price Volatility is an excellent risk measure; however, its application is limited to a few exclusive situations where it is utilized as an explanatory variable, i.e., in Investor Behaviour model. In the analysis, ROA is introduced as a performance measure of any given asset but it is not directly added to the Market Value model.

3.3. Measurements and Definitions of the Variables

3.3.1. Measurement on ESG disclosure

The independent variable in this study is ESG Disclosure, the indicator of which consists of a few key dimensions, where each dimension covers one of the aspects of ESG Disclosure:

Environmental (E): This is measured by the actions of the companies of cutting down carbon emissions, how they manage waste and other water savings practices as well as the green technology used.

Social (S): This is measured in terms of labour practices of firms, standards of health and safety, community relations, human rights policies and responsibility of their product.

Governance (G): Governance is gauged in terms of board diversity, executive compensation package, shareholder rights and decision-making transparency and regulatory number-crunching [27].

The ESG agencies define each dimension on a scale (e.g. 0–100) where high scores are performance well in a specific dimension. These individual dimensions are then aggregated to obtain an overall ESG score which will be employed as an ESG disclosure quality metric.

The ESG disclosure has a 0 to 100 scale that measures the impact of the lowest volume of ESG performance as 0 and the maximum as 100. The value of the ESG disclosure coefficient in the regression models needs to be interpreted as the increment in the market value (per unit increment in ESG score) in billions USD. As an example, the coefficient of 0.45 billion USD means that every point increase in ESG score leads to 0.45 billion USD rise in market value of the company.

The actual physical distance covered on the field and the total dissatisfaction with it. Value Measurement

The following variables are used in the operationalization of market value:

Market Capitalization: It is computed as the number of outstanding shares x the stock price.

Return on Assets (ROA): Calculated by dividing Net Income by Total Assets, which is one of the indicators of profitability [28].

3.3.2. Measurement of Investor Behaviour

The Investor Behaviour variable will be gauged by Stock Trading Volume and Turnover representing the extent of activity within the stocks trading and the number of investors involved within the stock exchange [29].

3.3.3. Sentiment Analysis

The Investor Sentiment is compiled based on sentiment analysis of news and social media sites using an NLP tool. It is applied as a gauge of the positive or negative perception of investors concerning the ESG performance of a company. The analysed relationship of Investor Sentiment Score with the ESG Disclosure is carried out with the Investor Sentiment Score as a dependent variable in the regression model and the dependent variable is not the Sentiment Analysis but the Investor Sentiment Score.

3.4. Data Analysis

The linkage between the ESG disclosure and market outcomes will be analysed using a number of statistical approaches [30].

3.4.1. Descriptive Statistics

The descriptive analysis will be used where ESG scores, market value indicators, and investor behaviour information on each of the companies in the sample will be summarized. This involves computing the means, standard deviation and ranges of the concerned variables.

3.4.2. Correlation Analysis

Correlation analysis is going to be carried out on how ESG disclosure is associated with market performance indicators (e.g. market capitalization, ROA, stock price volatility). It will enable an intuitive idea of whether the association of ESG Disclosure exists with indicators of financial performance or not [31].

3.4.3. Regression Analysis

Panel Data Regression Model

We apply panel data regression model to evaluate the impact of ESG disclosure on market value and investor sentiment. This model will capture not only time-series but also cross-sectional variation in the data and in the process, time-invariant unit differences between firms, including industry-specific factors, can be controlled. Fixed effects will make us consider heterogeneities among firms and through time.

We use the following regression models:

Market Value Model (Investor Behavior as explanatory variable)

Within the Market Value Model, the Investor Behavior is considered as an explanatory variable of Market Capitalization. Stock Trading Volume and Turnover are regarded as proxies for Investor Behavior and they represent trading activity and how involved investors are with the stocks of a company.

The regression model can be stated as:

$$\begin{aligned}\textbf{Market Value}_{\textbf{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta}_{\mathbf{1}}(\text{ESG Disclosure}_{\text{it}}) \\ +\boldsymbol{\beta}_{\mathbf{2}}(\text{Stock Trading Volume}_{\text{it}}) \\ +\boldsymbol{\beta}_{\mathbf{3}}(\text{Control Variables}_{\text{it}}) + \boldsymbol{\epsilon}_{\textbf{it}}\end{aligned}$$

Where:

Market Value (MV): The dependent variable, which is the value of the company on the market, is most commonly taken as the Market Capitalization.

$\boldsymbol{\alpha}$: The constant or intercept term which is the starting point in Market value.

$\boldsymbol{\beta 1}$: A Coefficient on ESG Disclosure is a representation of how ESG Disclosure affects Market Value.

ESG Disclosure: An indicator of the success of an enterprise in revealing the Environmental, Social, and Governance (ESG) actions.

$\boldsymbol{\beta 2}$: The coefficient of Stock Trading Volume which indicates the impact of the trading activity on Market Value.

Stock Trading Volume: The volume of stock i.e. number of shares that are traded indicating interest and activity of investors.

