SDIJournals

**Journal of Sustainable Development Issues, 2023, 1(1),**

p. 42-62.

Journal homepage: https://journalsdi.com/index.php/jsdi/index

# The Nexus between Environmental, Social, and Governance Factors and Corporate Financial Performance in Emerging Markets

Fuzuli Aliyev[1,*], Nijat Alishov[2]

[1] School of Business, ADA University, Azerbaijan, fmaliyev@ada.edu.az

[2] Portfolio Management and Investment Monitoring Department, SOCAR, Azerbaijan, nijat.alishov@socar.az,

[*] Correspondence.

## ABSTRACT

This paper examines the relationship between environmental, social, and governance (ESG) activities and financial performance of corporations in emerging markets. It utilizes Return on Assets (ROA) and Return on Equity (ROE) to gauge profitability, and Tobin's Q to evaluate the effect of ESG factors on stock market performance. Firm size, total asset turnover ratio and leverage have also been considered as control variables. The sample consists of 556 companies operating in emerging markets, and data from 2012 to 2021 has been analyzed. The study finds an inverse relationship between environmental performance and ROA, however any of the other ESG activities do not significantly affect the financial performance of companies. Therefore, the study concludes that there are no notable positive effects of ESG performance on CFP in emerging markets.

**Keywords:** ESG, Return on Assets, Return on Equity, Tobin's Q

JEL Classification: G30, G31, G39

Received: December, 2022 | 1st Revision: February, 2023 | Accepted: May, 2023

# 1. INTRODUCTION

In recent years, environmental, social, and governance (ESG) has received considerable attention as a crucial element of corporate responsibility and sustainable business practices. ESG factors show a company's dedication to sustainability, moral conduct, and good business governance. It's critical to comprehend how ESG considerations affect a company's financial success as investors and stakeholders place more emphasis on these issues. In assessing the long-term performance and risk profile of an investment, ESG factors are evaluated alongside traditional financial metrics. By integrating ESG factors into their decision-making process, investors seek to align their portfolios with their values and achieve positive change. In recent years, the number of funds that employ ESG strategies has increased significantly, reflecting the growing demand for sustainable and responsible investing. Global sustainable investment assets reached $35.3 trillion in 2020, up 15% from 2018, according to the Global Sustainable Investment Alliance (GSIA). Europe has been a pioneer in the adoption of ESG investing, with a significant portion of total managed assets consisting of sustainable assets. According to the GSIA, Europe accounted for 82% of global sustainable investment assets in 2020. ESG investments have also increased substantially in the United States. According to the US SIF Foundation, sustainable assets increased by 42% to $17.1 trillion in 2020, representing 33% of all assets under management. Additionally, inflows into ESG funds have also been substantial over the past few years, indicating a rise in investor interest. According to Morningstar, sustainable funds attracted a record $51.1 billion in net flows in the United States in 2020, more than doubling their inflows from the previous year. In Europe, there have been consistent inflows of sustainable funds, as well. According to Morningstar, Europe's sustainable funds received €233 billion in net inflows in 2020, a 130% increase from 2019.

There are also many studies which have found the positive link between ESG factors and corporate financial performance (CFP). For example, Friede et al. (2015) conducted a meta-analysis of 2,200 studies and found that 90% of the studies showed a non-negative relationship between financial performance and ESG practices, suggesting that companies with strong ESG practices generally have strong financial performance. Additionally, Enhardt et al. (2003) investigated whether the diversity of the board of directors has an effect on the CFP. The authors sampled 127 large companies and concluded that ROA and return on investments (ROI) of companies increase as the percentage of women and minorities on the board of directors increases. Regarding environmental performance, Hart & Ahuja (1996) used a sample of S&P 500 companies to determine if efforts to reduce emissions result in an enhancement of CFP as measured by return on sales (ROS), return on assets (ROA), and return on equity (ROE). According to the results, emission reductions enhance the CFP.

However, it is important to note that some research studies have produced results that contradict this positive association. Analyzing the reports of Fortune 500 companies, Abbott & Monsen (1979) found no direct impact of CSR activities on stock returns, suggesting no positive relationship between CSR and financial performance. In terms of environmental performance and CFP, Horváthová (2010) conducted a meta-analysis of 37 empirical investigations using regression analysis and found no association between EP and CFP. Furthermore, Rodriguez-Fernandez et al. (2014) found no statistically significant relationship between board size, percentage of independent directors, CEO duality, and CFP. These studies provide diverse insights into the relationship between ESG practices and corporate financial performance. While some studies support a positive association, indicating that strong ESG practices are linked to better financial performance, others find no direct relationship or even a negative association. These variations in findings highlight the complexity of the topic and the need for further research to better understand the specific factors and contexts that influence the ESG-CFP relationship.

To the best of our knowledge, there is a scarcity of studies that have specifically investigated the impact of ESG factors on the corporate financial performance of the companies in Emerging Markets. This study investigates this relationship, making it an original contribution to academic literature. The research aims to cast light on the significance of ESG practices in driving financial performance in these markets by focusing on this area. That is why, a sample of 556 companies from the MSCI Emerging Market Investable Market Index (IMI) for the years 2012 to 2021 has been selected for this study. This sample will provide a detailed representation of businesses operating in various Emerging Market countries. This study is distinguished by its emphasis on investigating not only the influence of ESG scores, but also their subcomponents, namely environmental, social, and governance factors on corporate financial performance. Furthermore, while numerous studies have primarily concentrated on operational financial performance measurements, the objective of this research is to broaden the examination by incorporating stock market performance indicators such as Tobin's Q. By incorporating operational (ROE, ROA) and market-based (Tobin's Q) financial performance measures, this study attempts to provide an extensive understanding of the relationship between ESG factors and the financial performance of corporations in Emerging Markets.

The research paper is organized into distinct sections to ensure clarity and coherence. It begins with an introduction that summarizes the objectives of the study. The first section is the literature review, which critically examines existing studies and theories related to the topic. Section 2 is the methodology section outlining the research design, data collection methods, and analytical techniques used in the study. Moving forward, the results section presents the findings of the descriptive and regression analyses in Section 3. The comparisons of these results with related studies and also, their economic implications are discussed in Section 4. The Section 5 which is the last section, presents the conclusion and limitations of the research.

# 2. LITERATURE REVIEW

Beyond just the societal impacts, several studies have demonstrated that companies with strong ESG practices tend to have superior financial performance and less volatility than those with weaker ESG practices. The research done by Ahmad et al., (2021) for publicly listed UK companies confirmed the above points. The study analyzed a sample of 351 firms from the FTSE 350, one of the leading stock market indices in the UK. The results of the study showed that ESG practices had a positive and significant impact on both the market value and earnings per share of the firms analyzed. Another study examined this relationship based on the 2200 studies made by the fellow researchers and concluded that 90% of these studies found a non-negative relationship between financial performance and ESG practices, meaning that in most cases, companies with strong ESG practices tend to also have strong financial performance (Friede et al., 2015). Additional study by Hu et al. (2018), found a positive impact of the corporate social responsibility (CSR) activities, which are analogous to corporate ESG activities, on the firm values of the Chinese manufacturing firms. However, the impact of CSR on firm value is less significant for companies with high advertising intensity, as stakeholders may react negatively to CSR efforts by these companies. In contrast, state-owned firms experience a positive relationship between CSR and firm value, as stakeholders tend to respond positively to their CSR initiatives. The impact of CSR activities on the cost of bank loans was also examined by Goss and Roberts (2011). According to their research, banks generally charge more interest rate for the firms with below average ESG records. Alareeni & Hamdan (2020) concluded that ESG activities of S&P 500 firms had a positive effect on the financial performance of the corporations measured by Tobin's Q, ROA and ROE. Moreover, Orlitzky et al. (2003) conducted an analysis on the 52 prior quantitative studies. The findings of the analysis suggest that corporate social responsibility and environmental responsibility are likely to be beneficial for a company's financial performance, although the specific measures used to assess these factors can affect the strength of the relationship. Rather than market-based indicators, accounting-based measures of

financial performance are more highly correlated with corporate social responsibility, while reputation indices are more strongly correlated with financial performance than other measures of social responsibility.

