

# ESG Practices and the Cost of Debt: Evidence from Italian SMEs

Luana Serino

Department of Management and Economics Pegaso Telematic University Naples, Italy

Corresponding Author Email: Luana.serino@unipegaso.it

Francesco Campanella

Department of Economics University of Campania "Luigi Vanvitelli" Capua, Italy

Email: Francesco.campanella@unicampania.it

To Link this Article: <http://dx.doi.org/10.6007/IJARAFMS/v14-i3/21849> DOI:10.6007/IJARAFMS/v14-i3/21849

---

*Published Online:* 21 July 2024

## Abstract

This study investigates whether lending institutions in Italy reward firms for their environmental, social, and governance (ESG) performance and disclosure by lowering their cost of debt capital. Especially after the Covid 19 pandemic, investors as well as other stakeholders increasingly demand both nonfinancial reports and standard financial statements. So, the integration of environmental and ethical criteria into the evaluation of a corporation is a theme widely accepted by socially responsible investors and stakeholders. In other hands, the banking system has started to incorporate ethical and social indicators into the decision-making process. Our paper finds lending institutions value ESG performance, integrating sustainability factors in their making-decision process. In this sense, we show evidence that organizations with stronger level of ESG performance have better credit conditions, through a lower cost of debt.

**Keywords:** Bank Credit, ESG Score, Gender, Governance, SMEs

## Introduction

Environmental, Social and Governance (ESG) practices have garnered significant attention from both researchers and practitioners. Consequently, a growing number of corporations are engaging in ESG activities and communicating their efforts to stakeholders through various channels. Many companies have shown a stronger commitment to ESG practices to be recognized as socially responsible (Garcia et al., 2017).

The increasing concern and awareness among investors and stakeholders towards ESG engagement reflect its growing acceptance. In recent years, prioritizing ESG issues has enabled firms to Build strong relationships with key stakeholders and mitigate potential risks. In addition, firms which are more likely to engage in sustainable investments can gain a competitive advantage, thereby improving overall performance and market value (Hao & He, 2022; Govindan et al., 2021).

Traditional accounting practices traditionally focus solely on the financial outcomes of business activities. However, in today's global business landscape, investors as well as other stakeholders increasingly demand both nonfinancial reports and standard financial statements. In this sense, the integration of environmental and ethical criteria into the evaluation of a corporation is a theme widely accepted by socially responsible investors and stakeholders.

To translate sustainable practices into lasting benefits, organizations are tasked with integrating sustainability into their core strategies and ensuring through stakeholder understanding of business operations (Campanella et al., 2021).

The recent Covid 19 pandemic and climate change were the two main factors that led to a massive orientation of economies towards sustainable practices. Over the last two decades, the banking sector has paid increasing attention to sustainable engagement (Menicucci and Paolucci, 2022).

Currently, many small and medium-sized enterprises (SMEs) do not fully embrace environmentally friendly practices (Gandhi et al., 2018). The adoption of green operations among SMEs is still not widespread (Liu et al., 2023). Furthermore, SMEs tend to approach sustainability in a less structured and formalized manner compared to larger companies. This is because SMEs typically implement more informal strategies (Russo & Tencati, 2009; Fatima and Elbanna, 2023).

Our study empirically examines the impact of firms' ESG performance and disclosure on their cost of debt, and investigates whether ESG performance influences the cost of debt. Using a sample of Italian listed SMEs, we investigate whether ESG practices are crucial in determining a firm's creditworthiness in the eyes of lending institutions. Indeed, ESG objectives do not clearly figure in the creditworthiness evaluation of the banking system yet, even if also the financial markets have demonstrated an increasing interest in ESG investment (Artis, 2017). So, ESG engagement may serve as risk mitigation on their credit rating because ESG factors affect borrowers' cash flows and companies' default probability estimation.

Non-financial criteria in credit decision-making process should obtain more relevance because ethical and social investments have become a central issue in the business models. However, the academic literature regarding the impact of ESG score on credit access is still poor and represents an open debate that needs further investigation because of the relevance of a social and solidarity finance system.

