

Is There a Return on Responsibility?

The Relationship between ESG and Financial Performance:

An Empirical Examination of European Retail Companies

BSc Thesis in Retail Management

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Abstract

With growing stakeholder emphasis on corporate sustainability becoming increasingly important, a central question arises: do Environmental, Social, and Governance (ESG) efforts contribute to stronger financial performance, or do they divert resources from the core profit-generating activities? Prior research offers mixed evidence. While the majority of studies report a positive or neutral relationship between ESG and financial performance, others suggest that ESG initiatives may hurt short-term profitability, particularly in cost-sensitive sectors like retail. This study aims to examine the relationship between ESG efforts and financial performance within the European retail sector. For this purpose, a panel dataset of 185 publicly traded European retail companies, including 850 firm-year observations from 2014 to 2023, is analysed using regression models to assess the impact of overall ESG efforts and each individual ESG pillar on Return on Assets (ROA) and Tobin's Q as measures of accounting-based profitability and market-based valuation, respectively. Our findings reveal a significant negative association between overall ESG scores and ROA, indicating short-term profitability trade-offs. When disaggregated, the Social pillar shows a robust negative effect on ROA but a positive and significant relationship with Tobin's Q, reflecting that while social initiatives may hurt the immediate profitability, they are perceived favorably by investors. The Environmental pillar shows a negative impact on market valuations, and Governance displays no significant effect across all models. Our findings reveal a complex and nuanced nature of ESG's financial implications, varying not only by the ESG components but also by the financial metrics. For retail firms, the challenge lies in balancing short-term operational performance with long-term strategic value creation through sustainability.

Key terms: Sustainability, environmental, social, and governance performance, financial performance, retail industry, value creation.

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1. Introduction

The increasing global awareness of corporate sustainability has positioned environmental, social, and governance (ESG) objectives as a core focus of strategic decision-making for firms worldwide. Over the last decade, ESG performance has gone from a “nice-to-have” to a strategic importance. ESG frameworks have evolved as businesses, investors, and policymakers recognize the need to incorporate long-term sustainability into financial decision-making (Alareeni & Hamdan, 2020). This shift is not only a response to rising customers’ expectations for ethical practices but is also shaped by regulatory requirements and increasing investor demand for transparency and accountability (Flammer, 2015). Large corporations are subject to substantial pressure to operate ethically and sustainably. Investors increasingly favor companies exhibiting strong ESG compliance, and consumers’ purchase behavior aligns with brands that reflect their values. Consequently, stakeholders, including shareholders, policymakers, and the public, expect firms to increase their efforts in non-financial aspects, including ESG activities.

This transformation is particularly evident in the European retail sector, where ESG visibility and expectations are exceptionally high. Retail firms are in direct interaction with consumers, and fast fashion brands like H&M and supermarket giants like Carrefour are under constant pressure to exhibit a measurable commitment to climate action, fair labor, and ethical governance (Rana & Tajuddin, 2021). At the same time, consumers in the retail sector tend to be more price-sensitive, making it difficult for firms to pass the cost of ESG investments onto end customers (Cakici & Tekeli, 2022). These conflicting pressures differentiate ESG activities in retail from other industries.

Europe has established itself as a leader in sustainable accounting standards with frameworks that have evolved to mandate greater sustainable disclosure. The European Union was the first to introduce a directive in 2014 requiring large companies to report on non-financial ESG information, which was later significantly expanded in 2024 with the Corporate Sustainability Reporting Directive (European Union, 2014; European Union, 2022). The most recent Omnibus Regulation proposed by the European Commission (2023) aims to consolidate multiple requirements under the previous directive to boost competitiveness and unlock additional investment capacity. The new proposal targets only the largest companies (more than 1000 employees) to ensure that the sustainable reporting requirements do not

harm innovation and growth. The package also proposes easing supply chain transparency rules, potentially reducing compliance costs for large companies (European Commission, 2023). While these proposals aim to reduce administrative burdens and boost competitiveness in the EU, they have sparked debate. Some stakeholders express concern that such deregulation may weaken corporate accountability and hinder climate objectives.

A central question in both academic research and corporate boardrooms is whether such ESG initiatives improve or hurt financial performance for individual firms. A study by Friede et al. (2015) examined over 2,000 empirical studies conducted between 1970 and 2014 to assess the relationship between ESG factors and corporate financial performance. They found that approximately 90% of the studies reviewed reported a non-negative relationship between ESG and CFP (Corporate Financial Performance), with a majority indicating a positive correlation. Yet many of these studies do not account for the nuanced dynamics that may exist in consumer-facing industries like retail. The positive impact of ESG on financial performance suggests that integrating ESG considerations into corporate strategies and investment decisions is generally associated with improved financial outcomes. Positive effects are commonly linked to risk mitigation, stakeholder trust, innovation, and long-term competitiveness. For example, ESG practices are associated with lower capital costs, better operational efficiency, and higher firm valuations (Alshehhi et al., 2018; Gillan et al., 2021).

As a result, firms across European industries, including the retail sector, have increasingly integrated ESG into their strategies and reporting. In the retail sector, consumers demand greater transparency and expect increased ESG efforts from firms, according to Nilssen et al. (2019). A shift toward ethical and sustainable consumerism can be seen where consumers prefer products that align with their core values. The retail industry is especially affected by ESG initiatives due to increasing consumer expectations, reliance on complex supply chains, and vulnerability to regulatory and reputational risk. Previous research suggests that ESG efforts in retail can influence brand loyalty and, consequently, purchasing behavior and long-term profitability (Martínez, 2013). Tripopsakul (2022) found that ESG initiatives have significant positive effects on brand trust and customer engagement. The environmental pillar of ESG had the largest impact on brand trust, followed by the social and governance pillars. This indicates that customers are more likely to engage with and trust brands that actively pursue ESG initiatives, providing a competitive edge in the market.

While extensive previous research regarding the relationship between ESG efforts and corporate financial performance exists, much of the previous literature remains cross-sector or regionally broad. These studies often fail to account for how ESG functions within a specific sector, such as retail, where factors including visibility, consumer behavior, and reputational risks are amplified. Furthermore, relatively few contributions on the subject differentiate between the financial impact of the E, S, and G pillars, and even fewer focus specifically on European retail firms operating under evolving ESG regulations. Despite the global awareness and extensive previous studies on ESG efforts and financial performance, research focusing on the retail sector remains limited. The current research mainly covers a viewpoint from a larger market or region, whereas our study aims to bridge the gap by providing a sector-specific study on European retail firms, offering new insights on how ESG efforts and the respective pillars affect this industry.

1.1 Purpose

Considering the literature gap and the importance for stakeholders to understand to what extent ESG efforts influence the financial performance in the European retail sector, our study investigates the following research question:

Is there a relationship between ESG efforts and a firm's financial performance in the European retail sector?

To assess the relationship between ESG performance and financial outcomes, we conduct a quantitative analysis of publicly traded European retail firms between 2014 and 2023. We analyze independent variables, including ESG scores and separate E, S, and G scores, alongside the dependent financial performance variable ROA as our main test (accounting-based measure) and Tobin's Q (market-based measure). We conduct regression analysis to determine the significance and strength of the relationship between ESG efforts and financial performance. The study expects that the overall ESG score has a positive effect on a firm's financial performance, and presumes that each ESG pillar contributes differently, with the social pillar expected to have the greatest impact.

1.2 Main Findings & Disposition

The main findings of our study indicate that the overall ESG score exhibits a significant negative relationship with financial performance when measured by the short-term profitability measure ROA. However, when disaggregating the ESG components, only the Social pillar is significant, displaying a negative effect on ROA. In contrast, the analysis using Tobin's Q, a market-based measurement, displays a positive and statistically significant effect when looking at the Social pillar across all model specifications. Lastly, the Environmental pillar exhibits a negative impact on Tobin's Q.

The disposition of the thesis is as follows: Section 2 presents the literature review, examining theoretical frameworks and empirical research related to ESG and financial performance, as well as the hypotheses. Section 3 outlines the methodology, including data and sample collection, research models, and variables. Section 4 presents the empirical results and analysis. In Section 5, the study results and implications are discussed. Finally, Section 6 comprises the conclusion and discusses the limitations and potential for future research.

2. Literature Review

This chapter explores the existing literature on the relationship between ESG practices and corporate financial performance. It begins by examining value-creating and value-destroying perspectives, drawing from key theoretical frameworks. The review further considers how contextual factors like industry type, firm size, regulatory environment, and company age influence ESG outcomes. Special attention is given to the retail sector, where ESG integration presents unique challenges and opportunities. The chapter then delves into research on the individual ESG pillars, highlighting the importance of evaluating them separately to gain clearer insights. Lastly, the hypotheses of the study are formulated.

2.1 ESG and Financial Performance

Empirical studies present mixed results regarding the impact of ESG on financial performance (Friede et al., 2015). These mixed results can partly be attributed to two overarching perspectives: the value creation view, which posits that ESG initiatives enhance financial performance by strengthening stakeholder relationships and operational efficiency, and the value destruction view, which suggests that ESG efforts may divert resources from profit-maximizing activities, thereby reducing financial returns (Freeman & McVea, 2001; Galant & Cadez, 2017). Several theoretical frameworks discussing this topic are stakeholder theory, resource-based view, slack resources theory, and trade-off theory. In addition to these theories, a range of contextual and firm-specific factors also influence the relationship between ESG performance and financial outcomes.