Another line of studies has concluded that there is not a positive relationship between ESG and CFP. Abbott & Monsen (1979) analyzed the reports of Fortune 500 companies and found no impact of CSR activities on the stock returns of the companies. Brammer et al. (2006) conducted the similar study for publicly listed UK companies and found that firms with higher social performance scores had lower stock returns than the companies with lowest possible social performance scores, therefore indicating negative relationship between CSR and CFP. There are also other studies which found very different results regarding this relationship. Han J. et al. (2016) examined the influence of CSR on company profit for enterprises traded on the Korea Stock Exchange (KOSPI) between 2008 and 2014. It specifically investigated the individual Environmental, Social, and Governance (ESG) scores as proxies for CSR. In addition to ESG disclosure scores from Bloomberg, the researchers utilized financial performance metrics such as Stock Return, ROE, and Market-to-Book Ratio (MBR). They concluded that environmental responsibility disclosure scores have a negative impact on financial performance, while governance responsibility disclosure scores have a positive association. Moreover, there is no statistically significant evidence linking social responsibility scores to financial performance. Using the same database, Nollet et al. (2016) conducted the similar study. Their sample consisted of ESG scores for the S&P500 index covering the years from 2007 to 2011. Additionally, they considered the ESG score's three subcomponents: environmental (ENV), social (SOC), and governance (GOV). CFP was measured by a market-based metric, Excess Stock Returns and two accounting-based metrics, Return on Capital (ROC) and ROA. Control variables such as Sales, Risk, and R&D expenditure were added to the equation to account for the potential impact of other important variables other than the independent variables on the dependent variables. Consequently, the linear model suggested that there are no significant relationships between CSP and ROA, ROC, and Excess Stock Returns based on the findings of this study. Another interesting research which employed various datasets and found different results was conducted by the Servaes, H., & Tamayo, A. (2013). The study used the KLD Stats database, which includes companies from various indexes such as the S&P 500 Index, Domini 400 Social Index, Russell 1000 index, and Russell 2000 index. However, to avoid potential selection bias, the firms that are part of the Domini 400 Social Index were excluded from the sample. Authors measured market performance using Tobin's Q, which is a ratio that compares a firm's market value to the replacement value of its assets. The findings of the study indicate that CSR and firm value are positively related. However, this relationship holds true for only companies with strong customer consciousness. The relationship is either negative or insignificant for firms with low customer consciousness. Furthermore, the effect of customer consciousness on the CSR-value relationship is reversed for companies with a poor prior reputation as corporate citizens. This suggests that CSR activities can add value to a firm, but the relationship depends on specific conditions, such as customer awareness and prior reputation.

As seen, none of the studies mentioned above examine the impact of ESG on financial markets in emerging markets. This study fills the gap in the literature analyzing the impact of ESG on financial performance specifically in emerging markets.

# 3. METHODOLOGY

This section focuses on the data structure and sample used in the study, variables selected as dependent, independent and control variables, also methods used to bring the data to the better fit for analyses.

### 3.1 Hypothesis development

After examining the existent literature about the relationship between ESG, its subcomponents and CFP, following hypotheses are tested in this study:

Hypothesis 1: ESG score has a significant impact on the corporate financial performance;

Hypothesis 2: Environmental performance has a significant impact on the corporate financial performance;

Hypothesis 3: Social performance has a significant impact on the corporate financial performance;

Hypothesis 4: Corporate governance performance has a significant impact on the corporate financial performance.

### 3.2 Sample and data source

Refinitiv Eikon database has been used to extract data for variables used in this study. In order to represent the emerging market, the companies in "MSCI Emerging Markets Investable Market Index (IMI)" have been selected. It covers small, mid and large cap companies in the 24 Emerging Market countries. Due to the fact that the data of this index was not readily available, we chose "iShares Core MSCI EM IMI UCITS ETF (EIMI.L)" to represent this index. In Refinitiv Eikon database, there were 2628 constituents of this ETF, however after deleting the companies with missing data and removing duplicates (companies traded in different exchanges), samples was reduced to 556 companies. As the ESG data is more available in recent years compared to 20th century or early 2000's, in order to get the most possible observations, the last 10 years of data have been chosen from 2012 to 2021 (years included). As a result, the number of observations in the dataset is 5560.

### 3.3 Dependent variables

Dependent variables listed in Table 1 below represent corporate financial performance. CFP can be measured through both the accounting and the market performance of the companies. Other researches mentioned in Section 1 mainly used ROE and ROA as a representative of accounting performance, while Tobin's Q as a representative of market performance. This study will be in line with other studies and will take ROE, ROA and Tobin's Q as dependent variables.

**Table 1.** Dependent variables

| Symbol | Dependent variable | Explanation |
|---|---|---|
| ROE | ROE | Net Income / Average shareholder equity of the last 2 years |
| ROA | ROA | Net Income / Average total assets of the last 2 years |
| TQ | Tobin's Q | Price / Book Value per Share, data for the end of fiscal year |

Normally, Tobin's Q is calculated as total market value of the company divided by the replacement value of the company's assets. However, replacement value of the company's assets is difficult to estimate and therefore, price divided by BVPS has been used to represent Tobin's Q in this research. Tobin's Q greater than 1 means that market values company's assets more than its fair value and that's why company generates more return for its shareholders per unit of its assets.

### 3.4 Independent variables

Not only the impact of overall ESG score, but also the individual subcomponents of it on the CFP will be measured in this study. As a result, overall ESG performance, environmental performance, social performance and governance performance scores will be used as 4 independent variables which are listed in Table 2 below. All the scores will range from 0 to 100, with 0 representing the lowest possible score.

**Table 2.** Independent variables

| Symbol | Control variable | Explanation |
|---|---|---|
| ESG | ESG score | ESG score according to Refinitiv Eikon |
| EVN | Environmental performance score | Environmental performance score according to Refinitiv Eikon |
| SC | Social performance score | Social performance score according to Refinitiv Eikon |
| CG | Corporate Governance performance score | Corporate Governance performance score according to Refinitiv Eikon |

### 3.5 Control variables

Control variables listed in Table 3 have been used in this study to account for the potential impact of other important variables other than the independent variables on the dependent variables. Asset size, leverage and asset turnover will be used as control variables. The rationale behind using asset size is that, as firm gets bigger in size it can have better financial performance by taking advantage of the economies of scale. The log of assets has been taken for this research as all the variables in our dataset are between 0 and 100. That is why it is more consistent with other variables, and it is easier to interpret the results regarding total assets. In terms of leverage, debt is considered a cheaper source of borrowing compared to equity and therefore, it is believed that using debt results in better CFP. Similarly, higher total asset turnover is believed to lead to better financial performance due to the fact that company utilizes its assets more efficiently and that is why, will earn superior returns in future (Vijayakumar, 2011). Master & Yong (2014) found the positive impact of leverage on ROE. Nurlaela et al. (2019) conducted the similar research for Indonesian public companies and concluded that there is a positive relationship among ROA and total asset turnover and leverage of those companies. Additionally, there are also other research measuring the impact of ESG activities on CFP which uses the same variables as control variables in their study (Hamdan, 2018; Han et al., 2016; Nakao et al., 2007; Lucy Lu & Taylor, 2018; Sahut & Pasquini-Descomps, 2015; Alareeni & Hamdan, 2020).

**Table 3.** Control variables

| Symbol | Control variable | Explanation |
|---|---|---|
| LN_FS | Firm size | Log of total assets at the end of fiscal year |
| LVG | Leverage | Debt / Equity, data for the end of fiscal year |
| AT | Total Asset Turnover | Revenue / Total Assets, data for the end of fiscal year |

### 3.6 Methodology

Panel data is used in this study. Employing the panel data structure is advantageous in a number of ways. It enables researchers to account for unobserved heterogeneity: In cross-sectional studies, unobserved heterogeneity is a common issue that panel data analysis can aid to control for. By observing the same group of individuals or entities over time, researchers can account for unobserved variables that may influence the outcomes they are examining. Then, it permits the examination of dynamic processes: Panel data can be utilized to examine the temporal dynamics of individual behavior and outcomes. Using panel data, researchers can investigate how individuals or entities respond to environmental changes or interventions. Furthermore, it increases the reliability of statistical tests: Panel data offers more observations than cross-sectional studies, thereby enhancing the efficacy of statistical tests. This is due to the fact that panel data permits researchers to observe changes in variables over time, which can enhance the precision of statistical estimates. Finally, it facilitates causal inference: Using techniques such as fixed effects models or difference-in-differences models, panel data can help researchers establish causality and facilitate causal inference. These methods can assist in controlling for unobserved variables that may confound causal estimates. Using techniques such as fixed effects models or difference-in-differences models, panel data can help researchers establish causality and facilitate causal inference. These methods can assist in controlling for unobserved variables that may confound causal estimates.

A panel dataset consists of three components. Cross-sectional units: These are the entities that are observed over time such as countries, people, companies. Companies are cross-sectional units in our study. Time periods: These are the points in time through which cross-sectional units are observed. These periods can be on an annual, semi-annual, quarterly, monthly or daily basis. In our research, 10 years of annual data has been used. Variables are the components of the cross-sectional units that are observed over time. Corporate financial performance metrics (ROE, ROA, Tobin's Q), ESG score, environmental performance score, social performance score, etc. are perfect examples for this category.

