Relationship Between Corporate Social Responsibility and Financial Performance: Evidence from French Companies

Master Degree in Corporate Finance

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Originality and Copyright

This dissertation is original, made only for this purpose, and all authors whose studies and publications were used to complete it are duly acknowledged.

Abstract

This dissertation aims to analyse the relationship between corporate social responsibility (CSR) and financial performance in the French stock market over a five-year period, from 2019 to 2023, using companies listed on the CAC-40 index. The main objective of this study is to answer the question of whether CSR influences companies' financial performance, thus providing valuable insights not only for private companies, but also for investors and other stakeholders.

The model used is a fixed effects model, excluding sector dummy variables. The results show that CSR is not statistically significant for the financial performance of French companies in the CAC-40 index.

The variables used as proxies for financial performance were return on assets (ROA) and return on equity (ROE). The ESG rating was used to assess CSR. Finally, company size and age were included as control variables.

Keywords: Corporate Social Responsibility; Financial Performance; ESG Rating.

Resumo

Esta dissertação tem como objetivo analisar a relação entre a Responsabilidade Social Empresarial (CSR) e o desempenho financeiro no mercado de ações francês ao longo de um período de cinco anos, de 2019 a 2023, utilizando as empresas pertencentes ao índice CAC-40. O principal propósito deste estudo é responder à questão de saber se a CSR influencia o desempenho financeiro das empresas, proporcionando assim informações valiosas não só para as empresas privadas, mas também para investidores e demais *stakeholders*.

O modelo utilizado foi o Modelo de Efeitos Fixos, excluindo as variáveis dummies do setor. Os resultados obtidos indicam que a CSR não apresenta significância estatística sobre o desempenho financeiro das empresas francesas do índice CAC-40.

As variáveis utilizadas como *proxies* para medir o desempenho financeiro foram a rendibilidade dos ativos (ROA) e a rendibilidade do capital próprio (ROE). Para avaliar a CSR, recorreu-se ao ESG Rating. Por fim, como variáveis de controlo, foram utilizadas a dimensão e a idade da empresa.

Palavras-chave: Responsabilidade Social Empresarial; Desempenho Financeiro; ESG Rating.

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List of Abbreviations and Acronyms

ESTG	School of Technology and Management
CSR	Corporate Social Responsibility
ROA	Return on Assets
ROE	Return on Equity
OLS	Ordinary Least Square

1. Introduction

In today's world, the importance of sustainability and social responsibility has increased significantly, not only because of growing environmental concerns, but also because of changing consumer expectations. This has led companies to pay more attention and start to adopt sustainable practices and contribute to social well-being in order to meet these consumer expectations and thus enhance their reputation, which has led to the need to investigate the influence of these measures on the financial performance of companies.

There are numerous studies that have examined the relationship between corporate social responsibility and financial performance in several and different countries, with different results (Chowdhury & Nehal, 2020; Espino & Mutuc, 2024; Hamdy et al., 2024; Homayoun et al., 2023; Ibrahim et al., 2023; Okafor et al., 2021; Pekovic & Vogt, 2021; Rocha, 2022). As far as studies in the French context are concerned, they are very limited.

To address this gap in the literature within the French context, this thesis will provide insights into the aforementioned relationship, in a setting where companies are increasingly focused on sustainability, while also being strongly influenced by European Union policies in their decision-making.

The primary objective of this thesis is to investigate whether the implementation of corporate social responsibility (CSR) measures affects a company’s financial performance. To achieve this, several key questions need to be explored: What is the impact of CSR measures on corporate financial performance in France? How is this relationship influenced by the control variables?

To answer these questions, a panel data analysis will be conducted to cover as many years as possible, thereby enabling an understanding of the evolution, trends, and long-term effects of this relationship. The data used in this study will be secondary data, specifically from CAC-40 companies, which provide access to both current and historical information, allowing for an analysis of how CSR practices have influenced financial performance over time. This study will cover a five-year period, from 2019 to 2023, enabling a comprehensive examination of the relationship between CSR practices and financial performance over time.

This thesis is structured into three core chapters. The first chapter is dedicated to the literature review, initially exploring the evolution of corporate social responsibility (CSR) over the years and how stakeholders have increasingly influenced companies' decision-making processes. After providing a broad overview, the focus shifts to existing literature on CSR in France, highlighting a gap in studies examining the relationship between social responsibility and the financial performance of French companies, which underscores the relevance of this research. Lastly, the chapter reviews the existing empirical evidence on CSR.

The second chapter outlines the methodology employed in this study, detailing the variables used, their sources, the characterisation of the sample, and the hypotheses that will be tested.