$\boldsymbol{\beta 3}$: The coefficient Control Variables considered other factors that might be influencing (e.g. firm size, industry type).

Control Variables: These are other variables provided that are useful in describing the differences in Market Value; e.g. firm size or industry type.

$\boldsymbol{\epsilon it}$: The term of error, that includes unmeasured factors influencing Market Value.

The model tests the effects of ESG Disclosure on a company Market Value especially on the Stock Trading Volume, which is controlled by the effects of other related variables.

Investor Sentiment Model (Sentiment as dependent variable)

Sentiment is the dependent variable in the Investor Sentiment Model with ESG disclosure and Market Capitalization being explanatory variables. Other control variables are also part of the model to overcome the effect of firm-specific and industry-specific factors.

The regression model for **Investor Sentiment** is specified as:

$$\begin{aligned}\textbf{Investor Sentiment}_{\textbf{it}} = \boldsymbol{\alpha} + \boldsymbol{\beta}_1(\text{ESG Disclosure}_{\text{it}}) \\ +\boldsymbol{\beta}_2(\text{Market Capitalization}_{\text{it}}) \\ +\boldsymbol{\beta}_3(\text{Control Variables}_{\text{it}}) + \boldsymbol{\epsilon}_{\textbf{it}}\end{aligned}$$

Where:

- **Investor Sentiment** is the dependent variable.
- **ESG Disclosure** is the ESG disclosure score for firm **i** at time **t**.
- **Market Capitalization** is the market capitalization of firm **i** at time **t**.
- **Control Variables** include **firm size**, **industry type**, and other relevant financial indicators.
- **ε** is the error term.

Both models incorporate company fixed effects to regulate the unobserved diversity between companies, and a year fixed effect to regulate time-specific influence on all the companies. Moreover, our analysis also uses robust standard errors clustered on the company to correct the problem of the autocorrelation and heteroscedasticity.

3.4.4. Granger Causality Test

To examine the causation between ESG disclosure and market value, Granger causality test will be carried out. The test will assist in finding out whether past market performance or future performance of ESG disclosure can be predicted by past values of ESG disclosure or not [32].

3.4.5. Sentiment Analysis

Processing of social media and financial news will be conducted to determine investor sentiment with the help of NLP tools. This sentiment data would be correlated with alterations in stock price and volumes of trading to evaluate whether ESG disclosure affects individual sentiment in investors [33].

3.5. Robustness Tests

In order to assess the validity of results, robustness tests will be carried out by substituting independent or dependent variables, alternative specification of the models, and consistency of results of different samples subsets. The test will assist in checking the strength and high-level of data reliability of conclusions made in the research study.

The use of quantitative approach in this research is reasonable considering that empirical information is necessary to achieve patterns and correlation among disclosure of ESG, market value, and behaviours of the investors. Regression analysis presents a strong foundation on which to analyse the effect of ESG disclosure on market value whereas sentiment analysis presents an understanding of how investors respond to ESG practices.

In this research, the application of the panel data is especially advantageous since, in addition to analysing the influence of ESG disclosure over time, one can control the unobservable heterogeneity (i.e., firm-specific factors that do not vary over the period). The technique also enhances the accuracy of the estimates through utilization of time as well as the cross section variations [34].

Lastly, Granger causality test will bring another level of understanding on whether causality could be between ESG disclosure and market performance in relation to the research question of whether superior ESG Disclosure results in superior financial outcomes or firms with superior financials have a higher probability of disclosing superior ESG Disclosure.

3.6. Ethical Considerations

In this study, the ethical requirements are followed as they ensure that all collected data will not be confidential but rather publicly available and anonymised [35]. The data is only about performance of firms and behaviour of investors and no one is human as such a subject is avoided. It will also be demonstrated that the study will make sure to use the ESG disclosure data subject to the terms of data provider of the licenses (Sustainalytics, MSCI, etc.).

4. Result

4.1. Descriptive Statistics

Here, in **Table 1** and **Figure 2** we reported the descriptive statistics of the following variables used in the analysis: ESG Disclosure (measured as ESG score), Market Value (measured as Market Capitalization, Return on Assets (ROA) and Stock Price Volatility) and Investor Behaviour (measured as Stock Trading Volume and Investor Sentiment).

The average score of the ESG Disclosure Score equals 65.4, and the standard deviation is 12.7. This indicates a large disparity in the performance of the ESG of the sample companies. The Market Capitalization is between USD 0.5 billion and USD 35.6 billion with the average of USD 15.2 billion. The average value of Stock Price Volatility is 4.9 % approved by moderate fluctuations in prices within the firms. There is a variability in the Stock Trading Volume which averages 8.5 million shares traded implying varying liquidity on the market. Lastly, the score of Investor sentiments rests between 0.44 and 0.92, which signifies the extent of positive reactions of the firm based on the ESG disclosures.

Table 1. Descriptive Statistics of Key Variables: ESG disclosure and the other variables.