In Table 4 below, we have presented the basic structure of panel data with variables of the study.

**Table 4.** Structure of Panel data

| Company ID | Date | ROE | ESG score | Others |
|---|---|---|---|---|
| X | n | X1 | X1 | X1 |
| . | . | . | . | . |
| . | . | . | . | . |
| X | n+9 | X10 | X10 | X10 |
| Y | n | Y1 | Y1 | Y1 |
| . | . | . | . | . |
| . | . | . | . | . |
| Y | n+9 | Y10 | Y10 | Y10 |

### 3.7 Model

In order to measure the effect of ESG and its subcomponents on the CFP metrics and investigate the hypotheses developed in subsection 3.4, the following models will be used:

$$\text{H1 – corporate financial performance}_{in} = \alpha + \beta_1 ESG_{in} + \beta_2 LN\_FS_{in} + \beta_3 LVG_{in} + \beta_4 AT_{in} + \varepsilon_{in} \quad (1)$$

$$\text{H2 – corporate financial performance}_{in} = \alpha + \beta_1 EVN_{in} + \beta_2 LN\_FS_{in} + \beta_3 LVG_{in} + \beta_4 AT_{in} + \varepsilon_{in} \quad (2)$$

$$\text{H3 – corporate financial performance}_{in} = \alpha + \beta_1 SC_{in} + \beta_2 LN\_FS_{in} + \beta_3 LVG_{in} + \beta_4 AT_{in} + \varepsilon_{in} \quad (3)$$

$$\text{H4 – corporate financial performance}_{in} = \alpha + \beta_1 CG_{in} + \beta_2 LN\_FS_{in} + \beta_3 LVG_{in} + \beta_4 AT_{in} + \varepsilon_{in} \quad (4)$$

# 4. EMPIRICAL RESULTS AND DISCUSSION

From the descriptive analysis of variables in Table 5, we can see that the ROE has a mean value of 13% and median value of 11%, while the same indicators for ROA are almost twice less with 6% and 5%, respectively. However, same cannot be concluded for Tobin's Q which exhibits higher difference between mean and median. In terms of standard deviation, all three of the independent variables have Coefficient of Variation (CV)[1] greater than 1 which suggests that there is high variability in the datasets. Additionally, they are all positively skewed meaning the data is more inclined to have extreme positive values. In terms of independent variables (ESG, EVN, SC, CG), all of the them show the similar pattern in many metrics. They have mean and median in a range between 50 and 57, moreover CG has the highest mean score, while ESG is with the highest median score. Compared to the dependent variables, independent variables have much less variability with CV's less than 0.5 and they are negatively skewed suggesting the data is inclined to have more extreme negative values. Finally, in terms of control variables (LN_FS, LVG, AT), we can see that the results of LVG are different from the other control variables. LVG has much higher variability and skewness with 2.03 and 14.61, respectively. Additionally, we can see that mean and median of LVG are accordingly 1 and 0.63. This indicates that the companies in the sample are more cautious when it comes to taking leverage. In AT

[1] Standard deviation / Mean

case, the results are similar as mean and median are 0.77 and 0.63, respectively. This fact indicates that companies are generating less value per $1 of their assets.

**Table 5.** Descriptive statistics of the study variables

| | ROE | ROA | TQ | ESG | EVN | SC | CG | LN_FS | LVG | AT |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 0.13 | 0.06 | 2.73 | 52.54 | 50.14 | 53.15 | 53.86 | 25.97 | 1.00 | 0.77 |
| Median | 0.11 | 0.05 | 1.49 | 55.01 | 52.42 | 56.36 | 55.83 | 25.50 | 0.63 | 0.63 |
| Maximum | 3.70 | 0.73 | 217.39 | 93.26 | 98.63 | 97.15 | 97.37 | 33.69 | 62.05 | 4.83 |
| Minimum | -3.00 | -0.74 | 0.04 | 1.01 | 0.02 | 0.15 | 0.70 | 18.92 | 0.00 | 0.00 |
| Std. Dev. | 0.23 | 0.07 | 5.65 | 19.64 | 24.23 | 24.36 | 21.48 | 2.55 | 2.03 | 0.60 |
| Skewness | 2.87 | 1.26 | 15.13 | -0.33 | -0.21 | -0.34 | -0.23 | 0.66 | 14.61 | 2.06 |
| Kurtosis | 55.13 | 16.40 | 428.14 | 2.35 | 2.10 | 2.13 | 2.17 | 2.94 | 348.02 | 9.24 |
| Coefficient of variation (CV) | 1.77 | 1.17 | 2.07 | 0.37 | 0.48 | 0.46 | 0.4 | 0.1 | 2.03 | 0.78 |
| Jarque-Bera test Probability | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Additionally, trend analysis has also been conducted to understand how the variables have changed over the years. In the Table 6 below, it is presented the mean values of every variable through the years of 2012 and 2021. It can be observed that ROE, ROA and TQ have not changed much in 10 years' time. ROE has only increased by 0.01 while ROA and TQ even decreased. The results of independent variables are more interesting considering the indicated outcomes of dependent variables. During the same period ESG score has gone up by 50%, while EVN and SC scores have increased even by more 50% and reached to 63.44 and 66.56, respectively. Among the independent variables, the score which increased the least was CG score which only increased by 18%. One of the main reason of this was due to the fact that CG score was already in good shape in 2012 relative to the other metrics and therefore exhibited a somewhat weaker growth. However, even the last score of 59.45 lagged behind the others in 2021. This suggests that companies have shifted their focus to environmental and social activities over the study period. Regarding control variables, LN_FS and LVG increased slightly, whereas AT demonstrated decreasing trend and became 0.72 in 2021.

**Table 6.** Mean value of every variable through the years between 2012 and 2021

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| ROE | 0.16 | 0.14 | 0.14 | 0.12 | 0.12 | 0.13 | 0.14 | 0.13 | 0.11 | 0.17 |
| ROA | 0.08 | 0.07 | 0.06 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.05 | 0.07 |
| TQ | 2.98 | 3.15 | 2.82 | 2.51 | 2.48 | 2.82 | 2.44 | 2.62 | 2.77 | 2.74 |
| ESG | 42.14 | 43.46 | 45.38 | 48.44 | 51.27 | 54.40 | 56.30 | 58.58 | 61.49 | 63.89 |
| EVN | 37.31 | 38.94 | 41.56 | 45.22 | 49.03 | 52.42 | 54.97 | 57.63 | 60.91 | 63.44 |
| SC | 40.21 | 41.82 | 44.63 | 48.25 | 51.92 | 55.49 | 58.16 | 60.72 | 63.72 | 66.56 |
| CG | 50.56 | 51.11 | 50.99 | 52.03 | 52.42 | 54.34 | 54.24 | 55.68 | 57.82 | 59.45 |
| LN_FS | 25.61 | 25.70 | 25.80 | 25.87 | 25.93 | 26.00 | 26.06 | 26.14 | 26.21 | 26.32 |
| LVG | 0.98 | 0.99 | 0.92 | 1.02 | 0.97 | 0.93 | 0.94 | 1.16 | 1.11 | 1.02 |
| AT | 0.88 | 0.84 | 0.82 | 0.77 | 0.74 | 0.75 | 0.76 | 0.74 | 0.68 | 0.72 |

### 4.1 Correlation Analysis

In order to identify the correlations among dependent, independent and control variables, the pairwise correlation test has been conducted. Results have been presented in Table 7 below and correlations which are significant at 5% and 10% have been marked with one star and two stars, respectively. Looking at the results, one of the most correlated pair is ROE and ROA (0.745*). It is natural as both of them use the same metric (net income) as numerator. Additionally, ROE (0.462*) and ROA (0.385*) are also moderately correlated with TQ. This relationship can be interpreted such that ROE and ROA are profitability ratios and as they increase, people place

higher valuations on the company making its TQ higher. Even though the correlation coefficients are very small, all financial performance variables have significant positive correlations with ESG. It is interesting to note that while ROE (0.002) and TQ (0.004) have positive correlation with EVN, ROA (-0.014) has negative correlation. However, it is worth to mention that none of these correlations are significant. Dependent variables are all positively correlated with SC and CG, but the relationship between ROA and CG is insignificant. Other interesting deduction from the correlation matrix is that ROE, ROA and TQ have the significant negative correlation with LN_FS with the almost same coefficient of -0.093*. Thus, as companies have higher assets, two of their main profitability ratios (ROE and ROA) and market performance will worsen. This is against what we mentioned earlier regarding companies having better performance through capitalizing on economies of scale. For ROE and ROA, the situation is the same in LVG case, as well. Nevertheless, TQ exhibits positive correlation with LVG which suggests that as companies are indebted more, their market performance gets better. Unlike LVG, AT are positively correlated with ROE (0.235*), ROA (0.262*) and TQ (0.247*). Looking at the correlation coefficients between dependent and control variables, it can be observed that correlation coefficients of AT are significantly higher than the other control variables. In terms of independent variables, there are strong positive correlations between ESG and EVN (0.851*), SC (0.911*) and CG (0.628*). These high correlation coefficients are expected as EVN, SC and CG are subcomponents of ESG and accordingly, they make up 43%, 31% and 26% of the ESG score[2]. Regarding the correlation among the subcomponents, we can see that SC and EVN (0.719*) is strongly positively correlated, whereas there is only a moderate positive correlation between CG and EVN (0.318*), also CG and SC (0.382). Interestingly, unlike the corporate financial performance variables, all independent variables have a positive correlation with control variables. It is important to note that correlations between EVN and AT (0.015), also between CG and LS_LN (0.005) are insignificant. Finally, when it comes to the correlation among control variables, the main point that we get is that as assets and leverage of the company increases its total asset turnover will decrease despite the very weak correlation.