The third chapter presents the study’s findings, including the analysis and discussion of the results obtained.

2. Literature Review

2.1. The Evolution of Corporate Social Responsibility

Corporate social responsibility was not always a primary focus for businesses. During the industrialization era, companies prioritized profit maximization above all else (Ferreira, 2010). Abreu & Badii (2006) notes that discussions on social responsibility began as early as 1899, though they differed significantly from today's perspective, primarily emphasizing workers' conditions rather than environmental concerns.

By 2001, the European Communities Commission (ECC) played a key role in advancing this concept, asserting that companies integrating social and environmental practices would gain a competitive advantage.

At that time, numerous studies and articles explored the meaning of social responsibility. AECA (2003) argued that social responsibility should encompass social, environmental, and economic concerns, with the primary objective being the sustainable development of companies.

Hill et al. (2007) maintained that social responsibility includes all economic, legal, moral, and philanthropic actions that enhance stakeholders' quality of life. Moreover, Dahlsrud (2008) defined social responsibility across five key dimensions: environmental, social, economic, stakeholder, and volunteering.

More recently, there have been many different definitions, because the number of studies in this area has been increasing significantly. Chwiłkowska-Kubala et al. (2021) have also divided the social responsibility in 5 dimensions: economic, social, environmental, philosophical and political.

The economic dimension critiques capitalism and the way profit has been generated over the years. The authors suggest a shift in how companies perceive profit, emphasising greater efficiency and optimising market operations to reduce waste.

The social dimension focuses on the well-being of the community and employees, highlighting that it should be a key priority in decision-making.

The environmental dimension is closely linked to the economic aspect, stating that the more sustainably profit is generated, the lower its environmental impact.

In the philosophical dimension, the authors highlight the growing overdependence on technology and its influence on the perception of human and social values.

Lastly, the political dimension includes the need for sustainable policies that must be implemented to make non-sustainable actions and activities illegal.

Even though the definition of Corporate Social Responsibility has evolved over the years, it can be summarised as how companies behave socially and environmentally and how this influences their relationships with stakeholders, which can be seen as a competitive advantage (Rocha, 2022).

2.2. Impact of Corporate Social Responsibility Measures on Stakeholders

The term 'stakeholder' was originally used to describe all the groups without whom a company could not exist (Freeman & McVea, 2000). These groups included employees, customers, suppliers, financiers, shareholders, and society at large. This concept was later refined, defining a stakeholder as any group or individual who is affected by or can influence the company (Borba et al., 2005).

As a result, it is crucial for these groups to feel valued and trust the company. Social responsibility has thus become a key aspect of business, as it aligns with the interests of stakeholders (Adda et al., 2016). Moreover, Freeman and McVea (2000) suggest that firms that focus on addressing stakeholders' needs tend to perform better financially compared to those that only prioritise broader business objectives.

However, not all stakeholders are equally impacted by social responsibility initiatives. Investors, for instance, primarily seek higher returns, but over time, their focus has expanded beyond profitability to include the company’s social responsibility efforts (Okafor et al., 2021). Employees, another key group of stakeholders, are also highly interested in a company's social responsibility measures. When such initiatives are implemented, employees tend to feel more motivated, which leads to increased productivity and, consequently, enhanced company performance (Sameer, 2021).

According to Ziegler et al. (2011), two main arguments explain the relationship between social responsibility measures and a company’s performance. The first is grounded in stakeholder theory, which suggests that a social responsibility policy helps build long-term relationships with stakeholders (Freeman, 1984; Jones, 1995). The second argument is that sustainable

management practices inspire confidence among stakeholders, as managing such initiatives is a complex task, making managers appear highly skilled and capable (Alexander & Buchholz, 1978; Waddock & Graves, 1997).

Generation Y consumers, as described by Luger et al. (2022), demand more from companies compared to other generations, recognising the importance of social responsibility measures. As a result, companies must address the needs and expectations of these consumers.

2.3. The Report of Corporate Social Responsibility in France

France is one of the largest economies in the world, and although the government has privatised many companies, it still maintains a significant number of public enterprises (Jeantet, 2000). As a result, the French state has historically played a prominent role in social responsibility, particularly during the 1970s and 1980s. During this period, legislation was introduced requiring companies to produce a report on their social responsibility, known as the 'bilan social' or social report. This report included indicators such as wages, health, safety, working conditions, and other aspects related to employees (Gautier, 1999; Urminsky, 2003).