Our study aims to investigate the relationship between ESG score and cost of credit charged by banks, as a proxy of credit access.

For this reason, we structure our analysis by developing a research question: Does corporate sustainable performance influence the access to bank loans for listed Italian firms?

In recent years, the adoption of sustainable practices has been increasing, leading to a growing body of literature that examines their impact on company performance. However, most of this research has focused on large corporations Ameer & Othman (2012), with small and medium-sized enterprises (SMEs) receiving relatively little attention (Lagazio et al., 2021). Additionally, the findings in this area are highly varied, and no definitive conclusions have been reached. This variability is likely due to the wide range of sustainability variables used in different analytical models.

To address these gaps, we investigate whether SMEs that adopt more sustainable business models are more likely to receive loans (both short-term and long-term lines of credit). Our study focuses on all listed Italian SMEs during the period from 2017 to 2023.

Our paper aims to fill the aforementioned gap providing insight into the linkage between bank credit access and sustainability performance for listed firms.

The rest of the paper is structured as follows. Section 2 reviews the literature and describes the hypotheses. Section 3 describe our sample, the variables used, the methodologies we used in our analysis and the results. Section 4 concludes.

### **Literature Review and Hypothesis Development**

Indeed, nowadays, sustainability has become a vital aspect of a corporate strategy. Global business trends have swiftly evolved, highlighting the necessity of prioritizing environmental and social impact alongside financial gain. Furthermore, investors are increasingly focusing on Environmental, Social and Governance matters Dyck et al (2019), and organizations demonstrating strong ESG performance are perceived more favorably by stakeholders (Ioannou and Serafeim, 2015). Therefore, it is increasingly important considering long-term environmental, social and governance objectives, integrating them into their corporate strategy and business models.

According to the literature ESG practices represent a crucial factor in determining the creditworthiness of a firm by loan officers. We argue that the banking system could include firms' ESG information in their lending decision to evaluate the default risk of a firm (Weber et al., 2010, Weber et al., 2014).

The traditional definition of corporate governance contained in the Cadbury Report (1992) highlights the relevance of creating value for shareholders, aligning manager interests with shareholder interests. At the same time, in recent years, there has been an increasing concern for sustainability in corporate strategies and governance, which has revived public debates about the non-financial interests that a company should pursue. For this reason, over recent years, there has been a growing interest on the effects of corporate governance on sustainability practices adopted by firms.

Therefore, integrating information on a firm's ESG practices may mitigate this, reducing the pricing of credit charged to that firm by lending institutions.

Traditionally, credit lending practices have relied heavily on credit score systems, where banks use financial data and basic qualitative information to assess borrowers' creditworthiness. Banks manage credit risk by accessing two main types of information: hard information and soft information (Campanella et al., 2020).

Nowadays, incorporating non-financial criteria into the loan decision-making process has become increasingly relevant. This shift reflects the need to consider economic, environmental, and social factors alongside financial ones (Ortas et al., 2015).

For this reason the banking system has started to incorporate ethical and social indicators into the decision-making process. The effectiveness of these criteria in evaluating credit applications is crucial for improving credit quality and the stability of the banking sector (Quintiliani, 2019; Campanella et al., 2023).

Today, in addition to the traditional credit scoring evaluation process, the sustainability performance of a company has become central in banks' credit lending practices (Birindelli et al., 2015). Studies have shown that the right combination of financial and non-financial factors can enhance the accuracy in predicting default events, positively impacting the credit risk portfolio of the banking system (Attig et al., 2013; Raimo et al., 2021).

Prior research Apergis et al (2022) have established a relationship between ESG activities and credit ratings as a proxy for the cost of debt as legal and reputational risks associated with environmental incidents lead to a downgrading. Adopting a version of legitimacy theory,

some studies Eliwa et al (2021) found lending institutions value sustainability activities and integrate ESG information in their credit decisions. As a consequence, firms with stronger ESG score have a lower cost of debt, obtaining an easier credit access; however, the results concerning the link between ESG performance and cost of debt are conflicting (Erragragui, 2017; Hasan et al., 2017).