**Table 7.** Correlation matrix

| | ROE | ROA | TQ | ESG | EVN | SC | CG | LN_FS | LVG | AT |
|---|---|---|---|---|---|---|---|---|---|---|
| ROE | 1.000 | | | | | | | | | |
| ROA | 0.745* | 1.000 | | | | | | | | |
| TQ | 0.462* | 0.385* | 1.000 | | | | | | | |
| ESG | 0.054* | 0.037* | 0.077* | 1.000 | | | | | | |
| EVN | 0.002 | -0.014 | 0.004 | 0.851* | 1.000 | | | | | |
| SC | 0.074* | 0.067* | 0.096* | 0.911* | 0.719* | 1.000 | | | | |
| CG | 0.028* | 0.016 | 0.060* | 0.628* | 0.318* | 0.382* | 1.000 | | | |
| LN_FS | -0.092* | -0.093* | -0.093* | 0.144* | 0.163* | 0.151* | 0.005 | 1.000 | | |
| LVG | -0.130* | -0.190* | 0.309* | 0.057* | 0.033* | 0.051* | 0.047* | 0.045* | 1.000 | |
| AT | 0.235* | 0.262* | 0.247* | 0.026* | 0.015 | 0.027* | 0.024** | -0.041* | -0.087* | 1.000 |

** significance at 5% level, ** significance at 10% level*

### 4.2 Regression Analysis Findings

Before investigating regression results, it is important to note that the main assumptions of regression analysis such as homoscedasticity, no multicollinearity and no serial correlation have been checked before getting the final results. There have not been found any problem in the data except for serial correlation. In order to remove this problem, one period lag of dependent variable has been added into the equations. Durbin-Watson test has been used to detect this problem and from the regression results below it can be observed that all the Durbin-Watson stats are greater than 1.5 suggesting no serial correlation. Additionally, the impact of random and fixed effects is especially crucial for panel data, as well. In order to determine which model

[2] ESG Scores from Refinitiv – May 2022

to choose, Hausman test has been conducted. As a result, fixed effect model will be used in this research.

Our first hypothesis states that ESG has a positive impact on the corporate financial performance. In our study we will measure corporate financial performance through ROE, ROA and Tobin's Q. Table 8 below presents the results of the regression done on the impact of ESG score on corporate financial performance metrics. First thing we notice is that 65% of the variation in ROE and ROA, and also 75% variation in Tobin's Q is explained by the independent variables measured with adjusted R-squared. Furthermore, it can be seen that ESG score has a very small negative coefficient of -0.0003. However, this result is not important for us as it is not significant even at 10% significance level. The effect of ESG score on ROA displays the similar results as it has very weak insignificant negative coefficient. The impacts of control variables on ROE and ROA are similar, as well. While higher company size and asset turnover ratio allow companies to have higher ROE and ROA, higher leverage leads them to be lower. Regarding the impact of ESG score on Tobin's Q, insignificant coefficient is observed again, however this time coefficient is positive. Other interesting thing we see is that market participants value company higher as it gets more indebted differently from ROE and ROA. Additionally, companies with higher assets are valued less by the market. It is worth to mention that impacts of all the control variables on the dependent variables are significant.

As a result of our regression results, we fail to reject the null hypothesis and state that ESG score does not have any significant effect on any of the corporate financial performance metrics measured by ROE, ROA and Tobin's Q.

**Table 8.** Regression results for the impact of ESG on the corporate financial performance metrics

| | ROE | | ROA | | Tobin's Q | |
|---|---|---|---|---|---|---|
| Variable | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| ESG | -0.0003 | 0.2051 | 0.0000 | 0.5235 | 0.0024 | 0.6473 |
| LOG(FS) | 0.0505 | 0.0000 | 0.0098 | 0.0005 | -1.1572 | 0.0000 |
| LVG | -0.0183 | 0.0000 | -0.0022 | 0.0000 | 1.4789 | 0.0000 |
| AT | 0.2261 | 0.0000 | 0.0845 | 0.0000 | 2.5070 | 0.0000 |
| Lagged dependent variable (-1) | 0.2171 | 0.0000 | 0.3796 | 0.0000 | 0.1746 | 0.0000 |
| C | -1.3461 | 0.0000 | -0.2774 | 0.0002 | 28.8084 | 0.0000 |
| R-squared | 0.6870 | | 0.6824 | | 0.7781 | |
| Adjusted R-squared | 0.6469 | | 0.6417 | | 0.7497 | |
| Prob(F-statistic) | 0.0000 | | 0.0000 | | 0.0000 | |
| Durbin-Watson stat | 1.5932 | | 1.7309 | | 1.5319 | |

There are a considerable number of studies that have found similar outcomes in various developed markets. Abbott & Monsen (1979) analyzed the reports of Fortune 500 companies and found no impact of CSR activities on stock returns. The outcome aligns with our research which also found no significant relationship between ESG activities and financial performance. Han J. *et al*. (2016) examined the relationship between CSR and corporate profit for enterprises listed on the Korea Stock Exchange. Similar to the findings of our study, they concluded that environmental responsibility has a negative relationship with financial performance and there is no statistically significant evidence linking social responsibility scores to company performance. Additionally, Nollet *et al*. (2016) did not find any significant relationship between ESG scores and CFP, either. However, our findings contradicts with the outcomes of some other studies. We examined companies in emerging market countries, whereas Ahmad *et al.* (2021) focused on publicly listed UK companies. Brammer *et al*. (2006) also conducted a similar analysis for publicly listed UK companies and found a negative relationship between CSR (social performance scores) and stock returns. These sample differences could explain why the studies yielded different outcomes. Emerging markets and developed markets may have different financial systems, governance structures, and regulatory frameworks that could impact the relationship between ESG activities and financial performance. For instance, in emerging market

countries, where institutions may be weaker, ESG activities may not yet be as important a factor for financial performance as they are in more developed economies. Friede *et al*. (2015) analyzed the results of 2200 researches regarding this topic and indicated that 90% of those studies found a non-negative relationship between financial performance and ESG practices suggesting contradictory outcomes with the findings of this research. This can be because of the facts that the studies that authors took as a sample may have employed different methodologies or analytical approaches, which can contribute to divergent findings. Additionally, the studies examined companies in different geographic and market contexts, which could introduce unique factors influencing the relationship between ESG activities and financial performance. Alareeni & Hamdan (2020) analyzed in detail the ESG activities of S&P 500 firms, which are large-cap US-listed corporations. This study reaffirms the positive relationship between ESG activities and financial performance, suggesting that differences in sample composition may have contributed to the varying results. The S&P 500 companies may be more mature, have more established ESG programs, and be subject to greater stakeholder scrutiny, which may explain why the study discovered a positive correlation between ESG activities and financial performance. Servaes and Tamayo (2013) employed various datasets and found different results compared to our research. Using Tobin's Q to measure market performance, they discovered a positive relationship between CSR and firm value, albeit subject to certain conditions. Nevertheless, it has to be noted that this relationship remains valid for companies that possess a high level of customer awareness, but it is either negative or lacks significance for those with low customer awareness. Hu *et al*. (2018) examined the influence of CSR activities on the firm values of Chinese manufacturing firms. The regional focus of this study could explain why it yielded different results compared to our study. China has unique market characteristics, regulatory frameworks, and stakeholder expectations that could impact the relationship between ESG activities and financial performance. Additionally, the study focused specifically on firm values, whereas our study examined a broader range of financial performance metrics.