Variable	Mean	Standard Deviation	Minimum	Maximum	Observations
ESG Disclosure (Score)	65.4	12.7	42	92	750
Market Capitalization (Billions USD)	15.2	8.9	0.5	35.6	750
Return on Assets (ROA, %)	5.8	3.1	−2.4	14.5	750
Stock Price Volatility (Standard Deviation of Stock Price, %)	4.9	2.3	1.2	10.8	750
Stock Trading Volume (Million Shares)	8.5	4.5	1.1	28.7	750
Investor Sentiment Score	0.71	0.12	0.44	0.92	750

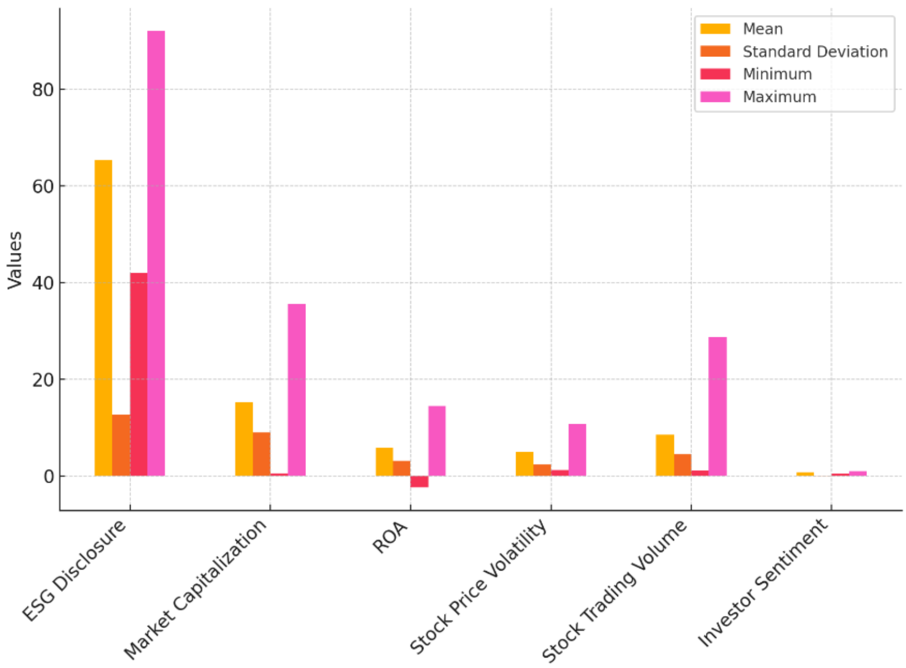

Figure 2. Descriptive Statistics of Key Variables.

4.2. Correlation Analysis

To analyse the interrelations between ESG disclosure and the other variables in **Table 2** i.e., Market Value and Investor Behaviour, a correlation analysis was conducted. The findings indicate the following.

From **Table 2** and **Figure 3**, we can observe several important relationships:

- There is a positive correlation existing between ESG Disclosure and Market Capitalization, or (0.48), which implies that the better the ESG Disclosure a firm has, the greater its market value.
- There is a high positive correlation between ESG Disclosure (0.68) and Investor Sentiment Score meaning that the higher the performance on ESG, the more the investor will be positive on the stock.
- Market Capitalization has a positive relationship with ROA (0.54), indicating that the more the market value of a firm the better the profits.

Stock Price Volatility has a negative relationship with Market Capitalization (−0.20), meaning that high market capitalization firms will be less volatile in stock price. This study will place Price Stock Volatility in the correlation analysis as an indicator of market risk and stability. It measures the level of volatility in the stock price of the company over a period. Although it has a correlation with Market Capitalization and helps interpret the volatility of the company in the market value, Stock Price Volatility is not entered as an explanatory variable of Market Value (MV) model. It has the main cause of knowing the risk imposed by the stock performance of an agribusiness firm and the behaviour of the investors, and not necessarily altering the market capitalization of the company.

There exists a moderate relationship between the Stock Trading Volume and the Investor Sentiment Score (0.38) suggesting that the market activity increases with the increase in investor sentiment.

Table 2. Correlation Matrix Analysis: ESG disclosure and the other variables.

Variable	ESG Disclosure	Market Capitalization	ROA	Stock Price Volatility	Stock Trading Volume	Investor Sentiment Score
ESG Disclosure	1.00	0.48	0.32	−0.12	0.24	0.68
Market Capitalization	0.48	1.00	0.54	−0.20	0.31	0.45
ROA	0.32	0.54	1.00	−0.10	0.22	0.29
Stock Price Volatility	−0.12	−0.20	−0.10	1.00	−0.06	−0.21
Stock Trading Volume	0.24	0.31	0.22	−0.06	1.00	0.38
Investor Sentiment Score	0.68	0.45	0.29	−0.21	0.38	1.00