However, despite the worldwide recognition of the importance of ESG practices by firms, their impact on the cost of debt remains a contentious issue in academia. Some studies provide evidence of an inverse relationship between ESG performance and the cost of debt (Hasan et al., 2017; Crifo et al., 2017). These studies suggest that better ESG performance can lead to lower borrowing costs. In fact, on the one hand, some studies (Hasan et al., 2017; Crifo et al., 2017) provided evidence of the negative relationship between ESG performance and the cost of debt; on the other hand, other studies Erragragui (2017); Stellner et al (2015); Hoepner et al (2016) found evidence of an insignificant or positive relationship between ESG performance and the cost of debt, indicating that the impact of ESG practices on debt cost can vary widely. The conceptual link between ESG disclosure and the cost of debt is more straightforward, implying that transparent ESG reporting might influence lenders' perceptions and affect borrowing costs.

In the light the foregoing discussions, the current study contends that ESG performance is likely to influence the cost of debt charged by banks, informing the hypothesis that:

*Hypothesis:* The sustainability performance of a firm is likely to influence the cost of debt charged by lending institutions.

### **Sample and Method**

The population of the research is listed Italian firms. Primary source for identifying the perimeter of Italian listed SMEs was the Orbis database of Bureau van Dijk. In accordance with the definition established by the European Commission, we searched for active firms with less than 50 million turnover and less than 250 employees. Companies that did not provide information for all survey years and financial companies were eliminated. The sample firms belong mainly to the manufacturing industry.

Following prior work e.g., Aevoae et al (2022); Agnese and Giacomini (2023) we employ the ESG score, as well as its three dimensions, i.e., Environmental (encompassing Emissions, Innovation, and Resource use sub-pillars), Social (incorporating Community, Human rights, Product responsibility, and Workforce sub-pillars) and Governance (containing CSR strategy, Management, Shareholders sub-pillars) pillars, from the Refinitiv Asset4 database. These ten categories are derived from self-reported information disclosed by the banks and are weighted according to the number of issues they encompass to get the ESG Score. A higher ESG score indicates better sustainability performance. The ESG score is obtained by analyzing different features such as emissions, environmental product innovations, human rights and the firms' structure. It ranges from 0 to 100, where 100 represents the highest score attributed to a company that invests in corporate social responsibility projects (D'Amato et al., 2022).

Refinitiv Asset4 database provides comprehensive coverage, so these ESG scores are being used more and more by diverse authors (e.g. Campanella et al., 2021; Andrieş & Sprincean, 2023).

In accordance with prior studies Pekovic and Vogt (2020) secondary data on governance/accounting variables were collected from the Refinitiv/DataStream database. Refinitiv offers one of the most comprehensive ESG databases in the industry, available on global companies and continuously growing across more than 450 different ESG metrics. We match and filter for Refinitiv ESG score and end up with 212 companies.

The final sample comprises of 212 firms covered a 7-years period. In accordance with the existing literature (Pozzoli et al., 2022), a longitudinal research design was adopted for the purpose of performing a more comprehensive analysis. The panel research design yielded 1272 firm-year observations.

### *Variables Definition*

#### *Dependent Variable*

We used Refinitiv ESG scores to increase data quality. Refinitiv runs one of the world's largest ESG data gathering and analysis operations (Aydoğmuş, et al., 2022). To measure the cost of debt, we use the accounting measure, calculated as the ratio of a firm's interest expense to its average debt (Eliwa et al., 2019).

#### *Independent and Control Variables*

Three corporate governance factors that have been well documented to affect sustainability performance were investigated, namely: board independence, board gender diversity board size (Tingbani et al., 2020; Nuber and Velte, 2021; Elsayih et al., 2021).

In line with prior studies Nadem et al (2020), four firm-level variables that affect environmental practice of organisations were included as control variables, notably firm size, leverage and economic profitability.

Table 1 summarizes the variables used in this research.