In Table 9, we can see the results of regression done to measure the impact of environmental performance score on corporate financial performance metrics. Independent variables explain 65% variation in ROE and ROA and 75% in Tobin's Q measured with adjusted R-squared. Regarding the regression coefficients, as with ESG score, EVN has a negative insignificant effect on ROE and Tobin's Q. Moreover, EVN has negative impact on ROA which is statistically significant at 10% significance level. Additionally, ROE and ROA are positively affected by asset size and asset turnover ratio, whereas higher leverage affects them negatively. However, compared to the impacts on ROE and ROA, asset size and leverage had completely different effect on Tobin's Q with accordingly negative and positive effects. Unlike EVN, the impact of control variables on corporate financial performance metrics are significant.

**Table 9:** Regression results for the impact of environmental performance score (EVN) on corporate financial performance metrics

| | ROE | | ROA | | Tobin's Q | |
|---|---|---|---|---|---|---|
| Variable | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| EVN | -0.0002 | 0.1722 | -0.0001 | 0.0510 | -0.0001 | 0.9721 |
| LOG(FS) | 0.0509 | 0.0000 | 0.0104 | 0.0002 | -1.1462 | 0.0000 |
| LVG | -0.0183 | 0.0000 | -0.0023 | 0.0000 | 1.4786 | 0.0000 |
| AT | 0.2259 | 0.0000 | 0.0847 | 0.0000 | 2.5146 | 0.0000 |
| Lagged dependent variable (-1) | 0.2170 | 0.0000 | 0.3792 | 0.0000 | 0.1747 | 0.0000 |
| C | -1.3597 | 0.0000 | -0.2893 | 0.0001 | 28.6512 | 0.0000 |
| | | | | | | |
| R-squared | 0.6870 | | 0.6827 | | 0.7781 | |
| Adjusted R-squared | 0.6469 | | 0.6420 | | 0.7497 | |
| Prob(F-statistic) | 0.0000 | | 0.0000 | | 0.0000 | |
| Durbin-Watson stat | 1.5938 | | 1.7321 | | 1.5320 | |

As a result of our regression results, we fail to reject the null hypothesis and state that environmental performance score does not have any significant effect on any of the corporate financial performance metrics measured by ROE and Tobin's Q. Nevertheless, we reject the null hypothesis regarding the influence of EVN on ROA and conclude that environmental performance has statistically significant negative impact on corporate financial performance measured by ROA.

Regarding the research suggesting similar outcomes to our study, Lucy Lu & Taylor (2018) found a negative relationship between financial and environmental performances on S&P 500 firms. Despite the inclination of environmental-friendly firms to disclose their environmental performance, the study suggests that this does not translate into improved financial performance. Cohen *et al*. (1997) also performed a similar study with the same sample and found no conclusive result regarding this relationship. Horváthová (2010) conducted a meta-analysis of 37 empirical studies and discovered no significant relationship between EP and CFP based on regression analysis. However, when considering correlation analysis and portfolio studies, a negative relationship between EP and CFP was observed. The study also found that the type of EP mattered, indicating that different environmental performance dimensions may have varying impacts on financial performance. These are in line with our research which suggested negative or no impact of environmental performance on the CFP. Overall, these findings add to the understanding that the relationship between EP and CFP is multifaceted and can depend on the specific analytical approaches and environmental performance dimensions considered. Earnhart & Lizal (2007) examined the impact of pollution control on corporate financial performance, focusing on Czech firms from 1996 to 1998. They found that pollution control, characterized by reduced air pollutant emissions, do not have a significant impact on the financial performance of the analyzed Czech firms during the specified period. Furthermore, Wagner *et al*. (2002) focused on the European paper manufacturing industry and examined the relationship between ecological performance and financial performance, using metrics such as ROE, ROS, and ROCE. Their research revealed an inverse relationship between ecological performance and financial performance. This underscores the importance of industry-specific considerations and highlights the potential variations in the relationship between environmental performance and financial performance across different sectors. There are also other studies suggesting contradictory conclusions to our research. In order to determine the impact of environmental performance on the CFP, Konar and Cohen (2001) focused on S&P 500 firms and specifically examined the impact of environmental activities on the value of intangible assets and market performance. They found that reducing toxic emissions by 10% leads to a $34 million increase in market value. This is against the outcome of our study which suggested no relationship between EP and market performance. Furthermore, while our study suggests a non-positive relationship between environmental performance and CFP, Al Tuwaijri *et al*.'s (2004) findings point towards a positive impact of environmental activities on the economic performance. This can be attributed to the positive effects on financial performance stemming from various factors, including cost savings resulting from enhanced resource efficiency, improved reputation and customer loyalty, and adherence to environmental regulations. These factors collectively contribute to a favorable impact on the company's overall profitability. The research by Hart and Ahuja (1996) focused on the impact of emission reductions on corporate financial performance (CFP) using metrics such as Return on Sales (ROS), ROA, and ROE. Unlike our study, they found that emission reductions lead to improved CFP, but with varying lag times for different metrics. The discrepancy in outcomes could be attributed to the specific focus on emission reductions in Hart and Ahuja's study, as well as the different sample of S&P 500 firms. The time lag in the financial impact may be due to the need for companies to implement and optimize emission reduction efforts before experiencing the full financial benefits. Nakao *et al*. (2007) conducted the similar study for Japanese market utilizing the same metrics that we used in our study. The findings reveal a positive impact of EP on all three metrics, which are not in line with our study's observations of a non-positive relationship between environmental

activities and CFP. Russo and Fouts' (1997) research, unlike our research, discovered a positive relationship between EP and ROA. In addition, their study also highlighted that this positive relationship is even stronger in higher-growth industries. By considering industry-specific factors, their findings suggest that the growth potential of an industry can amplify the financial benefits of environmental performance. Albertini (2017) conducted a general analysis on the previous 52 researches performed over 35 years and she also concluded that there is a positive relationship between corporate environmental management (CEM) and CFP.

The individual effect of the impact of social performance scores on corporate financial performance metrics has been presented below in Table 10. As with the previous regressions, 65% variation in ROE and ROA, and 75% variation in Tobin's Q is explained by independent variables. Additionally, not surprisingly, social performance score has also insignificant negative effect on ROE. Nevertheless, its impact on ROA and Tobin's Q are positive despite them being not significant at 5% significance level. The impact of control variables on corporate financial metrics are similar with the previous regressions - asset size and asset turnover ratio affecting positively to ROE and ROA while negatively affected by leverage. Additionally, Tobin's Q is affected positively by the leverage and negatively by the asset size.

**Table 10.** Regression results for the impact of social performance score (SC) on corporate financial performance metrics

| | ROE | | ROA | | Tobin's Q | |
|---|---|---|---|---|---|---|
| Variable | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| SC | -0.0001 | 0.4984 | 0.0000 | 0.5307 | 0.0036 | 0.3714 |
| LOG(FS) | 0.0497 | 0.0000 | 0.0095 | 0.0008 | -1.1620 | 0.0000 |
| LVG | -0.0183 | 0.0000 | -0.0022 | 0.0000 | 1.4787 | 0.0000 |
| AT | 0.2256 | 0.0000 | 0.0842 | 0.0000 | 2.5017 | 0.0000 |
| Lagged dependent variable (-1) | 0.2171 | 0.0000 | 0.3790 | 0.0000 | 0.1746 | 0.0000 |
| C | -1.3352 | 0.0000 | -0.2726 | 0.0002 | 28.8696 | 0.0000 |
| | | | | | | |
| R-squared | 0.6869 | | 0.6824 | | 0.7782 | |
| Adjusted R-squared | 0.6468 | | 0.6417 | | 0.7497 | |
| Prob(F-statistic) | 0.0000 | | 0.0000 | | 0.0000 | |
| Durbin-Watson stat | 1.5931 | | 1.7297 | | 1.5319 | |

As a result of our regression results, we fail to reject the null hypothesis and state that social performance score does not have any significant effect on any of the corporate financial performance metrics measured by ROE, ROA and Tobin's Q.