2.1.1 Value Creation

The stakeholder theory asserts that businesses create value by addressing the interests of all stakeholders, including customers, employees, investors, and society at large, to achieve long-term success (Freeman & McVea, 2001). Companies that prioritize ESG factors can enhance stakeholder trust, leading to improved brand reputation, customer loyalty, and financial stability (Alshehhi et al., 2018). Freeman and McVea (2001) emphasize that strategic management should not only account for financial outcomes but also actively shape stakeholder relationships to create long-term value. They argue that firms operate within a network of interdependent relationships, where balancing stakeholder interests fosters resilience and competitive advantage. This perspective aligns with ESG principles, as firms

that proactively engage in sustainable and ethical practices are better positioned to navigate market uncertainties, regulatory changes, and evolving consumer expectations, ultimately strengthening financial performance.

Resource-based view theory suggests that firms with unique and valuable resources (such as sustainability initiatives) gain a competitive advantage (Alshehhi et al., 2018). ESG practices can serve as intangible assets, enhancing efficiency, innovation, and resilience against environmental and social risks (Alareeni & Hamdan, 2020). Expanding on stakeholder and resource-based view theories, Wang et al. (2024) argue that ESG value creation can be seen through the perspectives of risk management, information signaling, and strategic advantage. ESG practices not only build stakeholder trust but also reduce the cost of capital and foster innovation, particularly in high-visibility or regulated industries.

The slack resources theory proposes that firms with strong financial performance have excess resources to invest in ESG initiatives, creating a virtuous cycle where sustainability efforts further improve financial outcomes (Alshehhi et al., 2018).

Many studies report a positive correlation between ESG and financial performance, supporting stakeholder theory, slack resource theory, and resource-based view theory. Positive effects are seen through risk mitigation and competitive advantage. ESG-focused firms experience lower operational risks and stronger stakeholder relationships, leading to enhanced market value (Alshehhi et al., 2018). Gillan et al. (2021) affirm that ESG efforts are associated with higher operating performance and firm value, especially when supported by good internal governance, such as diverse boards and performance-linked executive incentives. In addition, there is also a positive link to investor preference for sustainable firms. Companies with strong ESG credentials attract socially responsible investors, increasing stock performance (Alareeni & Hamdan, 2020). Lastly, ESG initiatives such as energy efficiency and waste reduction have the potential to improve cost management, thus improving operational efficiency (Othman & Ameer, 2011).

2.1.2 Value Destruction

In contrast, arguments exist that ESG investments divert resources from profit-maximizing activities, potentially reducing short-term financial performance, leading to value destruction

(Galant & Cadez, 2017). The trade-off theory, as discussed by Campbell and Kelly (1994), suggests that firms must balance competing objectives when making decisions. Applying this to ESG, companies investing heavily in sustainability may face opportunity costs by diverting resources away from core business activities, leading to financial underperformance. Funds directed toward ESG initiatives could be used for improvements that may yield higher financial returns for the company. Milton Friedman's classic argument, "The Social Responsibility of Business Is to Increase Its Profits", posits that corporate leaders should focus on maximizing shareholder value rather than social causes (Friedman, 1970). The argument is that ESG investments are often perceived as expenses borne by shareholders rather than strategic growth drivers. Therefore, companies that prioritize social goals over financial performance may risk alienating more profit-driven investors.

Some researchers argue that ESG efforts may not always yield financial benefits, aligning with the trade-off theory. One reason for this is high implementation costs. Sustainability investments require significant upfront capital, which can reduce short-term profitability (Galant & Cadez, 2017). Gillan et al. (2021) discuss that ESG efforts can be a result of managerial entrenchment or rent-seeking behavior, aligning with the trade-off theory. This nuance supports the notion that in some cases, ESG investment may be inefficient or misaligned with shareholder value. Furthermore, no clear correlation can be seen, as some studies find no significant link between ESG and financial performance, suggesting that industry type and firm size mediate the relationship (Alshehhi et al., 2018).

Companies with strong ESG commitments at times exhibit lower Return on Assets (ROA) due to increased operational costs associated with sustainable practices. ESG compliance can divert earnings from dividends and growth, causing dissatisfaction among investors prioritizing short-term returns (Friedman, 1970). Some studies find a negative correlation between ESG scores and Tobin's Q, suggesting investors may not always view ESG-friendly companies as more valuable (Alareeni & Hamdan, 2020). Gillan et al. (2021) caution that positive ESG-performance associations may reflect reverse causality; firms with strong performance might simply have more resources to spend on ESG. This case would reflect causality in the opposite direction; high valuations and better financial performance lead to higher ESG/CSR performance (Gillan et al., 2021).

2.1.3 Influencing Factors

The relationship between ESG and financial performance depends on several contextual factors. One is industry type, as ESG's impact varies by sector; financial and technology firms see stronger positive effects than resource-intensive industries (Alareeni & Hamdan, 2020). Additionally, firm size also influences, as larger firms with established sustainability programs benefit more from ESG initiatives (Alareeni & Hamdan, 2020). Looking at Choi & Wang (2009), large firms were found less likely to sustain a superior ROA, but more likely to sustain a superior Tobin's Q. Moreover, the regulatory environment has a major influence, as European firms, where ESG reporting is more mature, experience more pronounced financial benefits (Alareeni & Hamdan, 2020). Furthermore, debt levels play an important role when looking at moderators, as firms with high debt ratios are less likely to have superior ROA (Velte, 2017). Lastly, firm age also seems to have a positive effect on the persistence of inferior performance, consistent with the argument that inertia is stronger in older firms (Choi & Wang, 2009).

2.2 ESG in Retail

The integration of ESG practices in the retail sector has become increasingly essential due to rising consumer expectations, investor demands, and regulatory pressures. Buallay (2022) provides empirical evidence demonstrating that sustainability reporting in retail is positively associated with operational (ROA), financial (ROE), and market (Tobin's Q) performance, highlighting that ESG initiatives can enhance efficiency, stakeholder trust, and long-term profitability. Another interesting aspect is that consumers have become more price-sensitive. Cakici and Tekeli (2022) confirm that modern retail consumers, particularly in supermarkets, demonstrate high price sensitivity, which significantly affects their purchase intentions. This reinforces the idea that ESG initiatives, which often involve significant upfront investments (Galant & Cadez, 2017), may face resistance from price-sensitive industries. While ESG enhances trust and differentiation, the impact on financial performance may be limited in the short term due to changing consumer priorities driven by cost considerations. Together, these findings suggest that while ESG initiatives in retail offer financial and operational benefits, strategic implementation and stakeholder alignment are crucial for long-term success.

2.3 Individual ESG Pillars

Literature on the individual ESG scores (Environmental, Social, and Governance) and their differing impacts on corporate financial performance has emerged during later years. Giese et al. (2021) deconstruct the individual E, S, and G components and examine their financial impact separately. They found that Governance has the most immediate impact on financial performance due to its relation to event risks like fraud or mismanagement. These results are supported by Gillan et al. (2021), who found governance factors (e.g., board structure and compensation design) to have the most immediate impact. In addition, Environmental and Social factors have more long-term financial effects, often linked to cumulative risks (e.g., climate impact and social responsibility). Their conclusion is that ESG components have different effects depending on the time horizon and industry (Giese et al., 2021).

Chen et al. (2023) found that while all three ESG pillars positively influence financial performance, the environmental and social pillars tend to have a slightly stronger effect than governance. This supports the notion that the pillars contribute differently to firm performance and underlines the importance of analyzing them separately rather than relying solely on aggregate ESG scores. The Environmental component of ESG is critical for sustainable operations, yet its scoring is often affected by methodological inconsistencies and a lack of standardization across rating agencies (Senadheera et al., 2021). While such issues may broadly apply to all ESG dimensions, the study focuses specifically on the E pillar, highlighting the need to evaluate it separately when examining ESG's influence on financial performance. These differences may impact its financial interpretation, making it necessary to analyze the environmental pillar separately from the social and governance components when examining ESG's influence on financial performance.

Furthermore, Lee et al. (2023) look at the variability of ESG scores across different rating agencies and how differences in weightings (E, S, G) affect firm performance. The key insight from that article is that there is no clear consensus on whether ESG scores strongly correlate with firm performance. However, some firms manipulate S and G scores more easily than E scores, leading to greenwashing concerns. Balanced ESG scores (equal weight for E, S, G) correlate better with firm performance than traditional rating agency scores (Lee et al., 2023). This study highlights methodological inconsistencies in ESG ratings and suggests that treating E, S, and G separately may lead to better financial insights.

2.4 Hypotheses

Based on the previous literature discussed, the value-creation aspect of ESG appears to be dominant over the negative effects on financial performance. This is built on the stakeholder theory, which assumes superior financial performance for companies that are successful in integrating and excelling in ESG efforts. In order to test that assumption, the following hypothesis is formulated.

H₁ The overall ESG score has a positive effect on financial performance.

Additionally, dissecting the ESG score into its pillars allows for a more nuanced understanding of which aspects of sustainability have the strongest impact on financial performance. Lee et al. (2023) argue that methodological inconsistencies in ESG ratings call for analyzing the Environmental (E), Social (S), and Governance (G) pillars separately to generate clearer financial insights. While governance is frequently emphasized in institutional investment contexts, Benuzzi et al. (2024) show that retail investors consistently rank Governance lowest in terms of both sustainability and financial relevance. This could potentially result in a weaker direct influence on firm performance in the retail sector. Similarly, in the retail context, Dal Mas et al. (2021) highlight that internal stakeholders perceive and value different CSR dimensions unequally. Social initiatives, such as employee engagement and community involvement, were the most visible and linked to customer goodwill and employee motivation. This increased visibility is likely to translate into stronger effects on brand trust and customer loyalty, thereby influencing financial performance. Meanwhile, Environmental actions were acknowledged and crucial for long-term sustainability, but often involve significant upfront costs and yield less direct financial returns in the short term.