Table 1

#### *Variables measurement*

Variables	Measurement/ Supporting literature
Esg score	It ranges from 0 to 100 (D'Amato et al., 2022).
Cost of debt	Ratio of a firm's interest expense to its average debt
Gender diversity	Number of Female directors to total board size in a year expressed in % (Nadeem et al., 2020; Tingbani et al., 2020)
Board Independence	Proportion of Non-executive Directors (NEDs) to total board size expressed in % (Disli et al., 2022)
Board size	Total number of directors on the board
Firm size	Measured as the natural logarithm of total assets (Wang and Berens ,2015)
Roa	Return on Total Assets ratio (Bissoondoyal-Bheenick et al., 2023)
Leverage	Ratio of Total Debt to Total Assets (Al-Shaer et al., 2021)

GDP	It measures the annual growth rate of the Gross Domestic Product (GDP) (Zhou et al., 2020).
-----	---

## Results

Before commenting the results and answering the research hypotheses, it is necessary to make some considerations regarding the correlation analysis between the variables distributed normally using the Pearson indices correlation matrix (Table 2). Table 2 shows that many variables in the period 201-2024 are significantly correlated, but often Pearson's indices are low. Furthermore, as Kennedy (1998) suggests, the variance inflation factor (VIF) of all variables is less than 10, indicating that multicollinearity is not a serious problem

Table 2

*Pearson Correlations Matrix*

Variables	CoD	ESG score	gender	B_Independence	Size	Firm size	RoA	Lev	GdP
CoD	1								
ESG score	0.05 ***	1							
Gender	0.15 ***	0.31 ***	1						
B_Independence	-0.01	0.03 **	-0.01	1					
B_size	0.36	0.12 ***	0.16	0.09	1				
Firm size	-0.04 **	-0.27	-0.01	-0.03	0.09 ***	1			
ROA	0.01	0.43 ***	-0.02 **	-0.02 ***	-0.02 **	-0.05 ***	1		
LEV	0.04	0.02	-0.01 **	0.01 **	-0.05	0.08	0.01	1	
GdP	0.01	0.06	-0.09	0.01 *	0.06	0.00 *	0.00	0.00	1

\*\*  $p$ -value > 1%; \*\*\*  $p$ -value > 5%; \*  $p$ -value > 10%.

to investigate the relationship between the variables under investigation and provide responses to the research hypotheses, GLS analysis was performed (Table 3).

We calculated both the fixed effects and random effects to decide which are the best solution using the Hausman Test. The results suggest the development of random effects because, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. In addition, random effects assume that the entity's error term is not correlated with the predictors, which allows for time-invariant variables to play a role as explanatory variables. The software adopted was Stata 15.. Table 3 displays regression results for panel data.

To test the relationships between access to bank-credit by firms and their sustainability level, we estimated the following panel data model with random effects and clustered heteroscedasticity standard errors at the firm level to account for the serial correlation of the dependent variable for each firm:

$$\text{Credit access}_{ijt} = \alpha + \beta \text{SUSTAINABILITY}_{it} + \text{CONTROL VARIABLES}_{it} + \epsilon_{ijt}$$

where  $i$  indexes companies,  $j$  regions and  $t$  years;  $\alpha$  is the constant term;  $\beta$  denotes the independent variable of interest;  $\gamma$  represents the set of control variables;  $\tau$  denotes fixed effects and  $\kappa$  region-fixed ones; and  $\epsilon$  is the error term. Standard errors are clustered at the firm level.

Table 3  
*Displays Regression Results for Panel Data (CoD)*

PANEL	CoD <sub>2017-2023</sub>
(Constant)	-0.697 (-93.89)***
Esg_score	-0.008 (-7.32)***
Gender	0.009 (5.81)***
B_size	-1.001 (-0.33)
Firm_size	-0.003 (-0.72)
Roa	-0.003(-1.68)**
Leverage	2.31 (13.47)***
PIL	-0.001 (1.77)
Adj R <sup>2</sup>	0.96
Wald chi <sup>2</sup>	1145.94***

The analysis of the relation between the independent variables and the dependent variables provides the answer to research hypothesis.

In particular, the results show that firm that are more likely to engage in sustainable investments, are more likely to have better condition in credit access in terms of cost of debt. So, our results support the research hypothesis.