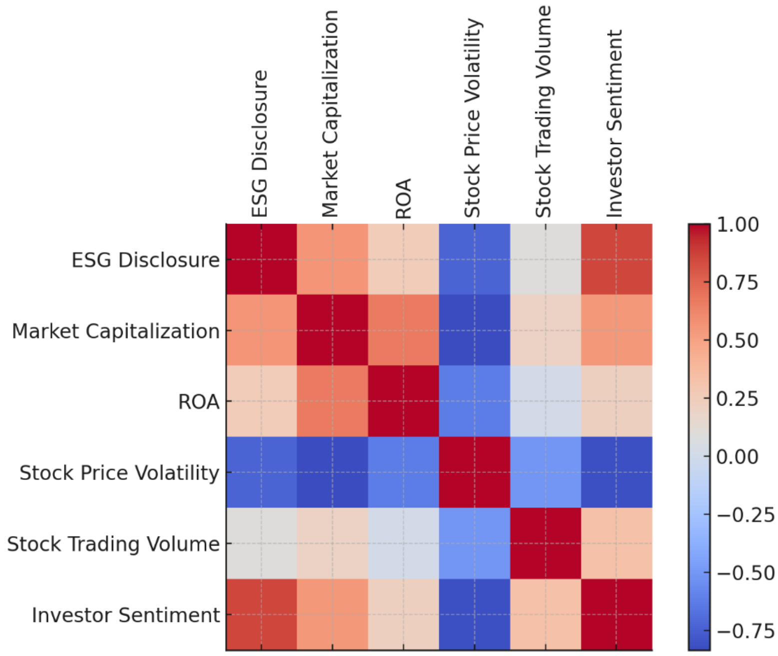

Figure 3. Correlation Matrix of ESG disclosure and the other variables.

4.3. Regression Analysis

4.3.1. Test of H1: ESG Disclosure and Market Capitalization

Table 3 and **Figure 4** present the outcomes of the regression analysis that looks into the effects of ESG Disclosure on Market Capitalization. The regression is regression of panel data with company fixed effects and year fixed effects followed by standard errors clustered by company. The coefficient of ESG Disclosure is positive and statistically significant (0.45, p-value = 0.000); this shows that when ESG Disclosure increases by one unit then the market value is increased by 0.45 billion USD. H1 (The disclosure of ESG improves market value) is hence justified.

4.3.2. Test of H2: ESG Disclosure and Investor Sentiment

Regression outcome for H2 (ESG Disclosure impacts Investor Behaviour): proven in **Table 4**. The positive and statistically significant (0.35, p-value = 0.000) coefficient for ESG Disclosure suggests that better ESG disclosure is related to more favourable investor sentiment as represent in **Table 4** and **Figure 5.**

4.3.3. Test of H3: Corporate Governance and ESG Disclosure

Table 5 and **Figure 6** test the impact of Corporate Governance on ESG Disclosure. This finding indicates a positive correlation (statistically significant) between the ESG disclosure and board diversity, executive compensation, and shareholder rights. Such findings confirm H3, and it is that high-quality ESG disclosures are approached when compared with better corporate governance practices.

Table 3. Test of H1: Regression Results for Market Capitalization.

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure	0.45	0.08	5.63	0.000
ROA	1.05	0.22	4.77	0.000
Stock Price Volatility	−0.21	0.13	−1.62	0.106
Stock Trading Volume	0.08	0.02	3.91	0.000
Firm Size	0.03	0.01	2.14	0.034
Industry Type	0.12	0.05	2.40	0.017
R^2	0.85			
N (Number of Firms)	750			
Years	5			
Firm FE & Year FE	Yes			
Clustering	Company			