In 2002, all companies listed on the financial markets were mandated to include social and environmental information in their annual reports (Sobczak, 2003). They were required to specify 40 quantitative and qualitative indicators, divided into three categories: worker social information, company information, and details on the environmental impact of the company's activities, in compliance with décret n° 2002-221. By 2010, this requirement extended to non-listed companies, although the obligation was contingent on the number of employees and the operational results of the companies (Code of Commerce, 2010).

Lassaad and Khamoussi (2012) noted in their analysis of social responsibility reports from French companies that there has been a growing and significant concern regarding environmental and social issues. These companies have increasingly shown interest in sustainability, with a focus on reducing their environmental impact, particularly through efforts to minimise pollution.

The Grenelle law was introduced in 2009 but began impacting French companies in 2010, when it became known as the 'Grenelle II Law.' According to Vie Publique (2020), this law represents a national commitment to environmental sustainability and is structured around six major projects: energy and climate, biodiversity and natural protection, construction and housing,

transport, waste management, and the establishment of new ecological governance. These measures directly affected companies by requiring them to report environmental information to ensure greater transparency. Additionally, the law provided support and incentives to encourage companies to invest in new, more environmentally friendly technologies (Bétaille, 2010).

In addition to internal influences, external factors also played a role, as the European Union began to exert pressure on countries regarding their social responsibility practices. The directive 2014/95/EU, which came into effect in 2017, is one of the European policies that had a significant impact on corporate decision-making. As CSR measures gained importance, companies faced increasing pressure from stakeholders, putting their reputations at risk. This shift influenced decision-making, as the trust of investors in the sustainability practices of companies became even more crucial (Hao et al., 2022).

In 2022, the new CSRD directive 2022/2464/EU was implemented, introducing stricter requirements that forced European companies to adopt a revised Sustainability Reporting model. This directive poses a particular challenge for small and medium-sized enterprises, as their limited resources may make it difficult to meet the new reporting standards. However, companies that successfully adapt and proactively work to meet these standards can strengthen their connection with stakeholders' trust and reap the associated benefits (Celli et al., 2024).

Given this context, it is crucial to explore the existing literature on the relationship between CSR and financial performance. Furthermore, it is beneficial not only to study this relationship but also to build upon it. The next chapter will delve into this further.

2.4. The Empirical Evidence Related to CRS

2.4.1. Relationship Between CSR and Financial Performance

Globalization has brought numerous advantages but also posed challenges for companies striving to remain competitive. However, it can be leveraged as a competitive advantage, enabling the creation of value.

Okafor et al. (2021) studied tech companies in the S&P 500 and found a positive relationship between CSR and financial performance. Their research concluded that the more companies invest in social responsibility initiatives, the better their financial performance. Similarly, Ibrahim et al. (2023) conducted a study on mining companies listed on the Indonesia Stock

Exchange and reached the same conclusion, demonstrating that CSR measures positively impact financial performance and extending the benefits of CSR beyond Western economies.

Many researchers have been exploring new ways to measure social responsibility. Amar et al. (2019) used the ISO 26000 standard as the independent variable for CSR, which encompasses seven dimensions: human rights, labour relations and conditions, corporate governance, environmental management, fair operating practices, consumer issues, and community involvement. This standard was applied in a study of French companies listed on the stock market. Although a different variable was used to measure CSR, the study once again found a positive and significant relationship between ISO 26000 and financial performance.

To offer a broader perspective, Ergun et al. (2022) analysed a dataset of firms across 65 countries, examining the link between ESG scores and companies' value and profitability. Their findings revealed a significant positive relationship with both company value and profitability.

Homayoun et al. (2023) took a further step by exploring the role of Green Innovation Performance as a mediator in the relationship between CSR and financial performance, concluding that GIP enhances this relationship. Staying in Europe, specifically in Romania, Simionescu & Dumitrescu (2014) found that even during financial crises, investing in CSR is beneficial because, in the long run, there is a positive relationship between CSR and financial performance.

However, not all studies confirm a positive relationship. Espino & Mutuc (2024), in their analysis of Philippine companies, found neutral results, suggesting that CSR efforts did not significantly impact financial performance. This aligns with Pekovic & Vogt (2021), who observed no relationship between CSR and financial performance in a global study primarily involving European and North American companies. Similarly, Rocha (2022) analysed the impact of social responsibility on financial performance, studying 216 European companies listed on the stock market, and found a negative relationship. Table 1 presents the main conclusions from these studies:

Table 1

Main Conclusions on the Relationship Between CSR and Financial Performance

Authors	Period	Performance Measures	Relationship	
			Expected	Significant
Okafor et al. (2019)	2017-2019	RG|NPM|Q|ROA|ROE	Positive	Yes
Chowdhury and Nehal (2020)	2012-2016	ROA|ROE|EPS|PER	Positive	Yes
Espino and Mutuc (2024)	2019-2022	ROE|SR	Positive	No
Hamdy et al. (2024)	2010-2020	ROA|ROE|EBIT	Positive	Yes
Ibrahim et al. (2023)	2018-2021	ROA	Positive	Yes
Pekovic and Vogt (2021)	2002-2012	Q	Positive	No
Amar et al. (2019)	2010-2017	ROA|ROE|Q|MR	Positive	Yes
Ergun (2022)	2013-2021	ROA|Q	Positive	Yes
Rocha (2022)	2017-2021	ROA|ROE|Q	Positive	No
Homayoun et al. (2023)	2006-2017	GIP	Positive	Yes
Simionescu and Dumitrescu (2014)	2006-2012	ROE	Positive	Yes

Note. In this table we can find the Authors and the period of time used to conduct the study. The abbreviations are ROA= Return on Assets; ROE= Return on Equity; EPS= Earnings per Share; PER= Price Earnings Ratio; SR= Stock Return; Q= Tobin's Q; MR= Marris Ratio; GIP=Green Innovation Performance; RG=Revenue Growth; NPM=Net Profit Margin. In the column Relationship, we can find what is expected in the relationship, and if it is statistically significant or not.

These results, with some showing a positive relationship and others a negative one, indicate that the literature is still evolving, despite the growing importance of sustainability.

2.4.2. Other Dimensions of Social Responsibility

The relationship between CSR and financial performance is just one area of study within a vast field. It is important to explore different dimensions of sustainability and understand how these aspects are represented in existing literature.

One such dimension is the link between CSR and the weighted average cost of capital (WACC). Moussa and Elmarzouky (2024) found a positive and significant relationship, suggesting that as companies invest more in CSR, their cost of capital increases, something companies should carefully consider.

The growing pressure for businesses to adopt sustainable practices has prompted researchers to examine how these initiatives influence company value. Hohnen and Potts (2007) specifically investigated this relationship, developing a guide that uses CSR as a tool for sustainable development to improve stakeholder relations. This guide was designed to be flexible and applicable across various sectors and businesses of all sizes globally.

To further expand on this understanding, Fischer-Vanden and Thorburn (2011) conducted a study on voluntary environmental investments by companies, aiming to assess whether such investments would increase or decrease the firm's value. The findings were inconsistent; while Hohnen and Potts (2007) observed a positive and significant relationship between CSR and stakeholder relationships, Fischer-Vanden and Thorburn (2011) found that such announcements negatively impacted company value.

More recently, Sun et al. (2024) discovered a negative relationship between ESG scores and the likelihood of ESG-related scandals, as well as the consequences of these scandals when they occur. To support this result, Touitou et al. (2024) explored how CSR can influence and shape a company's corporate image. Their findings demonstrated that effective CSR activities not only improve a company's public perception but also contribute to sustainable growth and development.

Finally, Wu et al. (2024) examined another aspect of CSR: the correlation between CEO social capital (SC) and a company's ESG performance. They concluded that a higher CEO social capital is linked to lower ESG performance. This is because CEOs with high social capital tend to prioritise short-term returns over sustainable long-term investments.

Table 2 will show a resume of some dimensions of CSR:

Table 2

Resume of Some Dimensions of CSR

Authors	Period	Independent Variables	Dependent Variables	Relationship	
				Expected	Significant
Moussa and Elmarzouky (2024)	2014-2018	CSR	WACC	Negative	No
Fischer-Vander and Thorburn (2011)	1993-2008	Announcements	SR	Negative	Yes
Hohnen and Potts (2007)	2007	CSR	SHR	Positive	Yes
Sun et al. (2024)	2013-2020	ESG Score	SP	Negative	Yes
Touitou et al. (2024)	2023-2024	CSR	CI	Positive	Yes
Wu et al.(2024)	2010-2020	CEO SC	ESG	Negative	Yes

Note. In this table we can find the Authors and the period of time used to conduct the study on several CSR dimensions. The abbreviations are: CRS= Corporate Social Responsibility; WACC= Weighted Average Cost of Capital; SR= Stock Return; SHR= Stakeholder Relationship; SP= Scandal Probability; CI= Corporate Imagine; CEO SC= CEO Social Capital. In the column Relationship, we can find what is expected in the relationship, and if it is statistically significant or not.

These findings emphasise the importance of incorporating CSR into business models while maintaining a balance between short-term and long-term objectives. Although sustainability initiatives can be beneficial, they must be approached strategically, as they do not always guarantee a competitive advantage for the organisation.