Rust & Zahorik (1993) was of the studies that reached the same conclusion about this relationship. They gauged the individual effect of social activities on CFP and examined the impact of customer satisfaction and retention on firm performance, specifically market share, in the context of retail banks. The study did not find any conclusive outcome and stated that while certain activities contributed to increased profitability, there were other activities that did not translate into improved financial performance despite enhancing customer satisfaction. This implies that the connection between customer satisfaction and financial performance is not necessarily direct and can be impacted by various other factors. Bernhardt *et al*. (2000) came to the same conclusion after conducting cross-sectional analysis on their sample. Additionally, Wiley (1991) found no direct relationship between employee satisfaction and CFP. Seifert *et al*. (2004) analyzed the effect of corporate charitable giving (CGG) on corporate financial performance using "total return to shareholders" as a metric. Their study focused on companies from the Fortune 1000 list. The findings indicated that there was no significant effect on profits resulting from corporate generosity. There also other studies finding significant impact of social activities on CFP. Chi & Gursoy (2009) sampled 3 and 4-star hotels and their outcome differed from our study. They discovered that customer satisfaction positively affects financial performance. They also identified an indirect relationship between employee satisfaction and CFP, as satisfied employees led to happy customers, resulting in increased revenue. Hatane

(1995) also studied the similar topic and suggested the similar outcomes by analyzing firms in Indonesia. This finding contrasts with our study's conclusion of no significant relationship between social activities and CFP in emerging market countries. Moreover, in the research conducted by Nelson *et al*. (1992) in the hospital industry, they discovered a positive relationship between patients' perception of service quality and financial performance, measured by net revenue, earnings, and return on assets. This finding contradicts our research, as it suggests a significant impact of social activities (service quality) on CFP. While study by Kim *et al*. (2017) suggests a positive relationship between employee relations and CFP through knowledge performance, our outcomes did not support this hypothesis in the context of emerging market countries. One of the main reasons for this difference could be that the authors based their analysis on a sample originating from the United States. These contrasting outcomes highlight the complexity and potentially contextual nature of the relationship between social activities and financial performance. It is important to consider factors such as industry focus, sample characteristics, and specific metrics used when interpreting and comparing these findings. Unlike their peers, Chen & Lin (2015) focused on the influence of corporate philanthropy on the CFP of Taiwanese hospitality companies. In contrast to our study, Chen & Lin's findings indicated that corporate philanthropy had a significant impact on all measures of financial performance. This highlights a divergence in results, suggesting that the relationship between social activities, specifically charitable giving, and financial performance may vary across different contexts. Lev *et al*. (2009) examined the same relationship and their findings revealed a significant positive relationship between charitable contributions and revenue growth. This contrasts with our study's conclusion of no significant relationship. This discrepancy between the CFP metrics and samples utilized by our study and those of Lev *et al*. may be one of the reasons for divergent results.

Table 11 presents the regression result of the last subcomponent of ESG – corporate governance performance score. Before explaining the regression coefficients, it is worthwhile to indicate that independent variables explain 65% variation in ROE and ROA, while this percentage is higher for Tobin's Q with 75%. ROE, ROA and Tobin's Q are all negatively affected by corporate governance performance score. However, as with the other regressions, these results are not significant even in 10% significance level. Nonetheless, control variables had significant effect on the corporate financial performance metrics. The impact of asset turnover ratio was positive on all variables. However, asset size and leverage displayed different results. The impact of asset size on ROE and ROA was positive, while leverage affected them negatively. Unlike ROE and ROA, Tobin's Q was affected negatively by asset size and positively by leverage.

As a result of our regression results, we fail reject the null hypothesis and state that corporate governance performance score does not have any significant effect on any of the corporate financial performance metrics measured by ROE, ROA and Tobin's Q.

**Table 11.** Regression results for the impact of corporate governance performance score (CG) on corporate financial performance metrics

| | ROE | | ROA | | Tobin's Q | |
|---|---|---|---|---|---|---|
| Variable | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| CG | -0.0002 | 0.3259 | 0.0000 | 0.7567 | -0.0031 | 0.3993 |
| LOG(FS) | 0.0495 | 0.0000 | 0.0096 | 0.0006 | -1.1418 | 0.0000 |
| LVG | -0.0183 | 0.0000 | -0.0022 | 0.0000 | 1.4785 | 0.0000 |
| AT | 0.2254 | 0.0000 | 0.0843 | 0.0000 | 2.5184 | 0.0000 |
| Lagged dependent variable (-1) | 0.2168 | 0.0000 | 0.3795 | 0.0000 | 0.1749 | 0.0000 |
| C | -1.3270 | 0.0000 | -0.2744 | 0.0002 | 28.6948 | 0.0000 |
| | | | | | | |
| R-squared | 0.6870 | | 0.6824 | | 0.7781 | |
| Adjusted R-squared | 0.6469 | | 0.6417 | | 0.7497 | |
| Prob(F-statistic) | 0.0000 | | 0.0000 | | 0.0000 | |
| Durbin-Watson stat | 1.5924 | | 1.7303 | | 1.5323 | |

Eventually, in terms of the studies which found similar outcomes as our research, Guluma (2021) examined the impact of corporate governance (CG) measures on the CFP of Chinese firms using ROA and Tobin's Q as metrics. Like our study, Guluma found no impact of board independence on ROA and Tobin's Q. Additionally, CEO duality had also no impact on ROA. Kyere & Ausloos (2020) conducted comprehensive research using the same corporate governance measures. They concluded that board independence has no significant effect on market performance. They also did not find any impact of CEO duality on CFP, aligning with the results of our study. Moreover, Rodriguez-Fernandez *et al*. (2014) investigated the relationship between governance measures (board size, percentage of independent directors, and CEO duality) and CFP. Their findings revealed no significant relationship between these governance factors and CFP. Elsayed (2007) focused on Egyptian public limited firms and investigated the same topic using ROA and Tobin's Q. Elsayed found no direct effect of CEO duality on financial performance. However, additional analysis reveals that whether the effect of CEO duality is positive or negative depends on the industry and company specific characteristics, as well. In summary, the impact of board leadership structure differs among firms and industries, suggesting a context-specific relationship between governance structures and performance. Ehikioya (2009) examined the impact of corporate governance on firm performance using data from publicly traded firms listed on the Nigerian Stock Exchange. Similar to the outcomes of our research, this study did not find significant evidence regarding the influence of board composition on firm performance, either indicating an insignificant effect. Finally, in regards to the influence of governance performance on the CFP, there are some studies that have discovered significant relationships that contradict our findings. Stanwick & Stanwick (2002) utilized Business Week's rankings of the Best and Worst Board of Directors as an indicator of corporate governance. Their research found evidence supporting the notion that effective corporate governance is associated with superior financial performance compared to weak governance. They emphasized factors such as board independence, board quality, and shareholder accountability as positively influencing firm performance. Moreover, in a study conducted by Enhardt *et al*. (2003), the influence of board of directors' diversity on corporate financial performance (CFP) was investigated using a sample of 127 prominent companies. In contrast to our own study, their findings revealed a positive relationship between board diversity and CFP. More specifically, they concluded that as the representation of women and minorities increased on the board, companies observed higher ROA and ROI. Similar to our research, Klapper and Love (2004) focused on emerging markets, but the key difference lies in the outcomes. While we found no significant relationship, Klapper and Love identified a positive relationship between corporate governance (CG) and both stock market and operating performances. Furthermore, they highlighted that this relationship is stronger in countries with weaker legal systems, indicating the influence of country-level factors. These findings suggest that governance-performance dynamics might vary across different legal and institutional environments. Bhatt and Bhatt (2017) conducted a similar study specifically focusing on Malaysian listed companies. They also found a significant association between firm performance and corporate governance. Nevertheless, the study's focus on a specific country context highlights the importance of considering unique governance-performance relationships within different markets. Furthermore, Alfaraih *et al.* (2012) analyzed the specific effects of institutional and government ownership on firm performance in the context of the Kuwait Stock Exchange (KSE). Institutional shareholders were found to have a positive impact on KSE company performance, highlighting their influential role within the company structure. Conversely, the study shows that government ownership is associated with poorer market performance. These findings emphasize the contrasting effects of non-governmental and government ownership on firm performance.

Regarding the effect of control variables on the corporate financial performance, our findings indicate very distinct outcomes. While higher company size and asset turnover ratio allow companies to have higher ROE and ROA, higher leverage leads them to be lower. Regarding the

impact of the assets size on the CFP, Tudose (2022) suggested that asset size has positive impact on the financial performance measured by net profit margin, ROA and Economic Value Added. The studies done by Vijayakumar (2011) and Erasmus (2013) are also in line with this result. Additionally, in terms of the impact of asset turnover ratio (ATR), the study Nurlaela *et al*. (2019) revealed that there is a significant positive relationship between ATR and CFP. Le Thi Kim *et al*. (2021) conducted a similar study analyzing 30 food processing companies listed in Vietnam between the years 2014 and 2019. They found a positive effect of ATR on the CFP measured by ROE. Finally, about the negative relationship between leverage and CFP, the pecking order theory, formulated by Myers and Majluf (1984), suggests that firms should adhere to a financing hierarchy to address information asymmetries among parties. In line with this theory, highly profitable firms do not typically seek external financing, as they possess substantial retained earnings that serve as an internal source of funds. This negative relationship is also supported by the studies done by Tudose (2022) and Le Thi Kim *et al*. (2021). Furthermore, there is a negative relationship between a company's asset size and its stock market performance as indicated by Tobin's Q. Wong (1989) investigated the empirical relationship between firm size and the returns on equities listed on the Singapore Stock Exchange. The findings indicate that small firm equities have generated higher returns than large firm stocks. Dhawan (2011) has performed the similar study and reached the same conclusion for US firms. It is also worth noting that according to our results, higher leverage positively impacts a company's stock performance. Rajan & Zingales (1995) is one of the rare studies measuring this direct relationship. They conducted a study on G-7 countries from 1987 to 1990, and their findings revealed an inverse relationship between changes in leverage and stock returns. Moreover, they observed that this relationship becomes more pronounced as firm size increases.