To better understand how corporate sustainability efforts shape financial outcomes, our study examines the relationship between the three ESG pillars: E, S, and G, and firm financial performance. Given the distinct strategic roles and stakeholder visibility associated with each pillar, the study expects financial effects to differ in both magnitude and nature for each pillar. Based on prior evidence highlighting the salience of social initiatives in retail, the study anticipates that the Social pillar will exert the greatest overall impact, though no directional predictions of the coefficients (positive or negative) for any individual pillar are formulated.

H₂ There is a difference between the individual effects of E, S, and G on financial performance, with the Social pillar expected to have the greatest impact.

3. Methodology

This study utilizes a quantitative research design, which is suitable given the objective to examine the relationship between ESG scores and corporate financial performance. By using quantitative research, statistical patterns and correlations between variables across time and companies can be seen while ensuring objective and replicable analysis. The thesis aims to test specific hypotheses concerning the relationship of ESG and its pillars (Environmental, Social, and Governance) on firm performance metrics, thus, a quantitative research approach is preferred over qualitative methods. Quantitative methods allow for a greater evaluation of relationships and results across a broader dataset of firms and time periods.

The methodology section begins with the data sample and the data selection process, followed by an explanation of how data cleaning and diagnostic tests were conducted to ensure the robustness of the panel dataset. Subsequently, the research models are presented, consisting of linear regressions designed to examine both accounting-based (ROA) and market-based (Tobin's Q) measures of financial performance, with ESG scores and their individual pillars serving as the primary independent variables. Finally, it defines the dependent, independent, and control variables and justifies their inclusion based on prior literature, emphasizing the theoretical rationale behind the use of ROA and Tobin's Q.

3.1 Data and Sample Selection

This study examines publicly traded European companies within the retail industry. The ESG and the financial data are obtained from the Refinitiv Eikon database, covering ten years from 2014 to 2023. The companies selected in this research are based on the established definition of retail as the activities for selling goods and services directly to ultimate buyers for their personal, non-business use (Kotler et al., 2017). Based on the available data and classification of categories in Eikon Refinitiv, the following industries are included in our definition of retail: (1) Broadline Retail, (2) Specialty Retail, (3) Hotels, Restaurants & Leisure, (4) Consumer Staples Distribution & Retail, (5) Diversified Consumer Services, (6) Passenger Airlines.

The raw data includes 510 publicly listed retail companies in Europe. However, 325 firms had no ESG data available, reducing our sample to 185 companies. The initial time frame

covers 10 years (2014-2023), resulting in a maximum of 1,850 potential observations. The dataset is imported into Excel and R for manipulation. To ensure accuracy and consistency in the regression analysis, observations with missing values in key variables (ROA, ESG, E, S, G) are removed. For the remaining control variables, missing values were imputed using the mean to preserve sample size. Although the most robust approach would be to drop all observations with missing values, this was not viable for this study due to the limited sample size and the risk of substantially reducing the sample. This results in a final dataset of 850 firm-year observations. This structure constitutes an unbalanced panel dataset, as not all firms are observed every year. The unbalanced panel data reflects real-world data limitations, such as late entry into ESG reporting, new firms, or missing disclosures.

	Observations	No. firms
Firm observations from Eikon Refinitiv	1850	185
Removal of observations with missing data	- 1028	- 0
Final sample	822	185

Table 1: Sampling Process

Outliers were identified through visual inspection and residual analysis. To reduce the impact of extreme values, all continuous variables have been adjusted through winsorization at the 1st and 99th percentiles. The Variance Inflation Factor (VIF) is used to detect multicollinearity. High correlation between independent variables can distort estimates, so results are interpreted cautiously when necessary. Heteroskedasticity is examined using the Breusch-Pagan test, and robust standard errors are applied to the regressions to correct for non-constant variance. Finally, autocorrelation is assessed through the Breusch-Godfrey test.

3.2 Research Model Design

In order to analyze the extent of the impact of ESG on a company's financial performance, a panel data analysis is performed. A linear regression model is used to analyse each dependent variable (ROA, Tobin's Q) against the independent variable, ESG, as well as the individual pillars, E, S, and G. The model includes the control variables Growth, Size, Leverage, Age,

and Lagged ROA. As a result, the study covers four different linear regression models. The general model (FP) is specified as follows:

$$FP = \alpha + \beta_1 ESG + \beta_2 Size + \beta_3 Growth + \beta_4 Lev + \beta_5 Age + \beta_6 ROA_{t-1} + \gamma_1 + \gamma_2 + \varepsilon$$

$$FP = \alpha + \beta_1 E + \beta_2 S + \beta_3 G + \beta_4 Size + \beta_5 Growth + \beta_6 Lev + \beta_7 Age + \beta_8 ROA_{t-1} + \gamma_1 + \gamma_2 + \varepsilon$$

In the model, α is the constant term, indicating the expected value of the dependent variable when all independent variables are zero. $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7,$ and β_8 are the estimated regression coefficients, reflecting the magnitude and direction of each independent variable's impact on the dependent variable while keeping all other variables constant. ε represents the error term, capturing unobserved factors or random variations that influence the dependent variable but are not accounted for by the independent variables. γ_1 represents the year effects and γ_2 firm fixed effects, which account for unobserved heterogeneity that varies over time but is constant across all firms in a given year. Year fixed effects help to isolate the impact of the independent variables by removing the influence of common time-related shocks that could bias the results.

3.3 Variables

Financial performance is measured using ROA and Tobin's Q to capture both the accounting-based resource efficiency and market-based valuation. The main independent variables are the overall ESG score and its Environmental, Social, and Governance components. Control variables include firm size, growth, leverage, age, and lagged ROA to account for firm-specific attributes.

3.3.1 Dependent Variables

Previous literature has assessed financial performance using a variety of indicators, including accounting-based, market-based, and operational-based measures (Chen et al., 2023). For this thesis, only accounting-based and market-based measures are used, as operational-based measures tend to be firm-specific, less standardized, and not consistently available across large datasets.

Accounting-based measures capture KPIs such as Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI), which reflect a firm's internal efficiency in utilizing its resources to generate profits (Alshehhi et al., 2018). These metrics are derived from financial statements and provide information on operational and managerial efficiency. Among these, ROA is selected for this study as the primary indicator of financial performance. ROA provides a comprehensive indicator of how effectively a company converts its total assets into net profit, offering a broad assessment of how efficiently a firm employs all its resources, including both equity and debt, to produce earnings. ROA evaluates profitability independently of how the firm is financed, unlike ROE, which can be heavily influenced by debt levels. Due to variation in financing models across retail firms, even within a single sector, ROA is considered a more standardized basis for comparison.

ROA is particularly relevant in the ESG context as it captures both the potential costs and benefits of sustainability initiatives. It is also widely used in ESG-related financial performance research due to its ability to reflect these dynamics (Shobhwani & Lodha, 2024). ESG investments may lead to short-term higher operating costs due to expenditures related to compliance, employee programs, and environmental efforts. Long-term, these initiatives may improve profitability through reputational gains, improved stakeholder relationships, and stronger brand recognition.

Typical market-based measures are Tobin's Q (market valuation relative to asset replacement costs), Earnings Per Share (EPS), and Stock Price Performance (Alareeni & Hamdan, 2020). Unlike accounting-based indicators, these measures include both financial fundamentals and investor perception, reflecting market expectations about a firm's future performance and long-term value creation. In the context of ESG, market-based measures capture how sustainable efforts are perceived by investors. ESG activities that are transparent, credible, and aligned with long-term value creation may increase investor confidence and subsequently firm valuation. Conversely, ESG actions misaligned with the core corporate strategy or superficial could raise concerns about greenwashing and inefficiency, leading to potential negative market reactions. These perceptions could influence a firm's valuation independently of a firm's profitability outcomes. Fatemi et al. (2018) highlight that ESG disclosures help reduce information asymmetry and build investor trust by communicating a firm's commitment to sustainability. Since Tobin's Q reflects how the market values both tangible assets and intangible factors, it is a useful measurement for capturing the market's

view on ESG efforts. It also offers a forward-looking complement to accounting-based measures, making it relevant when assessing the effect of ESG activities on market-based valuation.

As highlighted, previous research has shown mixed findings regarding the relationship between ESG performance and a company's financial performance, both in accounting and market-based measures. By including both variables, this study aims to analyze the characteristics of this complex relationship and provide a more comprehensive understanding of ESG's impact on financial performance.

3.3.2 Independent Variables

The independent variables are the ESG score and the three individual pillars of ESG: Environmental (E), Social (S), and Governance (G). These individual pillars are built on underlying subcategories that form the evaluation of ESG performance. The aforementioned subcategories for the Environmental pillar are Resource use, Emissions, and Innovation. The Social pillar includes Workforce, Human rights, Community, and Product responsibility. The Governance pillar consists of Management, Shareholders, and CSR strategy (Refinitiv, 2022). The subcategory scores are consolidated into the three main pillar scores, with the Environmental and Social category weights varying by industry, while the Governance category maintains a consistent weight across all sectors. The category weighting is performed by the ESG database provider (Refinitiv, 2022). To ensure comparability, the ESG score and the pillar weights are normalized to percentages ranging from 0 to 100. These scores and weightings are determined by the data provider, Eikon Refinitiv, and reflect their methodology for assessing ESG performance based on publicly reported information. The final ESG score reflects a company's ESG performance, commitment, and effectiveness based on publicly reported data.

Based on the literature review, we expect that each of the three ESG pillars, Environmental, Social, and Governance, will have a distinct influence on financial performance, although no assumption is made of a direction of impact (positive or negative) due to mixed findings in prior research. However, in the context of the retail industry, one can expect the Social pillar to have the strongest overall effect. This is supported by studies highlighting the prominence

of social initiatives in retail, where factors such as employee engagement, ethical sourcing, and community involvement are closely tied to brand trust and customer loyalty (Tripopsakul, 2022; Dal Mas et al., 2021).