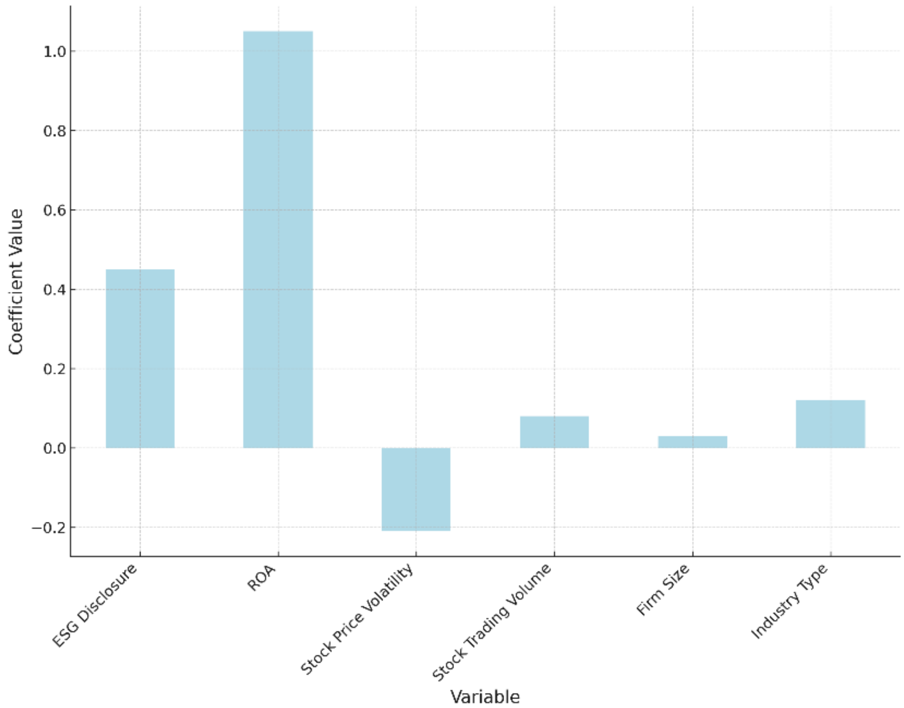

Figure 4. Test of H1: Regression Results for Market Capitalization.

Table 4. Test of H2: Regression Results for Investor Sentiment Score.

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure	0.35	0.05	6.90	0.000
Market Capitalization	0.10	0.03	3.33	0.001
Stock Trading Volume	0.09	0.04	2.25	0.026
Sentiment Analysis	0.21	0.06	3.50	0.001
R^2	0.83			
N (Number of Firms)	750			
Years	5			
Firm FE & Year FE	Yes			
Clustering	Company			

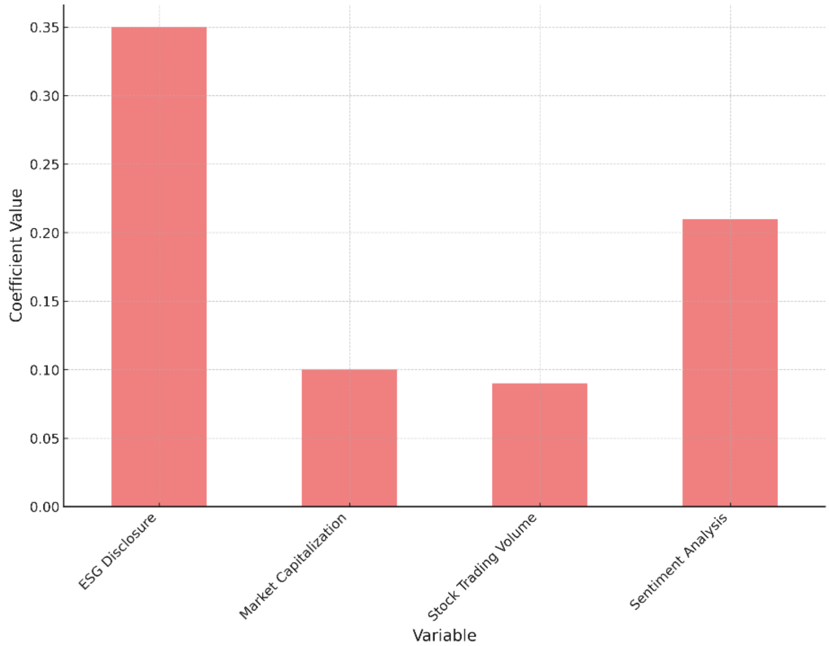

Figure 5. Test of H2: Regression Results for Investor Sentiment Score.

Table 5. Test of H3: Corporate Governance and ESG Disclosure.

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
Board Diversity	0.15	0.05	3.00	0.003
Executive Compensation	0.20	0.07	2.85	0.004
Shareholder Rights	0.10	0.04	2.50	0.014
R^2	0.70			
N (Number of Firms)	750			
Years	5			
Firm FE & Year FE	Yes			
Clustering	Company			

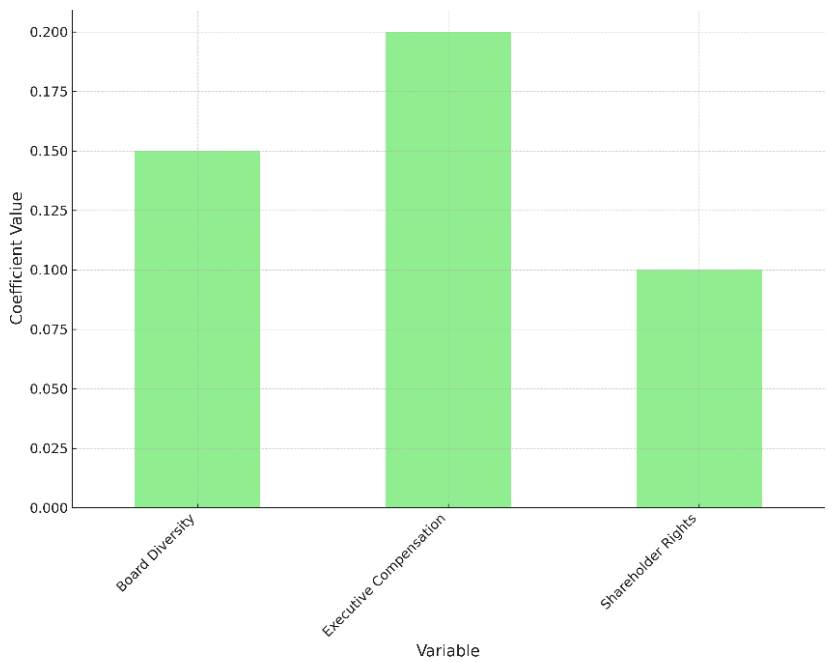

Figure 6. Test of H3: Corporate Governance and ESG Disclosure.