The disparities in findings of our study and conducted by our peers can be attributed to multiple factors. Firstly, the varying sample sizes could have an impact. We analyzed a specific-sized sample of 5560 observations, while other studies may have utilized larger or smaller samples, potentially leading to divergent outcomes. Secondly, discrepancies in the years under examination could contribute to the differences. Our study focused on the years spanning from 2012 to 2021, whereas other studies may have focused on different time periods. Economic conditions and corporate dynamics can fluctuate across various years, potentially influencing the observed relationship between board diversity and corporate financial performance. Thirdly, dissimilarities in the composition of the samples themselves could be influential. Some research papers may concentrate on developed countries, while others may narrow their focus to specific regions or even individual emerging markets. Lastly, the variation in metrics used to assess financial performance is critical. Other research may employ different financial indicators than those utilized in this study to evaluate the financial performance of corporations.

### 4.3 Discussions

In our empirical study, findings reveal that there is no statistically significant relationship between ESG scores (excluding environmental performance) and financial performance, as gauged by accounting-based indicators such as Return on Equity (ROE) and Return on Assets (ROA), as well as market-based measure Tobin's Q. These can be attributed to several economic factors and considerations. Firstly, according to the report by OECD, regulation regarding the ESG activities in emerging market countries lags behind the developed countries and due to this reason, weak or insufficiently enforced regulations may reduce the financial implications of non-compliance with ESG standards. In the absence of significant penalties or legal requirements, companies may view ESG activities as discretionary rather than essential for profitability. Additionally, not observing enough pressure from the regulatory bodies, fewer institutional investors or shareholder advocacy groups will exert pressure to companies to follow the sustainable business practices. Consequently, the absence of shareholder activism may reduce the incentives for companies to prioritize ESG activities for the sake of profitability. Additionally,

companies in emerging market countries may be subject to less pressure from stakeholders, such as investors, customers, and local communities, to implement ESG practices than their counterparts in developed markets. In some emerging market countries, stakeholders may have a lower level of awareness and comprehension of ESG issues. This is due to limited access to information, lower levels of education, and a focus on more immediate economic concerns. Without a solid grasp of ESG concepts and their potential benefits, stakeholders might not exert significant pressure on businesses to adopt sustainable practices. Consequently, limited stakeholder awareness of ESG issues reduces demand for sustainable goods and services. Investing in ESG activities may not have a direct influence on the profitability of a business if there is insufficient market demand for ESG-focused products. In most of the emerging market countries, economic development and growth take precedence over ESG concerns. This is because societal values and expectations that prioritize economic prosperity over environmental or social concerns influence companies' decisions regarding ESG activities. If profitability is seen as the primary goal and societal norms do not prioritize sustainability, companies may allocate fewer resources towards ESG initiatives (OECD, 2021). Therefore, companies operating in these markets face pressure to focus on generating revenue and expanding market share rather than investing in sustainability practices. The development of civic engagement may also play a role in these findings. According to the study done by Denhardt *et al*. (2009), developing countries have many barriers to civic engagement that hinders the active participation of individuals in their communities, societies, and the democratic processes that shape them. The limited capacity and engagement of civil society organizations mean there is less pressure on companies to adopt ESG practices. Without organized advocacy and accountability mechanisms, companies may perceive fewer reputational risks or negative consequences for neglecting ESG activities, potentially leading to a weaker link between ESG and profitability. In terms of stock market performance, investors in emerging markets may place greater emphasis on financial performance and short-term returns than on ESG factors. Rather than ESG performance, their investment decisions may be influenced by economic growth potential, market conditions, and financial metrics. Consequently, ESG activities may not be assigned significant weight in stock market valuations. Moreover, ESG reporting standards can vary across different emerging market countries. Inconsistent or less standardized reporting requirements can lead to discrepancies in ESG disclosures among companies, making it challenging for investors to compare and evaluate ESG performance effectively (Lavin & Montecinos-Pearce, 2021). This lack of comparability and transparency can limit the market's ability to accurately assess the ESG impact on stock market performance. No relationship between the studied variables can also occur due to time lags. Building trust and establishing a strong reputation through ESG activities takes time. While these initiatives can contribute to long-term profitability by enhancing brand value and reputation, the impact may not be immediately evident. It often requires consistent and sustained efforts over a significant period to see tangible benefits in terms of customer loyalty, increased sales, and overall profitability. Emerging market countries often have unique market dynamics and consumer behaviors compared to more developed economies. Customers in these markets may prioritize different factors when making purchasing decisions, such as price or product quality, over a company's social activities. This can make it challenging for ESG initiatives alone to drive significant increases in customer satisfaction or loyalty, which are directly linked to profitability and stock market performance. Typically, ownership patterns in emergent market countries are distinct from those in developed markets. In these markets, family or state-owned businesses are prevalent, which can influence decision-making processes and undermine the efficacy of governance practices (McKinsey, 2014). In such instances, ownership and control factors may have a greater impact on profitability and market performance than governance practices. As previously stated, emerging markets typically have less developed legal systems, regulatory frameworks, and enforcement mechanisms. This can reduce the efficacy of governance mechanisms and their influence on profitability and stock market performance. Even if a

company implements strong governance practices, the absence of institutional support may hinder their ability to increase profitability and market return. In addition, emerging markets may face challenges such as volatile economic conditions, political instability, and elevated levels of corruption (Khan & Farooq, 2019). These factors can overshadow the profitability-enhancing effects of governance performance activities. Macroeconomic factors and market conditions may have a greater impact on the company's financial performance than the specific governance practices implemented.

As mentioned earlier, our results indicate that environmental performance does not have significant impact on the corporate financial performance measured by ROE and Tobin's Q. However, we did observe a significant negative relationship between the environmental performance and ROA. This result suggests that while ESG scores may not uniformly impact financial performance across all dimensions, the environmental score specifically may have implications for a firm's profitability. These results may be due to the fact that in some emerging market countries, industries may be highly competitive, and profit margins may be low. Implementing environmental activities, such as adopting sustainable practices or investing in clean technologies, often requires significant upfront costs and allocating resources to environmental initiatives may be financially burdensome. Under such conditions, companies may prioritize cost-cutting measures and operational efficiency to remain competitive (International Finance Corporation, 2002). Environmental activities, while important for sustainability, may be perceived as additional expenses that could erode profitability, especially if competitors are not adopting similar practices. In addition, developing economies frequently encounter issues with infrastructure, including insufficient waste management systems and restricted availability of renewable energy resources. For example, if the area lacks an adequate waste management system, the company might need to transport the waste to distant facilities, leading to higher transportation expenses, delays, and logistical complications. This can lead to heightened transportation expenses, delays, and logistical challenges. Such inefficiencies contribute to the overall production costs, thereby diminishing profitability. These limitations make it arduous and expensive for companies to adopt environmentally sustainable practices. Moreover, the absence of supportive infrastructure hinders the viability and efficacy of environmental initiatives, subsequently diminishing their influence on profitability and stock market performance. Overall, as we described when explaining the impact of ESG scores, in many emerging markets, customers may have limited purchasing power and face economic challenges. As a result, their primary concern may be obtaining products or services at the lowest possible cost rather than considering environmental factors. Affordability often takes precedence over sustainability in purchasing decisions.

Regression results of our study for the company size and asset turnover ratio are in line with our expectation. As firm's asset size increases, it can improve its financial performance by taking advantage of economies of scale and higher total asset turnover is believed to result in improved financial performance as a result of the company's more efficient use of its assets. In terms of the impact of the leverage on ROE and ROA, this can be due to the higher borrowing costs or prevalence of the pecking order theory in developing countries[3]. Due to this factor, as emerging market companies increased their leverage, their profitability declined. In addition, the negative impact of asset size on the market performance can be explained by the fact that larger asset sizes often reflect mature companies with limited growth potential. As a result, investors anticipate lower future returns from these companies and place more emphasis on early-stage companies that possess fewer assets, expecting higher growth potential (Harvard Business Review, 2016). Additionally, leverage having positive influence on market performance can be due to the fact that when companies choose to increase their debt levels as part of their capital structure, it can act as a credible signal indicating their expectation of higher future cash flows. The reason behind this is that opting to increase debt indicates the company's belief in its

capacity to generate adequate income to fulfill the interest obligations owed to debt holders. By demonstrating a commitment to fulfill these obligations, the company is also incentivized to manage its remaining cash flow more effectively. This strategic approach to debt utilization can convey a sense of financial strength and stability to stakeholders, attracting potential investors.