The Environmental pillar may influence financial performance through operational efficiencies like reduced energy use and waste management, but also through risk mitigation, such as avoiding fines, reputational damage, or regulatory penalties associated with environmental non-compliance (Othman & Ameer, 2011; Buallay, 2022). Similarly, Governance practices, such as effective board oversight, strong shareholder rights, and transparency, are often associated with reduced agency costs and improved risk management, which can strengthen strategic decision-making and long-term value creation (Giese et al., 2021; Gillan et al., 2021).

Combined, the ESG pillars are expected to contribute differently to financial performance depending on their role in operational efficiency, stakeholder relationships, and risk reduction. In line with the structure of this study, their effects are analyzed individually to better understand which aspects of sustainability carry the greatest financial relevance in the retail sector.

3.3.3 Control Variables

To complete the model and account for other variables affecting financial performance, five control variables are introduced. These are firm size (Size), firm growth (Growth), debt-to-asset ratio (Lev), firm age (Age), and lagged ROA (ROA_{t-1}).

Firm Size can significantly impact financial performance, as larger firms typically benefit from economies of scale, greater access to capital, and a stronger market position. These advantages can enhance profitability and reduce risk, thereby improving financial outcomes. Thus, one can expect firm Size to have a positive coefficient in the regression models. Although Harjoto & Laksmana (2018) emphasize that firm size also influences corporate decisions regarding CSR and ESG activities due to increased resources and public visibility, it is included in this analysis mainly to control for its direct influence on financial performance, as larger firms may exhibit higher profitability regardless of their ESG efforts.

To account for this, the study includes company Size as a control variable, measured by the natural logarithm of total assets.

Firm Growth in this thesis is assessed using the annual sales growth rate, providing insight into future development and capturing variations in growth across companies. Alareeni & Hamdan (2020) used firm growth, measured through asset growth, as a control variable following prior studies, to capture the effects of expansion dynamics on firm performance. Growth was found to be positively significant with ROA and Tobin's Q, meaning that growth enhances firms' operational performance and market value. Additionally, Chen et al. (2023) found that growth, measured through revenue growth, was negatively associated with ROA but positively associated with ROE. Due to this, one can expect Growth to have a positive effect on financial performance. Fuente et al. (2022) also suggest that growth opportunities can influence the valuation effects of ESG activities, indicating the necessity to control for growth when assessing the ESG-financial performance relationship. If growth is not accounted for, any positive relationship between ESG and financial performance could be due to growth differences.

A company's debt-to-asset ratio reflects its financial stability and risk, with higher ratios indicating potential liquidity challenges and insolvency risks. As such, firms with high debt ratios are less likely to have superior ROA (Velte, 2017). Due to this, we expect that Leverage will have a negative coefficient. Firms with substantial debt obligations may experience constrained cash flows, limiting their ability to invest in ESG initiatives (Naeem et al., 2022). To account for this, the study includes the debt-to-asset ratio (Lev) as a control variable, measured by total liabilities relative to total assets.

A firm's age can influence management decisions and financial stability, with older companies typically having more established strategies and resources. According to Coad et al. (2017), firm age affects performance through different mechanisms. They explain that the relationship between age and performance is often non-linear, with young firms performing worse, improving as they mature, and potentially declining again as they become too comfortable. Rossi (2016) argues that older firms benefit from accumulated experience, learning, and resource stability, which can enhance profitability and survival. Young firms are also more likely to fail due to a lack of structure and experience, as described by the liability of newness theory. Thus, one can expect the coefficient to be positive. To account for this

effect, firm Age is used as a control variable, measured by the natural logarithm of years since inception.

A lagged version of Return on Assets (ROA_{t-1}) is included as a control variable to control for persistence in firm performance, but only in the models where Tobin's Q is used as the dependent variable. This approach aligns with prior literature suggesting that past accounting performance can influence current market-based valuation (Gentry & Shen, 2010). As Tobin's Q not only reflects financial outcomes, but also investor expectations and firm reputation, these factors are often influenced by previous financial results. Therefore, including lagged ROA helps isolate the independent effect of ESG and its pillars on firm value by accounting for prior profitability. This suggests expecting a positive coefficient, as firms with strong prior profitability are likely to be valued more favorably by investors, reflecting consistency and lower perceived risk.

By introducing these control variables, the research model aims to incorporate factors that would otherwise affect the relationship between the dependent and the independent variables. All four control variables provide distinct insights into a firm's characteristics and governance structure, enhancing the precision of the regression results.

Variable	Measure	Expected Sign
Return on Assets (ROA)	Net profit / Total Assets	
Tobin's Q (TQ)	Total Market Value of Firm / Total Assets of Firm	
ESG	Score 1-100	+
Environmental Pillar (E)	Score 1-100	+
Social Pillar (S)	Score 1-100	+
Governance Pillar (G)	Score 1-100	+
Firm Size (Size)	Logarithm of Total Assets	+
Firm growth (Growth)	Annual Sales Growth Rate	+
Debt-to-assets ratio (Lev)	Total Debt to Total Assets	-
Firm Age (Age)	Logarithm of Firm Age	+
Lagged ROA (ROA_{t-1})	ROA in the previous year	+

Table 2: Definitions of the variables and their expected signs

4. Findings and Analysis

This section presents the empirical results of our regression analysis examining the relationship between ESG performance and financial performance in European retail firms. It includes descriptive statistics, correlation matrices, and multiple regression models using the accounting-based performance measure, ROA, and the market-based performance measure, Tobin's Q. The analysis highlights key patterns and explores differences across the individual ESG pillars; Environmental, Social, and Governance.

4.1 Descriptive Statistics

The summary of the descriptive statistics for the variables included in the analysis is presented in Table 3. The mean for the dependent variable ROA is 4.8%, with a standard deviation of 0.084, indicating a low variability in profitability among the sample firms. Tobin's Q displays a mean of 1.190 and a standard deviation of 1.281, reflecting a relatively low degree of variability around the mean, indicating that most firms in the sample have market valuations slightly higher than the book value of their assets. The independent variable measuring the overall ESG score has a mean of 59.796 with a median of 62.297, suggesting a modest positive skewness in overall ESG performance. The standard deviation is 17.218, signaling a substantial variation in the ESG score.

Among the ESG subcomponents, the Social pillar has the highest mean (62.603), followed by Governance at 57.300 and the Environmental with the lowest of 57.684. All three dimensions have a considerable dispersion, particularly the Environmental pillar, which has the highest standard deviation (24.254), with scores ranging from 2.557 to 95.676. The control variables display limited variation, with ROA_{t-1} having the lowest (0.066), followed by Growth with a standard deviation of 0.324 and a wide range from -0.681 to 1.625 (measured as annual percentage growth), indicating the presence of both shrinking and growing firms within the sample set. Firm Age, expressed in the logarithmic form, had the highest standard deviation (0.51).

Variable	Mean	Median	SD	Min	Max
ROA	0.048	0.047	0.084	-0.227	0.287
Tobin's Q	1.190	0.696	1.281	0.071	6.799
ESG	59.796	62.297	17.218	17.232	88.265
E	57.684	61.756	24.254	2.557	95.676
S	62.603	65.757	21.446	13.015	96.448
G	57.300	59.646	18.918	14.357	91.438
Size	9.633	9.647	0.606	8.287	10.794
Growth	0.103	0.059	0.324	-0.681	1.625
Lev	0.360	0.341	0.201	0.004	0.941
Age	1.306	1.301	0.402	0.301	2.057
ROA_{t-1}	0.056	0.057	0.066	-0.138	0.281

Table 3: Descriptive statistics

4.2 Correlation Matrix

Table 4 displays Pearson correlation coefficients between the key variables used in the analysis. It is evident that the correlation between ROA and overall ESG score is negative (-0.061) and not statistically significant. Among the ESG pillars, Social and Governance show a negative correlation with ROA, with coefficients of -0.044 and -0.1, respectively, while the Environmental pillar displays a weak positive correlation (0.031). ROA is negatively and significantly correlated with all control variables except Age, indicating that more leveraged, larger, and faster-growing firms tend to have lower profitability, while older firms tend to be profitable to a higher extent.

The ESG dimensions are all strongly correlated, ranging from 0.91 between overall ESG and the Social pillar to 0.62 between ESG and the Governance dimension, both significant, showing a significant relationship. This is expected given that overall ESG is the aggregated score of all pillars. Notably, the E and S pillars also display a high correlation, which may be explained by the tendency of firms engaged in environmental efforts to also invest in socially responsible initiatives. No multicollinearity is detected as all variables display a low Variance Inflation Factor. However, the E and S pillars exhibit higher VIF values, 2.22 and 2.32, respectively (see Appendix A). This is consistent with their correlation and results from similarities in how the environmental and social practices are implemented and reported within firms.

	ROA	ESG	E	S	G	Size	Growth	Lev	Age
ROA	1.00								
ESG	-0.05	1.00							
E	0.05	0.84***	1.00						
S	-0.03	0.91***	0.73***	1.00					
G	-0.1***	0.62***	0.29***	0.3***	1.00				
Size	-0.21***	0.5***	0.42***	0.47***	0.28***	1.00			
Growth	-0.23***	-0.1**	-0.14***	-0.09***	-0.02	-0.05	1.00		
Lev	-0.24***	0	-0.04	-0.02	0.08**	-0.03	0.11***	1.00	
Age	-0.02	0.31***	0.33***	0.34***	0.05	0.35***	-0.1***	-0.08**	1.00

*** p < 0.01 ** p < 0.05 * p < 0.1

Table 4: Correlation matrix ROA model

In Table 5, Tobin's Q displays a positive and significant correlation with ROA lagged (ROA_{t-1}), suggesting that past profitability is a strong predictor of current market valuation. Tobin's Q is negatively correlated with overall ESG (-0.11), as well as the three ESG pillars: Environmental (-0.01), Social (-0.06), and Governance (-0.10). Regarding the control variables, Firm size, Leverage, and Age also display a negative and significant correlation with Tobin's Q, potentially reflecting that investors prefer firms that are smaller, younger, and have less leverage. The ESG components are highly intercorrelated, particularly the Social and Environmental pillars (0.77), as well as the Social and ESG (0.91). No multicollinearity is detected as all variables display a low Variance Inflation Factor (see Appendix B).