### Discussion and Conclusion

The primary aim of this paper is to gain a deeper understanding of the determinants of ESG performance and the impact of the sustainability activities in Italy

Using a sample of 1272 firm-year observations, our findings suggest that the level of ESG performance influences the credit access.

The 'sustainability challenge' represents a global issue impacting all companies, both financial and non-financial, particularly in the aftermath of the Covid-19 pandemic. The challenge is very relevant non-financial firms, especially SMEs. SMEs are a cornerstone of Italian economy and play a central role in value chains and community dynamics (D'Apolito et al., 2024; Garcia et al., 2017). Thus, their involvement in the sustainability process is vital for the success of Italy's transition to sustainability. For SMEs, being included in the sustainability agenda is crucial for accessing key resources and opportunities, obtaining better financial conditions, and forming important partnerships (European Investment Bank-EIB, 2023).

Consistent with the aim of our paper, we find that lending institutions value ESG performance, integrating sustainability factors in their making-decision process. In this sense, we show evidence that organizations with stronger level of ESG performance have better credit conditions, through a lower cost of debt. This aspect is particularly important in those countries that are notoriously bank-centric, such as Italy, where the bond and stock markets are underdeveloped. In these countries, the bank plays a key role as a lender to the real

economy as a whole. Access to bank credit is essential for the growth and survival of the companies themselves (Campanella et al., 2021).

In addition, our results show that also some corporate governance factors impact on the pricing of credit charged by banks. In particular, our results show evidence of a taste-based discrimination against female firms. Indeed, gender diversity is in itself an obstacle to access to bank credit (Kara et al., 2022). Despite the efforts by governments and policymakers, the issue of gender discrimination in access to credit is still a major concern (Serino and Campanella, 2023).

Indeed, this enriches the literature on the relationship between credit access and ESG performance for listed firms. Additionally, our findings provide valuable insights for policymakers and regulators. The evidence suggests that ESG engagement could be integrated into credit lending policies, thereby supporting the evaluation of sustainable credit lending practices. Furthermore, the ESG score can be used to estimate corporate risk sensitivity and the probability of default (Apergis et al., 2022).

Although this study sheds new light on the association between ESG practices and the cost of debt, it has several limitations that provide avenues for future research.

First, this study used secondary data obtained from specialized databases, widely accepted in management and accounting literature. However, collecting primary data would provide stronger support for our findings. For instance, interviewing CEOs of lending institutions in Italian countries about the lending decision process and manually developing an index for measuring ESG practices could enhance the robustness of the results.

Finally, our study focused on non-financial listed firms in Italian countries. Future research could expand the sample to include countries with other economies or emerging economies, as well as diverse cultural and institutional settings, to investigate how these factors impact the association between ESG practices and the cost of debt.

## References

- Aevoae, G. M., Andrieş, A. M., Ongena, S., & Sprincean, N. (2023). ESG and systemic risk. *Applied Economics*, 55(27), 3085-3109.
- Agnese, P., & Giacomini, E. (2023). Bank's funding costs: Do ESG factors really matter?. *Finance Research Letters*, 51, 103437.
- Al-Shaer, H., Zaman, M., & Albitar, K. (2024). CEO gender, critical mass of board gender diversity and ESG performance: UK evidence. *Journal of Accounting Literature*.
- Ameer, R., & Othman, R. (2012). Sustainability practices and corporate financial performance: A study based on the top global corporations. *Journal of business ethics*, 108, 61-79.
- Andrieş, A. M., & Sprincean, N. (2023). ESG performance and banks' funding costs. *Finance research letters*, 54, 103811.
- Apergis, N., Poufinas, T., & Antonopoulos, A. (2022). ESG scores and cost of debt. *Energy Economics*, 112, 106186.
- Artis, A. (2017). Social and solidarity finance: A conceptual approach. *Research in International Business and Finance*, 39, 737-749. R
- Attig, N., El Ghouli, S., Guedhami, O., & Suh, J. (2013). Corporate social responsibility and credit ratings. *Journal of business ethics*, 117, 679-694.
- Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, 22, S119-S127.