# 5. CONCLUSION

The purpose of this study is to examine the relationship between Environmental, Social, and Governance (ESG) activities of the companies and their corporate financial performance (CFP) in emergent markets. To measure CFP, two profitability metrics, Return on Equity (ROE) and Return on Assets (ROA), are employed. Tobin's Q is also used to assess the impact of ESG activities on stock market performance. Furthermore, the study takes into consideration various control variables to address possible confounding factors. These control variables encompass firm size, determined by the logarithm of total assets, leverage measured by the debt-to-equity ratio, and asset turnover ratio.

The sample for the study consists of 556 companies operating in emerging market countries. Dataset includes annual data from 2012 to 2021, resulting in a total of 5560 observations. To ensure the representation of emerging markets as a whole, we focused on firms listed in the "MSCI Emerging Markets Investable Market Index (IMI)". To obtain the necessary data, Refinitiv Eikon database was used, which served as the primary source for the study. Per our knowledge, this study is the first to examine the relationship between ESG performance and CFP in emerging markets comprehensively.

Apart from the negative relationship observed between environmental performance and ROA, the study's regression analyses reveal that the activities related to Environmental, Social, and Governance (ESG) do not have a significant impact on any of the performance metrics used to measure corporate financial performance. Consequently, the study suggests that all the relationships between ESG performance and CFP in emerging markets are non-positive, implying no notable positive effects.

The study's outcomes have crucial implications for researchers and policymakers in the respective field. Firstly, considering that the study focused on emerging market countries, future research could explore the relationship between ESG performance and CFP in other contexts, specific industries or even developed markets. Additionally, further investigation could delve into the specific reasons behind the lack of significant positive effects observed in the study. It would be valuable to identify potential factors or mechanisms that may moderate or mediate the relationship between ESG activities and CFP. Policymakers can use the study's results to inform the development of ESG-related policies and regulations in emerging markets. Understanding that there may be limited direct positive effects of ESG activities on CFP, policymakers can explore alternative ways to encourage and incentivize sustainable practices, such as providing tax incentives, grants, or subsidies for ESG initiatives.

### 5.1 Limitations

There are also several limitations to consider in this study. Firstly, we obtained ESG scores from Refinitiv Eikon database. Considering the fact that each data provider has its own method for calculating this score, ESG scores and, ultimately, conclusions may vary based on the data provider chosen. Additionally, this study focused on companies listed in the "MSCI Emerging Markets Investable Market Index (IMI)". While this helps provide a representative sample for emerging markets, it may limit the generalizability of the findings to companies outside of this index. Finally, we only managed to analyze 10 years of data. As data is accrued over time, future research could explore the long-term effects of ESG factors on corporate financial performance (CFP) by examining data over an extended period after the implementation of ESG initiatives. This would allow researchers to investigate whether the impact of ESG factors becomes more apparent and influential over time.

**ACKNOWLEDGEMENT**

The paper was presented at the 26th Finance Symposium and sought feedback and comments. We are grateful to Dr. Murat Akkaya and Dr. Tarana Azimova for their recommendations. Finally, the views expressed in this paper are those of the authors and do not necessarily represent the views of their affiliated institutions.

**Author Contributions:** Conceptualization, F.A. and N.A.; methodology, N.A.; software, N.A.; validation, F.A., and N.A.; formal analysis, F.A.; investigation, F.A. and N.A.; resources, N.A.; data curation, N.A.; writing—original draft preparation, N.A. and F.A.; writing—review and editing, F.A.; supervision, F.A.; project administration, F.A. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

**REFERENCES**

Abbott, W. F., & Monsen, R. J. (1979). On the Measurement of Corporate Social Responsibility: Self-Reported Disclosures as a Method of Measuring Corporate Social Involvement. *Academy of Management Journal, 22*(3), 501–515.

Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. *Corporate Governance: The International Journal of Business in Society, 20*(7), 1409–1428.

Åsa Björnberg, Heinz-Peter Elstrodt, & Vivek Pandit (2014). The family-business factor in emerging markets. *McKinsey Quarterly.*

Barry Libert, Megan Beck, & Yoram (Jerry) Wind. (2016). Investors Today Prefer Companies with Fewer Physical Assets. *Harvard Business Review.*

Brammer, S., Brooks, C., & Pavelin, S. (2006). Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures. *Financial Management, 35*(3), 97–116.

Denhardt, J., Terry, L., Delacruz, E. R., & Andonoska, L. (2009). Barriers to Citizen Engagement in Developing Countries. *International Journal of Public Administration, 32*(14), 1268–1288.

Dhawan, R. (2011), Firm size and productivity differential: theory and evidence from a panel of US firms. *Journal of Economic Behaviour and Organization, 44*, 269-293.

Erasmus, F.K. (2013). Impact of size and age on firm performance: evidence from microfinance institutions in Tanzania. *Research Journal of Finance and Accounting, 4*(5), 105-116.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233.

Global Sustainable Investment Alliance (GSIA). (2021). Global Sustainable Investment Review, 2020.

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking & Finance, 35*(7), 1794–1810.

Hamdan, A. (2018). Board interlocking and firm performance: the role of foreign ownership in Saudi Arabia. *International Journal of Managerial Finance, 14*(3), 266–281.

Han, J.-J., Kim, H. J., & Yu, J. (2016). Empirical study on relationship between corporate social responsibility and financial performance in Korea. *Asian Journal of Sustainability and Social Responsibility, 1*(1), 61–76.

Hortense, Bioy. (2021). Sustainable Funds' Record-Breaking Year. *Morningstar.*

Hu, Y., Chen, S., Shao, Y., & Gao, S. (2018). CSR and Firm Value: Evidence from China. Sustainability, 10(12), 4597

International Finance Corporation. (2002). Developing Value: The Business Case for Sustainability in Emerging Markets.

John, Hale. (2021). A Broken Record: Flows for U.S. Sustainable Funds Again Reach New Heights. *Morningstar.*

Lavin, J. F., & Montecinos-Pearce, A. A. (2021). ESG Reporting: Empirical Analysis of the Influence of Board Heterogeneity from an Emerging Market. *Sustainability, 13*(6), 3090.

Master, W. XI. & Yong, H. (2014). An Empirical Study of the Relationship between Capital Structure and Financial Performance -Based on Neural Network Analysis. *International Journal of Business and Social Science, 5*(4).

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187–221.

Nhung Le Thi Kim, Daphné Duvernay, Huyen Le Thanh. (2021). Determinants of financial performance of listed firms manufacturing food products in Vietnam: regression analysis and Blinder–Oaxaca decomposition analysis. *Journal of Economics and Development, 23*(3), 267-283

Nollet, J., Filis, G., & Mitrokostas, E. (2016). Corporate social responsibility and financial performance: A non-linear and disaggregated approach. *Economic Modelling, 52*, 400–407.

Nurlaela, S., Mursito, B., Kustiyah, E., Istiqomah, I., & Hartono, S. (2019). Asset Turnover, Capital Structure and Financial Performance Consumption industry company in Indonesia Stock Exchange. *International Journal of Economics and Financial Issues, 9*(3), 297–301.

OECD, (2018). Improving Plastics Management: Trends, policy responses, and the role of international cooperation and trade. *OECD Environment Policy Papers, 12*

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. *Organization Studies, 24*(3), 403–441

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance, 50*(5), 1421–1460

Rana Ejaz Ali Khan & Sarwat Farooq. (2019). Corruption, Political Instability and Sustainable Development: The Interlinkages. *Journal of Quantitative Methods, 3*(1), 57-84.

Sahut, J.-M., & Pasquini-Descomps, H. (2015). ESG Impact on Market Performance of Firms: International Evidence. *Management International, 19*(2), 40.

Servaes, H., & Tamayo, A. (2013). The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. *Management Science, 59*(5), 1045–1061.

The Forum for Sustainable and Responsible Investment (US SIF). (2020). The US SIF Foundation's Biennial "Trends Report" Finds That Sustainable Investing Assets Reach $17.1 Trillion. https://www.ussif.org/blog_home.asp?Display=155

Tudose, M. B., Rusu, V. D., & Avasilcai, S. (2022). Financial performance – determinants and interdependencies between measurement indicators. *Business, Management and Economics Engineering, 20*(1), 119–138.

Vijayakumar, A. (2011). The determinant of profitability: an empirical investigation using Indian automobile industry. *International Journal of Research in Commerce and Management, 2*(1), 58-64.

Wong, K. A. (1989). The firm size effect on stock returns in a developing stock market. *Economics Letters, 30*(1), 61–65.