	Tobin's Q	ESG	E	S	G	Size	Growth	Lev	Age	ROA_{t-1}
Tobin's Q	1.00									
ESG	-0.11***	1.00								
E	-0.01***	0.86***	1.00							
S	-0.06*	0.91***	0.77***	1.00						
G	-0.1***	0.66***	0.35***	0.36***	1.00					
Size	-0.26***	0.52***	0.52***	0.58***	0.32***	1.00				
Growth	0.05	-0.05	-0.05*	-0.06*	-0.01	-0.01	1.00			
Lev	-0.27***	0.04	0.04	0.06*	0.11	0.06*	0.11***	1.00		
Age	-0.21***	0.31***	0.31***	0.31***	0.05	0.28***	-0.05	-0.02	1.00	
ROA_{t-1}	0.54***	-0.05	-0.06*	-0.06*	-0.12***	-0.22***	-0.21***	-0.22***	-0.12***	1.00

*** p < 0.01 ** p < 0.05 * p < 0.1

Table 5: Correlation matrix Tobin's Q model

4.3 Regression Results

This section presents the results of the panel regression analyses conducted to examine the relationship between ESG scores and financial performance. The analysis is divided into two parts based on the dependent variable: accounting-based performance measured by ROA, and market-based performance measured by Tobin's Q. For each regression model, three model specifications are completed: one with year fixed effects to control for macroeconomic and temporal influences, one with firm fixed effects to account for unobserved heterogeneity at the firm level, and a combined model with both year and firm fixed effects, the latter used as the main model or analysis. The standard errors are robust and adjusted for heteroskedasticity. These models aim to provide a comprehensive understanding of how ESG and its individual pillars (E, S, and G) relate to firm performance under varying assumptions.

4.3.1 Regression Results with Accounting-based Measurement ROA

Firstly, looking at the regression with ROA as the dependent variable with only year fixed effects (Table 6), it scores a positive but insignificant ESG coefficient related to ROA (coefficient = 0.0003, $p > 0.1$). When disaggregating into E, S, and G components, only the Environmental pillar shows a significant positive relationship with ROA (coefficient = 0.001, $p < 0.01$), while the Social and Governance scores are not statistically significant. Among the control variables, Size, Growth, and Leverage exhibit significant negative associations with ROA, which is contrary to some of our expectations and suggests that larger, faster-growing, or more leveraged firms in this sector may face profitability pressure. The last control variable, Age, is not significant.

When looking at ROA and including both firm and year fixed effects, the results change substantially. Here, the ESG score is significantly negatively associated with ROA (coefficient = -0.001, $p < 0.01$). Similarly, the Social pillar remains significantly negative (coefficient = -0.005, $p < 0.05$), while the Environmental and Governance pillars are statistically insignificant. This suggests that, after controlling for unobserved firm heterogeneity, higher ESG performance, particularly in the Social dimension, may be associated with slightly lower accounting profitability. Social investments, such as employee welfare and community engagement, often involve higher costs without immediate financial returns. These long-term initiatives for reputation and stakeholder trust may temporarily reduce accounting-based profitability measures like ROA.

The model fit also improved dramatically (Adjusted R² = 0.751), indicating that the addition of firm fixed effects captures a substantial amount of variance. The explanation could be that the firm fixed effects reflect the persistence of earnings, where a firm's profitability in one year is strongly influenced by its profitability in the previous year. The control variables Size, Growth, and Leverage are significantly and negatively associated with ROA, consistent with the previous regression but partly contrary to our expectations. Firm Age is once again insignificant.

Regression results controlling only for firm fixed effects (Table 6) largely mirror the findings above. The ESG score remains negatively and significantly related to ROA (coefficient = -0.001, p < 0.05), and the Social pillar remains negatively significant. The Environmental and Governance dimensions are once again insignificant. Firm Size, Growth, and Leverage exhibit negative and statistically significant coefficients, and Age is insignificant. The negative coefficients for Size and Growth indicate that larger or expanding firms might be constrained by complexity, rising costs, or ESG-related compliance burdens. The negative relationship between Leverage and ROA is consistent with existing theory, indicating that financial pressure limits operational profitability (Velte, 2017).

	Firm & Year Fixed Effects		Firm Fixed Effects		Year Fixed Effects	
	ESG Components (1)	ESG Score (2)	ESG Components (1)	ESG Score (2)	ESG Components (1)	ESG Score (2)
E	-0.0001 (0.0002)		0.0001 (0.0002)		0.001*** (0.0002)	
S	-0.0005** (0.0002)		-0.001** (0.0002)		-0.0002 (0.0002)	
G	-0.0002 (0.0002)		-0.0001 (0.0001)		-0.0001 (0.0002)	
ESG Score		-0.001*** (0.0002)		-0.001** (0.0002)		0.0003 (0.0002)
Size	-0.081*** (0.014)	-0.080*** (0.014)	-0.076*** (0.013)	-0.072*** (0.013)	-0.038*** (0.005)	-0.038*** (0.005)
Growth	-0.052*** (0.006)	-0.052*** (0.006)	-0.050*** (0.005)	-0.050*** (0.005)	-0.046*** (0.009)	-0.050*** (0.009)
Leverage	-0.121*** (0.016)	-0.122*** (0.016)	-0.141*** (0.015)	-0.143*** (0.015)	-0.064*** (0.014)	-0.067*** (0.014)
Age	-0.011 (0.014)	-0.012 (0.014)	-0.003 (0.014)	-0.002 (0.013)	-0.001 (0.007)	0.003 (0.007)
Constant	0.896*** (0.131)	0.886*** (0.130)	0.825*** (0.123)	0.785*** (0.121)	0.464*** (0.047)	0.452*** (0.047)
Year Fixed Effects	Yes	Yes	No	No	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
Observations	822	822	822	822	822	822
R ²	0.797	0.797	0.785	0.784	0.209	0.194
Adjusted R ²	0.751	0.752	0.739	0.739	0.193	0.180
Residual Std. Error	0.042 (df = 668)	0.042 (df = 670)	0.043 (df = 677)	0.043 (df = 679)	0.075 (df = 805)	0.076 (df = 807)
F Statistic	17.168*** (df = 153; 668)	17.455*** (df = 151; 670)	17.145*** (df = 144; 677)	17.381*** (df = 142; 679)	13.270*** (df = 16; 805)	13.908*** (df = 14; 807)

*p<0.1; **p<0.05; ***p<0.01

Table 6: Regression results with ROA as FP indicator

4.3.2 Regression Results with Market-based Measurement Tobin's Q

To complement the ROA analysis, we regress ESG scores on Tobin's Q as a market-based measure of firm value (Table 7). The regression analysis using Tobin's Q as the dependent variable offers a contrasting perspective compared to the ROA-based models. When only year fixed effects are included, the overall ESG score shows a positive and statistically significant association with Tobin's Q (coefficient = 0.008, $p < 0.01$). Among the individual ESG pillars, only the Social pillar displays a significant positive effect (coefficient = 0.009, $p < 0.01$), while the Environmental and Governance components remain statistically insignificant. This suggests that, in a market valuation context, strong social performance may be rewarded by investors who view it as a signal of long-term value.

When including both year and firm fixed effects, the results change direction. The overall ESG score becomes statistically insignificant (coefficient = -0.002, $p > 0.1$), and the Social pillar remains positive and significant (coefficient = 0.007, $p < 0.05$), while the Environmental pillar turns negative and significant (coefficient = -0.009, $p < 0.01$). This unexpected negative sign for the Environmental pillar may reflect market skepticism about short-term costs or implementation risks of environmental initiatives. The Governance pillar remains insignificant across specifications.

In the third model, with only firm fixed effects, the ESG score again becomes significantly negative (coefficient = -0.007, $p < 0.05$), and the Social pillar continues to show a positive and significant effect (coefficient = 0.006, $p < 0.05$). This consistency across specifications underscores the robustness of the Social pillar's positive relationship with market valuation. The Environmental pillar remains negative and significant (coefficient = -0.012, $p < 0.01$), and the Governance pillar remains statistically insignificant.

Among the control variables, most coefficients align with the earlier findings from the ROA models. Firm Size and Leverage have negative and statistically significant relationships with Tobin's Q across all model types. Growth shows a positive and significant coefficient among all specifications, aligning with previous expectations. Age shows a significantly negative coefficient when separately looking at the firm fixed effects and year fixed effects. However, the significance dissipates when using both Firm and Year fixed effects ($p > 0.1$). This suggests that larger, or more financially leveraged, firms tend to have lower market

valuations, which could reflect investor concerns about risk and financial stability. The negative effect of Size is contrary to our expectations, while the negative effect of Leverage is in line with prior assumptions. Firm Growth exhibits a positive and significant relationship in all models, indicating that growing firms are valued more highly in the market, consistent with investor expectations about future earnings potential and our expectations.

Lagged ROA (ROA_{t-1}) is introduced as a control variable in the Tobin's Q models to capture the effect of past profitability on market value. As expected, Lagged ROA is strongly positive and statistically significant across all model specifications. This supports the notion that investors view past accounting performance as an indicator of future performance or stability.