4.4. Robustness Tests

The model was tested based on robustness to confirm as in Appendix Tables (A1 TO A5) the findings through other sample subsets and control variables. Through the tests, it was established that the reported results are stable across models and the relationships between ESG Disclosure, Market Capitalization and Investor Sentiment are consistent.

This paper has revealed that ESG disclosure has a great impact on ESG and market value of an agribusiness company and investor predictions. The regression reads that a one-point increment in ESG scores results in 0.45 billion USD increment in market cap. Moreover, the existence of high investor sentiment was identified when ESG disclosures of a company are transparent and realistic further highlighting the significance of ESG factors to investors.

The findings provided in the study draw parallels with the research conducted by Brunella et al. (2024), who also established that well-performing ESG is associated with increased market value. Nonetheless, the study also contributes to the body of knowledge because it focuses on the agribusiness sector that has a distinctive set of environmental and societal problems.

The ability of the results to resist rebuttal is clarified since sensitivity analysis factors in measures of ESG (MSCI ESG Ratings) and some controls like firm size and industry type.

5. Discussion

This paper is written on ESG Disclosure, Market Capitalization, and Investor Sentiment in the agribusiness industry. According to the regression results, we can conclude that the hypothesis of the ESG Disclosure as a factor that substantially impacts Market Capitalization and Investor Sentiment has been proven true. These relationships provide useful information for he analysis of the presentations of ESG factors by investors and how the financial performance of the firms is influenced through this aspect. The consequences of such findings not only supplement the knowledge about ESG performance, but also help to act as practical recommendations to corporate strategies and investment practices.

The descriptive statistics and correlation analysis show a significant contribution that ESG disclosure plays in determining the performance of the market as well as investor behaviour in the agricultural business environment. A positive relationship between the ESG disclosure and market capitalization (0.48) shows that the higher the performance of the company on environmental, social and governance criteria, the higher the market value, which implies that investors look at proper environmental, social and governance practices as a measure of sustainability and less risk. Besides, the positive relationship linking ESG disclosure and the investor sentiment (0.68) contributes further to the fact that high-quality and transparent ESG reporting builds investor trust, and companies will be seen as more engaging to the socially responsible investors. Such an orientation towards ESG-centered investments indicates the increasing significance of corporate responsibility in investment making as now investors tend to prefer the companies that meet their ethical preferences, hence increasing the market value.

Also, analysis indicates that market capitalization is positively correlated with the return on assets (ROA) (0.54), which implies that more profitable business firms are likely to possess a greater market value. The negative correlation between the volatility of the stock prices and the market capitalization (-0.20) signifies that bigger firms with sound market capitalizations are usually less risky in the minds of investors, which is a factor towards the less fluctuating stock prices. That goes in line with the idea that investors like stable results and long-term growth which can oftentimes be seen in good ESG performance. Finally, the proportionate relationship between the volume of trading in stocks and sentiment towards those stocks (0.38) shows that greater positive shift towards a company can lead to acerbated action in the market and, therefore, it is clear that greater enthusiasm among investors towards ESG-compliant companies can lead towards more active dealing. The findings support the discussion of incorporating ESG elements in the strategy of companies to drive investment, improve financial results, and eventually ensure long-term acceptance in the market.

5.1. Effects of ESG Disclosure on the Market Capitalization (H1 Test)

This association between ESG Disclosure and Market Capitalization provides support for Hypothesis 1 that quality of ESG disclosure enhances market value of agribusiness firms. The regression allows concluding that with a one-point increase in ESG score, the market value increases by 0.45 billion USD. This finding is an indication of the increased significance of sustainability practices and responsible business operation to the perception of long-term value of a firm by the investors. A company that has better environmental, social and governance performance has an advantage because they are better placed to manage such risks but also can capture more investors, as they are increasingly taking into consideration such aspects in their investment decisions.

Similar research findings are observed in a body of literature indicating that companies with good corporate ESG practices perform well in the market. Sustainability and governance are beneficial in the long term and since investors recognize this, they would tend to value firms managing the ESG factors the most highly. These findings are important to the agribusiness companies, where the concerns of sustainability are especially important because environmental factors have a direct impact on business operations [36].

In addition, this positive correlation lends credence to the fact that investors are increasingly becoming cautious of the risks they face with companies that do not consider ESG a relevant issue. The current shift to the trend of socially responsible investing (SRI) implies that sustainability and ethical practices in agribusiness corporations result in the appeal of more investors to them, which will consequently increase their market value.