3. Methodology

This section presents the sample and variables used in the study, providing justifications and references to prior research to ensure their relevance and validity. Subsequently, the hypothesis to be tested will be introduced, along with the model that will guide the analysis and results.

3.1. Sample and Data Collection

CSR in France has been growing steadily over the years, making the country one of the leading investors in sustainable initiatives (Rhouma et al., 2014). For this reason, this study focuses on French companies listed on the CAC-40 index. As these companies are part of the CAC-40, they provide a wealth of data that supports the study's objectives.

The study covers a five-year period from 2019 to 2023, resulting in 200 observations, which offer the necessary information for a comprehensive analysis.

Since no existing database contained all the required information, I compiled one independently. ESG Rating data was sourced from Sustainalytics, while financial information was gathered from the Zonebourse website.

The CAC-40 companies operate across various sectors, all of which are listed in Table 3 below.

Table 3

Frequency Table of the Different Sectors

Sectors	Frequency	Frequency in %
Basic Materials	2	5.00%
Communication Services	3	7.50%
Consumer Cyclical	7	17.50%
Consumer Defensive	4	10.00%
Energy	2	5.00%
Financial Services	5	12.50%
Healthcare	3	7.50%

(Continues)

Table 3 (Continued)

Sectors	Frequency	Frequency in %
Industrials	10	25.00%
Real Estate	1	2.50%
Technology	3	7.50%

As shown, the sample includes 10 different sectors, enabling meaningful comparisons between them within the study.

3.2. Variables, Hypothesis and Regression Model

This section outlines the three types of variables used in the study: independent, dependent, and control variables. Additionally, it presents the hypothesis and the model that will help achieve the main objective of this research.

The chosen independent variable is the ESG Rating, which is calculated using the Sustainalytics methodology. This approach evaluates multiple dimensions before assigning a score. By quantifying CSR in this manner, it becomes possible to analyse companies' behaviour over time and compare their performance across sectors as their scores improve or decline (Moussa & Elmarzouky, 2024; Sun et al., 2024). Table 4 provides a detailed description of all the dimensions considered in this assessment.

Table 4

ESG Rating - Dimensions

ESG RATING	
Dimensions	Definition
1. Material ESG issues	
1.1.Corporate Governance	Mechanisms to ensure transparency and investor confidence.
1.2 Access to Basic Services	The company’s capacity to provide healthcare services, managing the risks of cost-effectiveness and price transparency.
1.3 Community Relations	Focus on how companies deal with local communities and if they take in consideration their needs to minimize the impact on their wellbeing.

(Continues)

Table 4 (Continued)

ESG RATING	
Dimensions	Definition
1.4 Stakeholder Governance	Policies to manage social and environmental risks for stakeholders.
1.5 Business Ethics	Anti-ethical practices, such as corruption, bribery, and unfair competition.
1.6 Data Privacy and Cybersecurity	Data protection in compliance with regulations.
1.7 Emission, Effluents, and waste	Practices to minimize emissions, waste, and effluents.
1.8 Carbon - Products and Services	Management of energy efficiency and carbon footprint for products and services.
1.9 Human Rights	Respect for human rights within the company's operations.
1.10 Carbon - Own Operations	Practices to minimize carbon emissions in the company's own operations.
1.11 E&S Impact of Products and Services	Management of the social and environmental impacts.
1.12 Human Rights - Supply Chain	Respect for human rights within the supply chain.
1.13 Human Capital	Management of Human capital, including retaining top talents and an inclusive workplace.
1.14 Land Use and Biodiversity - Supply Chain	Management of land use and biodiversity in the supply chain.
1.15 ESG Integration - Financials	Including ESG measures in their financial decisions.
1.16 Land Use and Biodiversity	Management of land use and biodiversity by the company.
1.17 Occupational Health and Safety	Make sure the safety and health of workers are guaranteed.
1.18 Product Governance	Management of the product life cycle to prevent risks and ensure safety.
1.19 Resilience	Evaluates the company's financial stability in the face of negative economic events.

(Continues)

Table 4 (Continued)

ESG RATING	
Dimensions	Definition
1.20 Water Use - Supply Chain	Sustainable water use by supply chain.
2. Exposure	Exposure to material ESG issues, considering factors like business operations, supply chain and geographic location.
3. Management	Company's capacity to handle ESG risks by analysing their policies, practices and performance data.
4. Unmanaged Risk	Calculates the unmanaged risk, which is the residual risk that companies cannot control.