The explanatory power of the main model is relatively high (Adjusted $R^2 = 0.816$), reinforcing the reliability of the estimates. These results, particularly the contrasting direction of ESG's effects across ROA and Tobin's Q, highlight the complex and multidimensional nature of ESG's impact on firm performance.

	Firm & Year Fixed Effects		Firm Fixed Effects		Year Fixed Effects	
	ESG Components (1)	ESG Score (2)	ESG Components (1)	ESG Score (2)	ESG Components (1)	ESG Score (2)
E	-0.009*** (0.002)		-0.012*** (0.002)		-0.003 (0.002)	
S	0.007** (0.003)		0.006** (0.003)		0.009*** (0.002)	
G	0.001 (0.002)		0.001 (0.002)		0.001 (0.002)	
ESG Score		-0.002 (0.003)		-0.007** (0.003)		0.008*** (0.002)
Size	-1.937*** (0.187)	-1.991*** (0.188)	-1.898*** (0.192)	-1.975*** (0.193)	-0.373*** (0.063)	-0.358*** (0.062)
Growth	0.192*** (0.070)	0.178** (0.071)	0.196*** (0.069)	0.173** (0.069)	0.665*** (0.104)	0.666*** (0.104)
Leverage	-0.982*** (0.217)	-0.909*** (0.218)	-0.967*** (0.206)	-0.872*** (0.207)	-1.029*** (0.181)	-1.009*** (0.181)
Age	-0.230 (0.301)	-0.296 (0.303)	-0.675** (0.278)	-0.856*** (0.279)	-0.435*** (0.099)	-0.417*** (0.097)
ROA (Lagged)	1.749*** (0.542)	1.547*** (0.544)	1.816*** (0.551)	1.623*** (0.556)	9.249*** (0.558)	9.258*** (0.556)
Constant	21.394*** (1.854)	22.100*** (1.859)	21.707*** (1.841)	22.857*** (1.844)	5.182*** (0.571)	5.042*** (0.562)
Year Fixed Effects	Yes	Yes	No	No	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	No	No
Observations	901	901	901	901	901	901
R ²	0.816	0.812	0.798	0.793	0.426	0.421
Adjusted R ²	0.780	0.776	0.762	0.756	0.415	0.411
Residual Std. Error	0.601 (df = 753)	0.606 (df = 755)	0.626 (df = 762)	0.633 (df = 764)	0.979 (df = 883)	0.983 (df = 885)
F Statistic	22.687*** (df = 147; 753)	22.535*** (df = 145; 755)	21.829*** (df = 138; 762)	21.493*** (df = 136; 764)	38.614*** (df = 17; 883)	42.906*** (df = 15; 885)

*p<0.1; **p<0.05; ***p<0.01

Table 7: Regression results with Tobin's Q as FP indicator

5. Discussion

In this chapter, the study analyses our results and relates them to previous studies and theory. By revisiting the research question and hypotheses, the discussion focuses on possible explanations for why the findings only partly support the hypotheses. Lastly, the study connects the findings to practical implications.

5.1 Discussion of Results

Our empirical findings provide a nuanced understanding of the relationship between ESG performance and financial performance within European retail firms, revealing differences between short-term accounting outcomes and long-term market valuations. The results do not support Hypothesis 1, which expected a positive relationship between overall ESG score and financial performance (ROA). Instead, when firm and year fixed effects were included to control for unobserved heterogeneity, the ESG score exhibited a significantly negative association with ROA (see Table 8). This suggests that higher ESG engagement may correlate with reduced short-term accounting profitability. This outcome is consistent with trade-off theory, which implies that diverting resources to ESG initiatives can entail short-run activity costs (Campbell & Kelly, 1994; Galant & Cadez, 2017). It also suggests that we do not find evidence of a short-term virtuous cycle proposed by the slack resources theory, entailing that the benefits of ESG investment might not materialize short term in accounting returns (Alshehhi et al., 2018).

Observing the individual ESG pillars, the findings partly support Hypothesis 2, showing that each pillar has a different impact on financial performance, and that the Social pillar has the greatest impact. The Environmental pillar shows a significant positive relationship with ROA when only fixed year effects are included, implying that environmental initiatives may yield operational efficiencies such as cost savings from energy efficiency or waste reduction (Chen et al., 2023). However, under stricter assumptions, the significant effect disappears when introducing firm fixed effects, suggesting that in retail, environmental efficiency may be linked more to firm-specific capabilities than to industry-wide ESG efforts. Well-managed retail firms may be better at converting environmental practices into operational efficiency, but such effects are not generalizable across the sector. Firms that are more efficient and environmentally conscious could be the drivers of the cross-sectional positive results. As a

result, when using both firm and year effects, the study found no significant environmental impact on accounting profitability.

In contrast, the Social pillar displayed a significant negative relationship with ROA when using both firm and year fixed effects. As only the Social pillar showed a significant relationship with ROA, this supports our previous hypothesis. This robust finding also suggests that high performance in the social dimensions of ESG (e.g, workforce development, diversity initiatives, or community engagement) is linked to lower short-term profitability. One possible explanation is that in the retail context, many social initiatives involve substantial upfront costs and longer payoff horizons (Campbell & Kelly, 1994). These activities often do not yield immediate returns and can restrain short-term margins, particularly in cost-pressured sectors like retail, where passing the cost to the consumers is difficult. The negative short-term impact of the Social pillar is therefore in line with the view that ESG investments may entail initial costs in the short term, consistent with trade-off considerations. The Governance pillar, meanwhile, showed no significant effect on ROA in this analysis. Governance improvements (e.g. management oversight or CSR strategy) are often emphasized in other industries as drivers of performance, but the statistical insignificance in this study may reflect that governance reforms are less visible to consumers and less directly tied to the operational results in retail, leading to lower salience for retail stakeholders (Dal Mas et al., 2021).

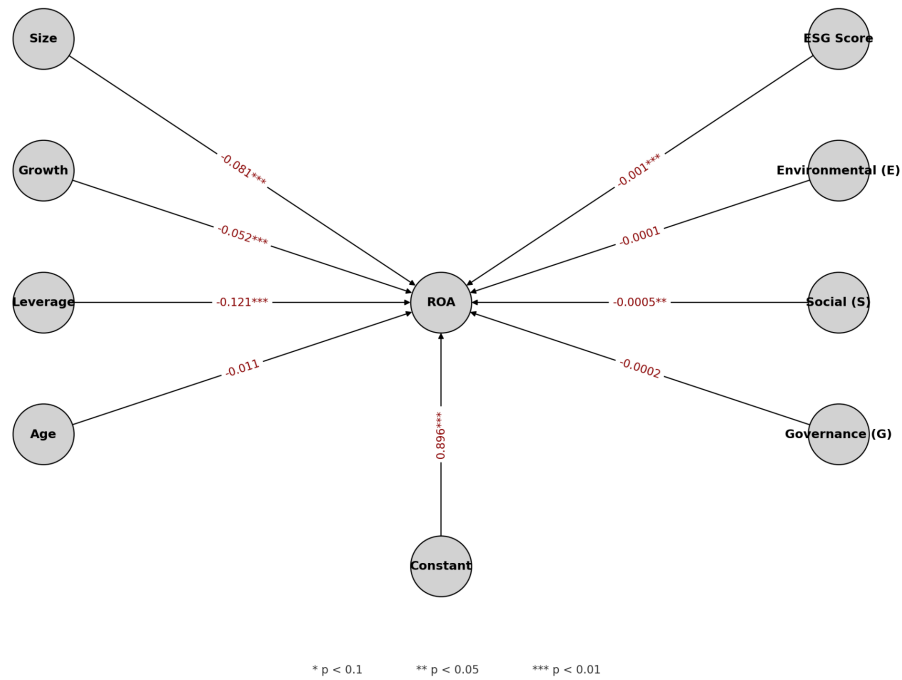


Table 8: Visualization of the main regression results with ROA as FP indicator

Despite the generally negative relationship between ESG and short-term accounting performance, ROA, the findings also reveal a positive perspective when looking at market-based performance. The regression using Tobin’s Q, a forward-looking measure of firm value, shows a positive and statistically significant relationship between ESG score and firm value when only including year fixed effects. However, under stricter assumptions when looking at the main regression model (year and firm fixed effects), the significant relationship no longer exists (see Table 9).

When analyzing the disaggregated ESG components in the main model specification with both firm and year fixed effects, distinct patterns emerge. The Social pillar shows a positive and statistically significant relationship with Tobin’s Q, suggesting that in the retail sector, visible social initiatives build brand trust among customers and investor confidence, reflected in market valuation. This is consistent with previous literature emphasizing the importance of social responsibility for brand equity and stakeholder trust, which can influence firm valuation even if short-term accounting returns are limited (Tripopsakul, 2022; Dal Mas et al., 2021). Although the study expected the Social pillar to have the strongest influence on market-based performance, given its high visibility and relevance in retail contexts, the Environmental pillar emerged as the more influential ESG component in this model. This result contrasts with this study’s theoretical expectations and suggests that, at least from a

valuation standpoint, the market may assign greater weight to environmental risks or long-term sustainability exposure, even if such weight is reflected negatively in the short term. It also suggests that environmental initiatives in the retail sector may be viewed more skeptically by the market, potentially due to high upfront costs or delayed financial returns. Such investments might be perceived as burdensome if they are not clearly linked to revenue-generating outcomes or if their benefits are difficult to quantify in the short term.

Finally, the Governance pillar shows no statistically significant relationship with Tobin's Q in any specification. This may reflect that governance practices, while essential for internal control and risk mitigation, are less visible or salient to external investors compared to environmental and social actions. It could also indicate that governance factors are already priced in or considered standard practice among listed firms, thus contributing little additional signal in the context of market valuation.