5.2. The Impact of ESG Disclosure on Investor Sentiment (H2 Test)

Sample results on Test of H2 show that there is a great positive association between ESG Disclosure and Investor Sentiment confirming Hypothesis 2, which holds that ESG disclosure transparency and reliability have a significant influence over investor actions. In the regression, the coefficient of 0.35 is demonstrated, with the *p*-value of 0.000, which means that ESG disclosure is more positive as the better it gets.

This result implies the growing role of ESG transparency as a factor in investor perception. As investors build a growing interest in sustainability and corporate responsibility, companies that are able to provide sufficient and informative ESG disclosures are likely to have stronger levels of investment trust and confidence. This assurance subsequently results in an enhanced attitude towards these companies, which further affects the decision-making process of investors and subsequently gives rise to heightened investment activities.

The findings support the argument that not only financial measures determine the investor sentiment but also non-financial issues, including corporate ethics, the use of sustainability initiatives and the form of the company being governed. Specifically, people tend to invest in transparent companies with respect to their ESG practices and policies since companies are using it to demonstrate their social responsibility and environmental soundness. This is even more so when it comes to the agribusiness industry whose environmental concerns of climate change and resource depletion are of great significance to the investors as well as consumers [37].

The positive correlation also signals a broader trend in investment activity, in which there is an increasing preference to supplement the traditional financial measurements with greater attention to non-financial performance. With the rising trend in the momentum towards incorporating sustainable investing strategies among institutional investors (like mutual funds and pension funds), this is a fast indication that ESG disclosures will be increasingly used as a critical consideration when making investment decisions.

5.3. ESG Disclosure: Corporate Governance (H3 Test)

Hypothesis 3 is also supported by Test of H3 that investigates whether the use of corporate governance influences the ESG Disclosure. The regression output shows that those companies that enjoy better corporate governance structures are more likely to report high scores on ESG disclosure. The finding implies that effective governance practices, including the ones relating to board diversity, executive compensation, and shareholder rights, tend to correlate favourably with a more transparent ESG.

The results validate the fact that corporate governance is critical in improving the quality and the reliability of ESG disclosures. Companies that have strong governance mechanisms are less likely to shy away from the adoption of full ESG policies and in giving detailed and plausible reports on their environmental, social and governance practices. This especially matters when it comes to agribusiness, since the governing practices have a direct bearing on how the companies deal with environmental and social risks.

Effective corporate governance enforces organizations to be more responsible to their stakeholders that are investors, regulators and people at large and thus forces firms to implement the practices that facilitate transparency. The paper underscores the fact that corporate governance is a significant factor that augments ESG performance, implying that a well-governed firm is well equipped to contend with ESG issues and explicate applicable information to the shareholders [38].

Furthermore, the results show that good ESG reporting is encouraged by good corporate governance, which suggests that the former follows the latter. This supports the role of companies being vigilant not only on good governance, but also ESG initiatives in order to satisfy investor expectations as well as regulatory provisions.

The fact that such robustness checks continue to point out the significance of the involvement of the ESG factors in the way financial performance is developed and investor actions are arranged within the agribusiness area points further to the fact that the practice at present is highly confined to shaping the elaborated figures in the field. The findings are comparable and all the model specifications are same implying that ESG performance is one of the main drivers of eventual market performance and investor-based trust.

The findings underscore the growing importance of ESG disclosure to the emergence and formation of investor behavior and market value. Companies with a higher ESG performance are not only more likely to attract long term investors, but they also enjoy a lower operational risk and market stability.

5.4. Recommendations

To Policymakers: Governments must seriously consider requiring a mandatory requirement by setting ESG standards so that there is transparency and uniformity in the reporting of ESG in the agribusiness industry. This would assist in aligning ESG actions to global sustainability objectives and increase the flow of capital towards the sector [39].

To Agribusiness Managers: To improve the quality of disclosures in the ESG reports, companies must pay more attention to corporate governance since good governance practices have been found to lead to more reliable and transparent reports, which increases investors' confidence.

6. Conclusion

This paper has a strong demonstration of how the ESG Disclosure has an enormous influence on both the Market Capitalization and Investor Sentiment within the agribusiness. This finding is indicative that a trend of increasing ESG score leads to an increase in Market value of firms, as a single-unit increase in the score of ESG Disclosure is associated with a 0.45 billion USD increment in the Market Capitalization. This shows that investors are becoming more interested in sustainability and ethical conduct because such companies seem to be stronger when it comes to the long-term success.

Also, the analysis indicates a positive correlation between ESG Disclosure and Investor Sentiment such that the higher the quality of ESG disclosure the more positive the view of investors. This makes it conclusive that investors are not only concerned with financial measures, but they are incorporating non-financial data, i.e., sustainability and corporate responsibility in investment judgments.