For the dependent variables, ROA and ROE will be used. As discussed in the literature review, these two variables are widely employed in analysing financial performance. ROA measures how efficiently a company utilises its assets to generate earnings, while ROE indicates the company's return on equity (Ergun, 2022; Hamdy et al., 2024; Rocha, 2022). Together, they provide a comprehensive view of a company's financial performance.

Additionally, control variables are essential as they can influence the dependent variables and should therefore be incorporated into the study. Previous research by Pekovic and Vogt (2021), Hamdy et al. (2024), Bokhari et al. (2023), Homayoun et al. (2023), and Espino and Mutuc (2024) has included control variables such as company size, age, and sector, which are the ones used in this study. Table 5 provides a detailed explanation of the selected variables and highlights their use in prior literature.

Table 5

Independent, Dependent and Control Variables

Variables	Definition	Authors
	Independent Variables	
ESGRating	Quantifies the CSR of a company. It's calculated by taking in consideration several dimensions. Data was collected from *Sustainalytics*.	Sun et al. (2024) Moussa and Elmarzouky (2024)

(Continues)

Table 5 (Continued)

Variables	Definition	Authors
	Dependent Variables	
Return on Assets (ROA)	Used as a proxy for financial performance, it is calculated as the ratio of net income for the period to total assets. Data collected from Zonebourse.	Rocha (2022) Ergun (2022) Hamdy et al. (2024)
Return on Equity (ROE)	Used as a proxy for financial performance, it is calculated by dividing net income by the company's equity over a given period. Data collected from Zonebourse.	Rocha (2022) Hamdy et al. (2024)
	Control Variables	
Sector	Each dummy variable represents a specific sector.1	Espino and Mutuc (2024) Hamdy et al. (2024) Rocha (2022)
Size	The natural logarithm of the number of employees in the company.	Pekovic and Vogt (2021) Hamdy et al. (2024) Bokhari et al. (2023)
Age	The age from the date of foundation until the year of study.	Espino and Mutuc (2024) Homayoun et al. (2023)

Note. [1] The companies were classified into 10 sectors; however, only 9 dummy variables were created, as one sector must serve as the reference category.

The variables described have previously been used to study the relationship between CSR and financial performance. However, there is limited literature specifically focused on French companies. Therefore, to align with the main objective of this study, these variables were selected, as they have demonstrated significant results in prior research.

The objective of this study is to examine the relationship between CSR and financial performance in French companies listed on the CAC-40 index. Therefore, the following hypothesis was formulated:

H1: The CRS has a positive impact on the financial performance of French companies.

To examine this hypothesis, and since panel data is used, it is necessary to choose an appropriate estimation model. The following models to be considered are:

- Firstly, the OLS Pooled Model, which is applied to panel data, doesn't take in consideration differences between the companies nor changes over time.

- Secondly, the Random Effect Model is also a model for the panel data and, contrary to the OLS Pooled Model, it takes into consideration the differences between companies, where the data is treated as random and not correlated.
- Lastly, the Fixed Effect Model, which almost like the Random Effect Model with two big differences, the data is not treated as random but fixed, as there is a potential correlation between the independent variables.

Two models were estimated to answer to the hypothesis earlier described. Both models are going to try explaining the correlation between the ESG Rating with the financial performance. As proxy of the Financial Performance, we are using the *ROA* in the model as independent variable, and in the other model, the independent variable is *ROE*. The control variables are also going to be taken into consideration, which are the sectors, the *SIZE* and the *AGE* of the companies.

The first model pretends to estimate the relationship between the *ESGRATING* with the Financial Performance using the variable *ROA*:

$$ROA_{it} = \beta_0 + \beta_1 ESGRATING_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \sum_{k=1}^{9} \beta_4 Sector_{it} + \mu_{it} \qquad (1)$$

The second models will estimate the same relationship but using *ROE* to measure the Financial Performance:

$$ROE_{it} = \beta_0 + \beta_1 ESGRATING_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \sum_{k=1}^{9} \beta_4 Sector_{it} + \mu_{it} \qquad (2)$$

4. Results

4.1. Descriptive Statistics and Correlation Analysis

4.1.1. Descriptive Statistical Features

The sample includes all companies from the CAC-40 index over a five-year period. To examine the overall behaviour of the variables, each will be analysed individually, with a total of 200 observations per variable.

Regarding financial performance, Table 6 shows that the *ROA* variable has a mean of 4.70% and a median of 4.04%, with a standard deviation of 4.60%. The values range from a minimum of -16.24% to a maximum of 22.75%, indicating significant variation among the sampled companies. Similarly, *ROE* has a mean of 13.47% and a median of 12.81%, with a standard deviation of 10.92%. Like *ROA*, *ROE* also exhibits a wide range of values at its extremes.