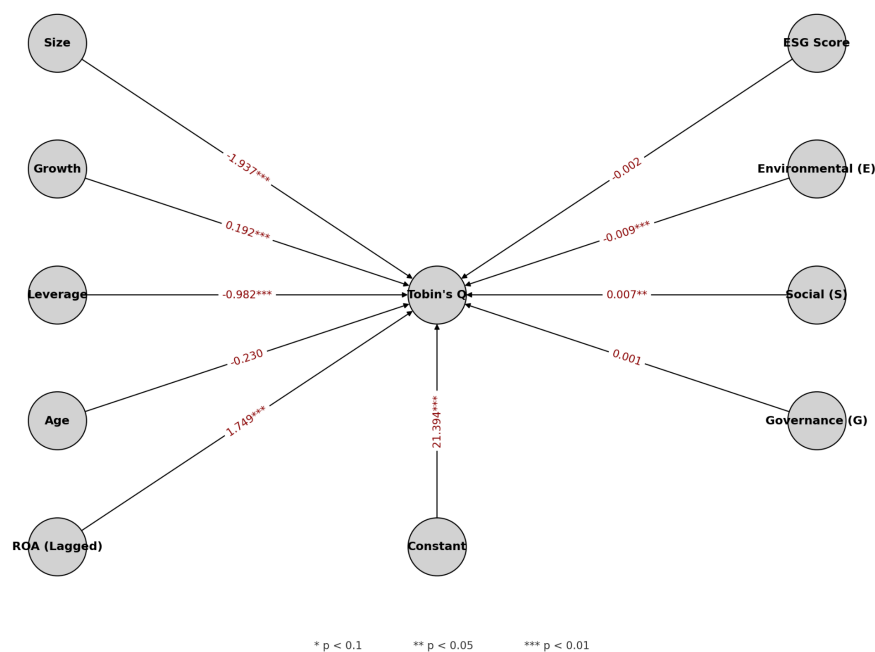


Table 9: Visualization of the main regression results with Tobin's Q as FP indicator

Bringing together these short- and long-term perspectives, the results reflect a duality in how ESG efforts relate to corporate financial performance. In the short term, ESG engagement, particularly in the social domain, may lead to resource trade-offs and increased costs that

reduce accounting profitability, supporting the trade-off theory, which suggests that sustainable efforts may come at the expense of doing well in the immediate term (Galant & Cadez, 2017). However, the findings also point to a more favorable outlook in market-based valuations, where social initiatives are associated with higher firm value. This divergence suggests that while ESG investments may impose short-term operational burdens, they can simultaneously signal long-term strategic value to investors. As such, the relationship between ESG and financial performance is not uniformly positive or negative, but dependent on the type of metric used and the method through which performance is assessed. These results highlight the importance of disaggregating ESG components and applying multiple performance indicators to capture the full impact of sustainability efforts in the retail sector.

5.1.1 Comparison to Previous Literature

The results of our study both support and diverge from previous literature, reflecting the complex and context-dependent nature of the ESG and financial performance relationship. While much of the existing research, such as Friede et al. (2015) and Alshehhi et al. (2018), reports a predominantly positive relationship between ESG performance and firm financial performance, the findings of this study complicate this perspective. Unlike the previous cross-industry studies, our results indicate that for the retail sector, ESG engagement is in some aspects, more financially burdensome in the short term for consumer-facing firms. Consistent with Galant and Cadez (2017), our findings for the accounting-based measure, ROA, support the trade-off theory, which posits that sustainability efforts may involve opportunity costs that reduce short-term profitability. The significant negative association between ESG performance and ROA, particularly through the Social pillar, mirrors findings from prior studies highlighting the cost-intensive nature of social initiatives (e.g., workforce development or community engagement), which often require substantial investments with delayed financial returns (Chen et al., 2023; Dal Mas et al., 2021). However, the specific aspects of retail, including tight margins, high price sensitivity, and strong consumer expectations, likely intensify these trade-offs, distinguishing our findings from previous studies by focusing on one cost-constrained industry, retail.

In contrast, when examining market-based performance through Tobin's Q, we observe more positive outcomes. The Social pillar displays a positive and significant association with firm

valuation, in line with value-creation perspectives anchored in stakeholder theory by Freeman & McVea (2001) and the resource-based view (Alshehhi et al., 2018). This finding supports the argument of Chen et al. (2023) and Giese et al. (2021), who suggest that market participants reward ESG engagement, particularly social initiatives, for their long-term strategic value. It also reinforces more recent stakeholder-centric perspectives from Wang et al. (2024) and Tripopsakul (2022), which emphasize the role of brand trust, stakeholder engagement, and perceived organizational resilience in enhancing firm value. Firms with strong social credentials often enjoy greater customer loyalty, reputational benefits, and investor confidence (Tripopsakul, 2022; Dal Mas et al., 2021). These intangible advantages may not be fully captured in short-term accounting metrics, but are likely to be recognized and priced in by the market, especially in industries like retail, where brand equity is linked to consumers' value.

Interestingly, the Environmental pillar shows a significantly negative relationship with Tobin's Q in the main results. This contrasts with prior findings suggesting environmental practices can enhance operational efficiency and reduce regulatory risks (Othman & Ameer, 2011; Buallay, 2022). One potential explanation lies in the heterogeneity of the retail sector. ESG investments in highly price-sensitive segments, such as grocery retail or low-margin fast fashion, may be viewed by investors as cost burdens rather than value-generating. This context-specific interpretation underlines the importance of sectoral and sub-sectoral dynamics when evaluating ESG's financial impact.

While Governance is commonly emphasized in ESG literature as a crucial driver of performance (Giese et al., 2021; Gillan et al., 2021), our results do not reveal a significant relationship between Governance and either ROA or Tobin's Q. This may suggest that governance mechanisms are more standardized across listed firms, reducing their explanatory power in a sector like retail, where consumer visibility and brand perception weigh more heavily. This idea is supported by Dal Mas et al. (2021), who found that governance practices are generally less visible and less valued by internal retail stakeholders compared to social and environmental dimensions. It also aligns with Benuzzi et al. (2024), who reported that retail investors ranked Governance as the least influential ESG pillar in both sustainability and financial contexts.

Furthermore, this study analyses the individual ESG components, which aligns with Giese et al. (2021) and Lee et al. (2023), who argue that evaluating ESG in aggregate can obscure important differences between the pillars, especially as their financial effects often differ in magnitude, direction, and time horizon. This study's retail-specific results validate this view, revealing that the impact of ESG varies not only by performance measure but also by pillar.

Finally, it is important to reflect on the basis of the study sample. The retail industry, as defined by Kotler and Armstrong (2020) and the Refinitiv Eikon (2022) classification, includes a broad set of sub-industries ranging from grocery and specialty retail to hospitality and passenger airlines. These sectors differ substantially in business models, capital intensity, regulatory exposure, and customer behavior. While the inclusion of firm-fixed effects controls for time-invariant differences between firms, thus mitigating potential bias from structural heterogeneity, the diversity within the retail category may still influence ESG-financial performance dynamics. For instance, ESG efforts in low-margin segments may strain profitability more acutely than in higher-margin, brand-driven businesses. This further underscores the value of examining ESG at the industry level, where previous research lacked, and our findings shed light on the underlying differences that become visible in a sector-specific analysis. Future research could explore these sectoral differences in greater depth.

To summarize, our findings contribute to a growing body of literature that highlights the context-dependent nature of ESG's financial impact. The results reinforce the importance of the time horizon (short versus long term), disaggregation of ESG dimensions, and sub-sector-specific analysis, particularly in heterogeneous industries like retail. By focusing exclusively on the retail sector, this study contributes to ESG research by demonstrating how consumer-facing, cost-sensitive environments affect the relationship between ESG efforts and financial performance, previously lacking within this topic.

5.2 Practical Implications

The findings of this study have several practical implications for corporate decision-makers, investors, and policymakers operating within the European retail sector. First, the mixed relationship between ESG performance and financial outcomes highlights the importance of a

differentiated approach to ESG strategy. Firms should avoid assuming that all ESG efforts will translate equally into financial benefits. While social initiatives appear to enhance long-term firm value, as reflected in the positive association with Tobin's Q, these same efforts may reduce short-term profitability due to high upfront costs and delayed returns. Managers should thus be cautious about overcommitting ESG resources without a clear strategic framework, especially if internal performance targets are focused on short-term efficiency. This perspective reflects the logic of trade-off theory, where resource constraints require prioritization. Retail companies must therefore weigh the strategic intent and time horizon of ESG investments when allocating resources, especially in low-margin segments where cost sensitivity is high.

Based on these results, retail managers should adopt a more strategic and transparent approach to ESG implementation and communication. As social initiatives appear to be positively received by the market, retail companies should prioritize credible, stakeholder-oriented programs, such as employee well-being and community engagement, and ensure these efforts are clearly communicated to investors and the public. Transparency is especially important in differentiating genuine ESG performance from superficial claims, thereby reducing the risk of greenwashing concerns. Managers should view ESG not only as a compliance task but as a value communication tool that can enhance brand trust, attract ESG-conscious investors, and strengthen resilience in a competitive and sustainability-driven retail environment.

The absence of a significant relationship between Governance and financial performance in our analysis suggests that governance improvements may not yield strong visibility or valuation effects in the retail context. As prior research indicates, Governance may be perceived as a standardized baseline expectation, particularly in publicly listed firms, and may not offer the reputational or strategic differentiation that social or environmental initiatives can provide. Retail firms aiming to strengthen investor perception may therefore benefit more from transparent and credible communication of their social and environmental efforts.