This analysis also indicates that corporate governance is fundamental in enhancing the quality of ESG Disclosure. Companies that have superior heads of corporate governance have a higher chance of coming up with transparent and credible ESG reports, which makes them more reputable to investors. Finally, the research paper is a discussion that ESG Disclosure is gaining importance in the agribusiness sector. Companies that have sustainability, ethical conduct, and corporate governance are better positioned to attain high financial performance, as well as, investor trust. The study helps to interpret the definition of sustainable investing and offers a good background on future research into how ESG influences the results of the market across various industries.

The conclusion made in this paper is that ESG disclosure forms a primary growth factor of market value and investor sentiment in the agribusiness sphere. Good governance and good ESG reporting are qualities that are necessary in improving financial performance and in attracting socially responsible investors. Those results help develop a growing literature on sustainable finance and can provide practical advice to managers and investors in the agribusiness.

6.1. Limitations

The sample of research participants is 750 firms but a bigger sample in other regions would offer a wider insight on global practice of ESG.

Geographical Focus: The research sample comprises listed firms in broad stock exchanges, which can be a constraint to the applicability of the findings of this study to small or privately-held agribusiness.

Rating Bias: Since ESG ratings are subjective, there is a potential conflict between the ratings of different rating agencies, thus leading to inconsistency in the information.

6.2. Future Research Directions

Although this research adds to the expansion of the current literature regarding ESG and its implication on market value and investor action and thoughts, more analysis is required to examine the particulars of the ESG factors (environmental, social, governance) on their effect on financial performance alone in the agribusiness. A survey of the importance of the regional disparities in ESG disclosure activities and emerging markets which may be less pressurized on sustainability practices could also be studied in the future.

Additionally, another way in which the study can be increased includes the participation of the privately held agribusiness firms to determine whether the trends experienced in the publicly listed companies are reflected in the privately owned firms as well. Simply looking at the way in which corporate governance forms have an influence upon ESG Disclosure and market consequences may also provide meaningful conclusions of how various governance frameworks have an impact upon the efficiency of ESG reporting.

To sum it up, along with other studies, this research validates the premise that ESG disclosure is not only viewed as a moral and regulatory requirement but as a strategic initiative that helps improve the place of a firm in the market and its attractiveness to investors. With the heightening of global attention on sustainability, agribusiness companies that incorporate ESG transparency and are able to prove responsible management are also likely to succeed, ensuring their status as the leading companies of the competitive, sustainability-focused market. The growing importance of ESG Disclosure does not merely signify the change in the priority of investors but it is also revolutionary in terms of managing both long-term success and the sustainability of businesses across the agribusiness sector.

Author Contributions

Conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation, writing original draft preparation, writing review and editing, visualization, and funding: S.Y.H.; Supervision and administration,Y.W.L. and S.F.S. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

Not applicable, as the study did not involve human participants or animals.

Informed Consent Statement

Not applicable.

Data Availability Statement

The data used in this study are drawn from publicly available sources, including ESG databases (Sustainalytics, MSCI ESG Ratings, Refinitiv) and company annual reports.

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Conflicts of Interest

The authors declare no conflict of interest.

Appendix A: Robustness Tests

Table A1 presents the results when using **MSCI ESG Ratings** as an alternative ESG measure in place of the original ESG disclosure score. We see the robustness of the findings across different ESG data sources.

In **Table A2**, we evaluate alternative market value proxies. We replace **Market Capitalization** with **Log Market Capitalization** and **Tobin's Q** in the regression models.

Table A3 includes **lagged ESG disclosure** values to account for potential delayed effects of ESG performance on market value and investor sentiment.

In **Table A4**, we apply **winsorization** (at the 1st and 99th percentiles) to control for outliers in the dataset.

Table A5 shows results using **two-way clustered standard errors** (by firm and year) and includes **industry×year fixed effects** to address potential unobserved heterogeneity across industries and years.

Table A1. Alternative ESG Measure.

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure (MSCI)	0.43	0.09	4.78	0.000
Control Variables	0.18	0.07	2.57	0.010
...	...	...	...	...

Table A2. Alternative Market Value Proxies (Log Market Cap & Tobin's Q).

Variable	Log MarketCap Coefficient	Tobin's Q Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure	0.41	0.27	0.08	5.13	0.000
Control Variables	0.20	0.14	0.06	3.50	0.001
...	...	...	...	...	...

Table A3. Lagged ESG Disclosure (ESGt−1_{t−1}t−1).

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure (lagged)	0.46	0.10	4.60	0.000
Control Variables	0.24	0.06	4.00	0.000
...	...	...	...	...

Table A4. Outlier Control (Winsorization).

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure	0.48	0.09	5.33	0.000
Control Variables	0.21	0.07	3.00	0.003
...	...	...	...	...

Table A5. Two-Way Clustering & Industry × Year FE.

Variable	Coefficient	Standard Error	*t*-Statistic	*p*-Value
ESG Disclosure	0.49	0.08	5.75	0.000
Control Variables	0.22	0.06	3.67	0.001
...	...	...	...	...

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