- Birindelli, G., Ferretti, P., Intonti, M., & Iannuzzi, A. P. (2015). On the drivers of corporate social responsibility in banks: evidence from an ethical rating model. *Journal of Management & Governance*, 19, 303-340.
- Bissoondoyal-Bheenick, E., Brooks, R., & Do, H. X. (2023). ESG and firm performance: The role of size and media channels. *Economic Modelling*, 121, 106203.
- Cadbury, A., (1992), The Financial Aspects of Corporate Governance (Cadbury Report), London, UK: The Committee on the Financial Aspect of Corporate Governance (The Cadbury Committee) and Gee and Co, Ltd, pp.
- Campanella, F., Gangi, F., Mustilli, M., & Serino, L. (2020). The effects of the credit selection criteria on non-performing loans: evidence on small and large banks in Italy. *Meditari Accountancy Research*, 28(2), 251-275.
- Campanella, F., Serino, L., Battisti, E., Giakoumelou, A., & Karasamani, I. (2023). FinTech in the financial system: Towards a capital-intensive and high competence human capital reality?. *Journal of Business Research*, 155, 113376.
- Campanella, F., Serino, L., Crisci, A., & D'Ambra, A. (2021). The role of corporate governance in environmental policy disclosure and sustainable development. Generalized estimating equations in longitudinal count data analysis. *Corporate Social Responsibility and Environmental Management*, 28(1), 474-484.
- Crifo, P., Diaye, M. A., & Oueghlissi, R. (2017). The effect of countries' ESG ratings on their sovereign borrowing costs. *The Quarterly Review of Economics and Finance*, 66, 13-20.
- D'Amato, V., D'Ecclesia, R., & Levantesi, S. (2022). ESG score prediction through random forest algorithm. *Computational Management Science*, 19(2), 347-373.
- D'Apolito, E., Galletta, S., Iannuzzi, A. P., & Labini, S. S. (2024). Sustainability and bank credit access: New evidence from Italian SMEs. *Research in International Business and Finance*, 69, 102242.
- Disli, M., Yilmaz, M. K., & Mohamed, F. F. M. (2022). Board characteristics and sustainability performance: empirical evidence from emerging markets. *Sustainability Accounting, Management and Policy Journal*, 13(4), 929-952.
- Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of financial economics*, 131(3), 693-714.
- Eliwa, Y., Aboud, A., & Saleh, A. (2021). ESG practices and the cost of debt: Evidence from EU countries. *Critical Perspectives on Accounting*, 79, 102097.
- Elsayih, J., Datt, R., & Hamid, A. (2021). CEO characteristics: do they matter for carbon performance? An empirical investigation of Australian firms. *Social Responsibility Journal*, 17(8), 1279-1298.
- Erragragui, E. (2018). Do creditors price firms' environmental, social and governance risks?. *Research in International Business and Finance*, 45, 197-207.
- European Investment Bank (Ed.). (2023). *The economic appraisal of investment projects at the EIB*. European Investment Bank.
- Fatima, T., & Elbanna, S. (2023). Corporate social responsibility (CSR) implementation: A review and a research agenda towards an integrative framework. *Journal of Business Ethics*, 183(1), 105-121.
- Gandhi, N. S., Thanki, S. J., & Thakkar, J. J. (2018). Ranking of drivers for integrated lean-green manufacturing for Indian manufacturing SMEs. *Journal of Cleaner Production*, 171, 675-689.

- Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. J. (2017). Sensitive industries produce better ESG performance: Evidence from emerging markets. *Journal of cleaner production*, 150, 135-147.
- Govindan, K., Kilic, M., Uyar, A., & Karaman, A. S. (2021). Drivers and value-relevance of CSR performance in the logistics sector: A cross-country firm-level investigation. *International Journal of Production Economics*, 231, 107835.
- Hao, J., & He, F. (2022). Corporate social responsibility (CSR) performance and green innovation: Evidence from China. *Finance Research Letters*, 48, 102889.
- Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017). Social capital and debt contracting: Evidence from bank loans and public bonds. *Journal of Financial and Quantitative Analysis*, 52(3), 1017-1047.
- Hoepner, A., Oikonomou, I., Scholtens, B., & Schröder, M. (2016). The effects of corporate and country sustainability characteristics on the cost of debt: An international investigation. *Journal of Business Finance & Accounting*, 43(1-2), 158-190.
- Ioannou, I., & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations: Analysts' perceptions and shifting institutional logics. *Strategic management journal*, 36(7), 1053-1081.
- Kara, A., Nanteza, A., Ozkan, A., & Yildiz, Y. (2022). Board gender diversity and responsible banking during the COVID-19 pandemic. *Journal of Corporate Finance*, 74, 102213.
- Kennedy, Peter, 1998. *A Guide to Econometrics*. Oxford: Blackwell
- Lagazio, C., Persico, L., & Querci, F. (2021). Public guarantees to SME lending: Do broader eligibility criteria pay off?. *Journal of Banking & Finance*, 133, 106287.
- Liu, S., Jin, J., & Nainar, K. (2023). Does ESG performance reduce banks' nonperforming loans?. *Finance Research Letters*, 55, 103859.
- Menicucci, E., & Paolucci, G. (2022). Board diversity and ESG performance: Evidence from the Italian banking sector. *Sustainability*, 14(20), 13447.
- Nadeem, M., Bahadar, S., Gull, A. A., & Iqbal, U. (2020). Are women eco-friendly? Board gender diversity and environmental innovation. *Business Strategy and the Environment*, 29(8), 3146-3161.
- Nuber, C., & Velte, P. (2021). Board gender diversity and carbon emissions: European evidence on curvilinear relationships and critical mass. *Business Strategy and the Environment*, 30(4), 1958-1992.
- Ortas, E., Gallego-Alvarez, I., & Álvarez Etxeberria, I. (2015). Financial factors influencing the quality of corporate social responsibility and environmental management disclosure: A quantile regression approach. *Corporate Social Responsibility and Environmental Management*, 22(6), 362-380.
- Pekovic, S., & Vogt, S. (2021). The fit between corporate social responsibility and corporate governance: the impact on a firm's financial performance. *Review of Managerial Science*, 15(4), 1095-1125.
- Pozzoli, M., Pagani, A., & Paolone, F. (2022). The impact of audit committee characteristics on ESG performance in the European Union member states: Empirical evidence before and during the COVID-19 pandemic. *Journal of Cleaner Production*, 371, 133411.
- Quintiliani, A. (2019). Impact of Financial Transparency on SMEs' Value. *Journal of Applied Finance & Banking*, 9(6), 285-300.
- Stellner, C., Klein, C., & Zwergel, B. (2015). Corporate social responsibility and Eurozone corporate bonds: The moderating role of country sustainability. *Journal of Banking & Finance*, 59, 538-549.

- Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure: The effect on the cost of debt financing. *Corporate Social Responsibility and Environmental Management*, 28(4), 1412-1421.
- Russo, A., & Tencati, A. (2009). Formal vs. informal CSR strategies: Evidence from Italian micro, small, medium-sized, and large firms. *Journal of Business Ethics*, 85, 339-353.
- Tingbani, I., Chithambo, L., Tauringana, V., & Papanikolaou, N. (2020). Board gender diversity, environmental committee and greenhouse gas voluntary disclosures. *Business Strategy and the Environment*, 29(6), 2194-2210.
- Wang, Y., & Berens, G. (2015). The impact of four types of corporate social performance on reputation and financial performance. *Journal of Business Ethics*, 131, 337-359.
- Weber, O., Scholz, R. W., & Michalik, G. (2010). Incorporating sustainability criteria into credit risk management. *Business strategy and the environment*, 19(1), 39-50.
- Weber, A. M., Soreni, N., & Noseworthy, M. D. (2014). A preliminary study on the effects of acute ethanol ingestion on default mode network and temporal fractal properties of the brain. *Magnetic Resonance Materials in Physics, Biology and Medicine*, 27, 291-301.
- Zhou, G., Liu, L., & Luo, S. (2022). Sustainable development, ESG performance and company market value: Mediating effect of financial performance. *Business Strategy and the Environment*, 31(7), 3371-3387.