However, this study's results must be interpreted in light of several contextual factors. ESG scores, such as those used in this study from Refinitiv Eikon, are fundamentally based on publicly disclosed information. As such, the quality and depth of ESG reporting can significantly influence a firm's score, which may not fully reflect the substance of its

practices. Differences in ESG communication, ranging from comprehensive sustainability strategies to minimal compliance-driven reporting, can lead to variation in scores that do not necessarily mirror true ESG performance. This opens the door for greenwashing concerns, where firms present an inflated image of sustainability without meaningful action, potentially distorting the relationship between ESG scores and financial outcomes.

National differences across Europe may also play a role in shaping ESG perceptions and financial impacts. Differences in regulatory environments, stakeholder expectations, and consumer awareness across countries may influence how ESG efforts are received by both the market and internal stakeholders. For example, countries with more stringent ESG disclosure requirements or stronger sustainability cultures may reward ESG investments differently compared to those with less emphasis on non-financial reporting. Although the study's use of firm-fixed effects controls for time-invariant firm-specific factors, including national context, it does not capture more dynamic institutional shifts, such as evolving regulations or cultural trends. Due to data limitations, this study does not explicitly analyse cross-country variation and instead focuses on firm-level differences across the broader European market.

Finally, our findings underscore the importance of disaggregating ESG into its individual pillars. Aggregated ESG scores can mask diverging financial implications across the environmental, social, and governance dimensions. Practitioners and investors should therefore look beyond composite ratings and evaluate ESG strategies in more granular terms to better understand their specific risks, costs, and value-creation potential.

6. Conclusion

In this chapter, we summarize the findings and propose the most relevant explanations for why our hypotheses were partly supported. The main limitations of the study are then discussed, primarily related to data availability. Finally, potential directions for future research are highlighted.

6.1 Summary

This study investigated the relationship between ESG performance, both aggregated ESG scores and the individual E, S, and G pillars, and financial outcomes in the European retail sector by analyzing both accounting-based (ROA) and market-based (Tobin's Q) performance measures. The findings reveal a complex and nuanced relationship, varying not only by ESG component but also by the choice of financial metric.

When accounting for firm and year fixed effects, the overall ESG score showed a significantly negative association with ROA, not supporting our first hypothesis. This suggests that ESG activities may reduce short-term profitability, potentially due to the upfront costs associated with implementing sustainability programs. The finding aligns with the trade-off theory, which argues that resources invested in ESG may crowd out more immediate profit-maximizing activities. However, when ESG was disaggregated, the Social pillar had a particularly strong and consistently negative effect on ROA, implying that social investments, while potentially beneficial long term, can be costly in the short term for retail firms. This partly supports our second hypothesis, as the Social pillar showed the strongest influence, while the Environmental and Governance pillars showed no significant relationship with ROA in the main mode. This contradicts our hypothesis, as each pillar was expected to have a significant, yet different, impact.

In contrast, the market-based performance analysis using Tobin's Q revealed more favorable interpretations. The Social pillar was positively associated with firm value, supporting stakeholder theory and indicating that social efforts, such as ethical sourcing, employee well-being, and community engagement, are valued by investors despite their short-term cost. Interestingly, our hypothesis expected the Social pillar to have the strongest overall impact across both models, but in Tobin's Q regression, the Environmental pillar emerged with a

stronger (although negative) and significant effect. This suggests that the market may assign considerable weight to environmental risks and long-term liabilities, possibly viewing environmental investments as costly or uncertain in return. The Governance pillar was not significantly related to either financial measure, which may reflect its lower visibility to both internal and external stakeholders in retail or its standardization among publicly listed firms.

These findings underscore the importance of evaluating ESG pillars individually, as their impacts on firm performance differ in both nature and magnitude. Moreover, the results emphasize the need for caution in interpreting ESG scores as the ratings are based on self-reported and third-party data that vary in methodology and transparency. The heterogeneous nature of ESG reporting frameworks across European countries and sub-industries within retail may further contribute to the mixed results.

In summary, while ESG efforts hold potential for long-term value creation, their short-term financial impact, particularly in accounting returns, is not uniformly positive. This reflects a broader duality in ESG-financial relationships: trade-offs in the short run and potential rewards in the long run, depending on how different sustainability dimensions are perceived and operationalized within the retail industry.

6.2 Limitations

While this study provides valuable insights into the ESG-financial performance relationship within the European retail sector, several limitations should be acknowledged. First off, our dataset is limited to firms with available ESG scores from Refinitiv Eikon. As a result, a large portion of European retail firms are excluded, potentially introducing selection bias. Secondly, the ESG scores are aggregated from subcategories using proprietary and sometimes inconsistent methodologies. This may obscure underlying nuances or introduce measurement bias, especially across firms or countries with varying disclosure practices. These methodological inconsistencies arise because ESG rating agencies score and weight the E, S, and G pillars in different ways, which can lead to different results when looking at how ESG affects financial performance. Thirdly, the time frame (2014-2023) may not be sufficient to capture the long-term financial effects of ESG, particularly in the social and environmental domains, which often yield delayed benefits. The study's focus on the retail sector improves

relevance but limits generalizability. Results may not hold in other sectors with different operational structures or stakeholder expectations. Additionally, although controlled for size, growth, leverage, age, and lagged ROA, unobservable factors such as corporate culture, consumer perception, or management quality may still influence financial outcomes.

Although the inclusion of firm and year fixed effects helps control for unobserved heterogeneity and time-specific shocks, our model cannot fully account for dynamic regulatory changes, cross-country differences, or industry-specific pressures that may influence both ESG strategy and financial outcomes. The retail classification, as defined by Refinitiv Eikon, encompasses a heterogeneous set of sub-industries, from grocery chains and fashion retailers to airlines and hospitality, which may exhibit different ESG priorities and financial sensitivities.

This study is also limited to two financial performance metrics, ROA and Tobin's Q, which, while common in the literature, may not capture all dimensions of financial impact. Operational measures, cost efficiency, or risk-adjusted returns could offer complementary perspectives. Additionally, due to the use of winsorization and imputation methods, some data variation may be smoothed out, potentially underestimating extreme effects or firm-specific responses to ESG activities.

6.3 Future Research

Building on these findings, future research could take several promising directions. First, qualitative studies or mixed-methods approaches could complement the current analysis by capturing stakeholder perceptions of ESG value, especially in understanding why certain ESG dimensions may resonate more with investors or employees in retail. Interviews or case studies could offer insights into how ESG strategies are internally motivated, communicated, and perceived beyond what ratings can capture.

Second, future studies could focus on sub-sector analyses within retail to explore whether ESG-performance dynamics differ between, for example, fast fashion, e-commerce, grocery, or hospitality. Such granularity would allow for a clearer understanding of industry-specific factors and reduce limitations associated with broad sector classifications.

Third, with the emergence of mandatory ESG reporting regulations, such as the EU's Corporate Sustainability Reporting Directive (CSRD), future research could examine whether increased standardization and transparency lead to stronger and more consistent relationships between ESG and financial performance. Comparing pre- and post-CSRD data could reveal the effect of improved data credibility on ESG evaluation.

Fourth, extending the scope to include additional performance metrics, such as cost of capital, stock price volatility, or ESG-linked credit risk, would offer a more comprehensive understanding of ESG's financial consequences. It would also be valuable to investigate non-linear effects or threshold dynamics, where ESG might only influence financial performance beyond a certain investment level or under specific strategic conditions.

Another important avenue for future research is to explore the relationship between consumer perception of corporate sustainability and financial performance. The purchasing behavior in the retail industry is closely tied to brand image, customer loyalty, and public sentiment. As a result, how consumers interpret and respond to ESG efforts may be just as important, if not more, than third-party ESG scores. Future studies could investigate whether firms perceived as sustainable by customers enjoy stronger financial returns, independent of their formal ESG ratings. This would provide insights into whether ESG engagement translates into consumer trust and market advantage, or whether discrepancies exist between externally rated ESG performance and public perception. Comparing the results between consumer perception and actual ESG performance could shed light on communication issues and strategic marketing possibilities.

Finally, a comparative approach across regions within Europe, such as comparing the Nordic countries to other European regions, could shed light on how institutional contexts, cultural norms, and regulatory policies shape the effectiveness and market perception of ESG initiatives.

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8. Appendix

Appendix A: VIF ROA

Variance Inflation Factor (VIF) table for ROA. All values are below the threshold of 5, indicating no multicollinearity.

Variable	VIF ROA
E	2.22
S	2.32
G	1.16
ESG	1.38
Size	1.41
Growth	1.03
Leverage	1.03
Age	1.23

Appendix B: VIF Tobin's Q

Variance Inflation Factor (VIF) table for Tobin's Q. All values are below the threshold of 5, indicating no multicollinearity.

Variable	VIF Tobin's Q
E	2.55
S	2.78
G	1.22
ESG	1.59
Size	1.41
Growth	1.03
Leverage	1.03
Age	1.23

Appendix C: AI Transparency

This thesis was developed with the assistance of OpenAI's ChatGPT to ensure a better final report. The AI was used to support tasks such as refining language, clarifying concepts, and organizing ideas. These tools have been used to enhance the clarity and coherence of our work, but all academic arguments, critical analysis, and conclusions are our own. ChatGPT was also used to assist in handling R code for the data management process by suggesting functions and debugging errors, while all final code and output were validated independently.

The AI's role has been strictly supplementary, and we acknowledge the importance of using AI ethically and responsibly to maintain academic integrity and transparency. One key concern we found was that ChatGPT could generate false or untrustworthy sources. To mitigate these risks, all sources are double-checked, verified, and found using alternative methods. Our use of AI has been supplementary and transparent, and we have ensured that all sources and references included in the thesis are properly verified and cited.

We have gained valuable insight into both the potential and limitations of AI in academic writing. It can be an effective tool to improve structuring and the efficiency in writing and coding, however, it cannot replace critical thinking, analytical reasoning, and expertise on the subject required in academic research.