Table 6

Descriptive Analysis of Variables

Variable	Mean	Median	Minimum	Maximum	Standard deviation
ROA	4.70%	4.04%	-16.24%	22.75%	4.60%
ROE	13.47%	12.81%	-36.43%	60.10%	10.92%
ESGRATING	21.00	20.90	10	32.40	4.61
AGE	89.40	60.00	1	358	70.81
SIZE [1]	11.47	11.75	8.04	12.95	0.97

Note. [1] The variable Size represents the natural logarithm of the number of employees in the company.

The independent variable, *ESGRATING*, has a mean of 21 and a median of 20.90, indicating consistency in the data. The *ESGRATING* ranges from a minimum of 10 to a maximum of 32.40.

Regarding the control variables, the average *AGE* of the sample is 89.4 years, with a range from 1 year to 358 years, representing both young and established companies. In terms of company

SIZE, measured by the logarithm of the number of employees, the mean is 11.47, and the median is 11.75.

Table 7 below presents the mean *ESGRATING* across different sectors in the sample. The Energy sector stands out with a mean of 27.89, reflecting a strong commitment to CSR. While not as high as the Energy sector, the Financial Services and Basic Materials sectors also show notable *ESGRATING*, with means of 23.76 and 24, respectively.

Table 7

Mean of ESG Rating Among the Different Sectors

Sector	Mean of ESG Rating
Financial Services	23.76
Energy	27.89
Industrials	21.68
Consumer Cyclical	18.12
Consumer Defensive	17.92
Healthcare	19.93
Basic Materials	24
Technology	19.29
Communication Services	20.7
Real Estate	22

On the other hand, the sectors Consumer Defensive and Consumer Cyclical shows the lowest mean of *ESGRATING*, at 17.92 and 18.12 respectively, indicating a less focus on the CSR. As for the other sectors they have values that's goes from 19.29 to 22, which shows a moderate CRS.

4.1.2. Correlation Coefficient

To analyse the correlation between the variables, we will use the Spearman correlation coefficient. This method was selected because not all variables follow a normal distribution. The correlation values range from -1 to 1, with values closer to these extremes indicating a

stronger relationship between the variables. Conversely, values closer to 0 suggest a weaker relationship. The Spearman correlation coefficient is presented in Table 8.

Table 8

Correlation Matrix

	ROA	ROE	ESGRATING	AGE	SIZE
ROA	1				
ROE	0.7508	1			
ESGRATING	-0.4254	-0.2788	1		
AGE	-0.1349	-0.1503	-0.1576	1	
SIZE	-0.2909	-0.1801	0.3461	0.0669	1

The results show a strong, positive correlation between *ROA* and *ROE*, which is expected as both variables measure the companies' financial profitability. On the other hand, the *ESGRATING* negatively influences both *ROA* and *ROE*, with correlations of -0.4254 and -0.2788, respectively, suggesting that companies with a higher *ESGRATING* tend to have lower *ROA* and *ROE*

The companies' *AGE* shows a weak relationship with *ROA* (-0.0359) and *ROE* (-0.1151), indicating a weak correlation that does not seem to significantly influence the results for *ROA* and *ROE*.

Lastly, the *SIZE* of the company follows a similar pattern to *AGE*, with both relationships being weak. However, the *SIZE* of the company has a slightly stronger negative correlation with *ROA* than with *ROE*.

4.2.Choosing the Right Model

This study uses panel data from 2019 to 2023 to analyse the impact of *ESGRATING* on company financial performance. To determine the appropriate model, it is necessary to choose between the OLS pooled model, the Fixed Effect Model, and the Random Effect Model. Three tests were conducted to make this decision: the F-test, the Breusch-Pagan test, and the Hausman test. The F-test helps determine whether to use the OLS Pooled Model or the Fixed Effect Model. The

Breusch-Pagan test assists in choosing between the OLS Pooled Model and the Random Effect Model. Finally, the Hausman test provides the necessary information to select between the Fixed Effect Model and the Random Effect Model.

To conduct these tests, as mentioned earlier, the dependent variables are *ROA* and *ROE*, which serve as proxies for financial performance, while the *ESGRATING* is the independent variable. The control variables include the companies' *AGE*, sector dummies, and the natural logarithm of company size (*SIZE*).

Table 9 presents the p-values for the various tests.

Table 9

F-test, Breusch-Pagan and Haussman p-values

Dependent Variables	*p-value*	
	ROA	ROE
F-Test	7.66E-15	0.0029
Breusch-Pagan	3.68E-17	8.24E-06
Haussman	1.40E-03	1.51E-09

By analysing the results for both financial performance variables, we observe that in the F-test, Breusch-Pagan test, and Hausman test, the p-value is less than 0.05, leading to the rejection of the null hypothesis in all cases.

For the F-test, this indicates that the OLS Pooled model is rejected, and the Fixed Effects Model should be used. Similarly, in the Breusch-Pagan test, a p-value below 0.05 suggests that the OLS Pooled model is not appropriate, and the Random Effects Model should be considered instead. Lastly, the Hausman test results, with a p-value below 0.05, indicate a correlation between the dependent and independent variables, making the Random Effects Model unsuitable and confirming the Fixed Effects Model as the best choice.

This model eliminates all time-invariant characteristics, meaning that sector dummies will be absorbed by the individual fixed effects and, therefore, will not be considered.

4.3.Model Estimation

The model was estimated using panel data. As discussed in the previous section, the F-test, Breusch-Pagan test, and Hausman test confirmed that the Fixed Effects Model is the most appropriate approach for analysing the relationship between the ESG rating and financial performance.

Table 10

Model Results

Dependent Variable	ROA		ROE	
Constant	-0.5654	**	-3.305	***
	(0.2335)		(0.6999)	
ESGRATING	0.0026		0.001	
	(0.0023)		(0.0069)	
Log(Size)	-0.0002		0.1936	***
	(0.012)		(0.0361)	
Age	0.0063	***	0.0134	**
	(0.0018)		(0.0055)	

Note. The values in parentheses is the standard deviation. Significance levels are indicated by * = 10%, ** = 5% and *** = 1%. Those that have no code means they are not statistically significant.

4.4.Discussion of Results

Based on the test results, the relationship between ESG Rating and both ROA and ROE is not statistically significant, suggesting that it does not influence financial performance. This finding aligns with the studies by Espino and Mutuc (2024) and Rocha (2022), which also found no relationship between ESG Rating and financial performance. Consequently, the hypothesis that CSR positively influences financial performance is not supported.

This result may indicate that the analysed period (2019–2023) may not be long enough to capture major ESG initiatives, or that the benefits of ESG practices take longer to translate into financial returns.

Regarding the control variables, as found in Rocha (2022), Espino and Mutuc (2024), and Pekovic and Vogt (2021), we demonstrate that company age and size are statistically

significant, as shown in Table 10. Specifically, age is significant when both ROA and ROE serve as proxies for financial performance, whereas size is only significant when ROE is used.

5. Conclusion

The relationship between corporate sustainability and financial performance has been a subject of study for several years. This relationship has gained increasing attention in academic research due to its significance for the future. Despite extensive studies, the results remain inconclusive, with some research identifying a positive relationship (Chowdhury & Nehal, 2020; Hamdy et al., 2024; Homoyaoun et al., 2023; Ibrahim et al., 2021; Okafor et al., 2023), while others have found negative or neutral relationships (Espino & Mutuc, 2024; Pekovic & Vogt, 2021; Rocha, 2022).

This study aims to contribute to this investigation by analysing the relationship in the French market, specifically focusing on the companies listed in the CAC-40 index, over a five-year period from 2019 to 2023, resulting in 200 observations. To measure financial performance, the variables ROA (Return on Assets) and ROE (Return on Equity) were employed, while the ESG Rating was used to quantify corporate social responsibility (CSR).

The results obtained indicate that CSR does not have a significant impact on the financial performance of CAC-40 companies, thus rejecting the initial hypothesis. These findings align with studies such as those by Espino and Mutuc (2024) and Rocha (2022), which also reported no significant relationship between CSR and financial performance.

However, the control variables demonstrated a stronger influence on financial performance. Both the age and size of companies were significant in at least one of the financial performance proxies, with age being particularly significant for ROA and size for ROE.

This thesis addressed its primary objective of exploring the relationship between CSR and financial performance. While the results did not confirm the hypothesis and showed that CSR is not statistically significant, they contribute to the existing literature and offer insights for further research in this area.

There were also limitations to this research, one of which was the time frame. The study covers the period from 2019 to 2023, which may not capture all long-term social, environmental, and economic shifts that could influence the results, either negatively or positively. Additionally, the proxy used to measure CSR can be debated, as various other methodologies and metrics are available.

For future research, it would be valuable to extend the study over a longer period, such as 10 or 15 years, to capture the major trends that have shaped European companies. Furthermore, using alternative variables to measure CSR could provide deeper insights into the subject.

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