

**“48th RSEP International Conference on Economics, Finance and Business” 1-2 October
2026, University of Washington Rome Center, Rome, Italy**

Sustainability Reporting and Financial Performance of WSE Listed Companies

Justyna Godawska

Associate Prof., Department of Finance and Accounting, Faculty of Management, AGH University, Poland

E-mail: godawska@agh.edu.pl

Bartosz Rymkiewicz

Assistant Prof., Department of Finance and Accounting, Faculty of Management, AGH University, Poland

E-mail: brymkiew@agh.edu.pl

DOI: <https://doi.org/10.19275/RSEPCONFERENCES406>

Abstract

The aim of the paper is to assess the impact of the level of sustainability reporting on the financial performance of Polish public companies. Using a sample of 135 large public-interest entities listed on the Warsaw Stock Exchange, we conduct manual content analysis of companies' sustainability disclosures according to the requirements of Corporate Sustainability Reporting Directive and construct three disclosure indices that quantify the extent and detail of reported information: one that focuses on required narrative information, another on key performance indicators, and a combined index. We measure the financial performance of companies by means of return on assets, return on sales and return on equity ratios and valuation ratios, i.e. price-to-earnings (PE) and price-to-book value (PBV). To examine the relationship between the level of sustainability reporting and financial performance of companies, regression models were estimated using the Least Absolute Deviations regression models. The results indicate that the overall level of sustainability reporting had a negative relationship with price-to-book value and return on equity. Regarding individual disclosure dimensions, a higher extent of KPI disclosures and a higher extent and quality of narrative disclosures resulted in lower ROE.

Keywords: CSRD, sustainability reporting, return on equity, price-to-book value

Jel codes: M41, Q01

1. Introduction

In recent years, sustainability considerations have become an increasingly important component of corporate reporting. Companies are expanding the amount of non-financial information they provide, driven by changing expectations of capital market participants, regulatory developments, and demands for greater corporate accountability. Although sustainability (or environmental, social and governance – ESG) reporting is becoming an important element of corporate transparency, the extent and quality, including readability, detail and reliability of such disclosures differ significantly across companies (Bini et al., 2023; Godawska and Rymkiewicz, 2025). Existing research provides mixed evidence on whether sustainability reporting contributes to improved financial outcomes, with studies identifying positive (Caglio et al., 2019; Vitale et al., 2023), negative (Nugrahani et al., 2022; Gupta, 2026), or statistically insignificant effects (Buallay and Al Marri, 2022; Ozata Canli and Sercemeli, 2026). These inconsistent findings indicate that the relationship between sustainability disclosure and corporate financial performance remains an open area for further research.



The articles on the RSEP Conferences website are bear Creative Commons Licenses either CC BY or CC BY-NC-ND licenses that allow the articles to be immediately, freely, and permanently available on-line for everyone to read, download, and share.

The aim of the paper is to assess the impact of the level of sustainability reporting on the financial performance of Polish public companies.

This study contributes to the literature on the relationship between sustainability reporting and corporate financial performance in two important ways. First, it examines sustainability disclosures prepared in accordance with the Corporate Sustainability Reporting Directive (CSRD), whereas prior studies have primarily focused on reporting frameworks such as the Non-Financial Reporting Directive (NFRD) (Akin and Akin, 2026; Radu et al., 2023), the Global Reporting Initiative (Loprevite et al., 2020), integrated reporting (Soriya and Rastogi, 2023; Agarwall et al., 2025), and other voluntary sustainability reporting frameworks (Eccles et al., 2014; Su et al., 2025). Second, unlike most previous research, which has concentrated on the overall extent or narrative quality of sustainability reporting, this study also investigates KPI-based disclosures. Such quantitative sustainability disclosures remain relatively underexplored in the existing literature.

The paper proceeds as follows. The next section reviews the existing literature on the relationship between sustainability reporting and firms' financial performance. The following section describes the research methodology adopted in this study. Subsequently, the empirical findings are presented and discussed, leading to the final conclusions.

2. Literature Review

The literature often explains the linkage between sustainability (ESG) reporting and firm performance with stakeholder theory, legitimacy theory, and signaling theory. According to the stakeholder theory firms must consider the interests of shareholders and other stakeholders; Sustainability disclosure helps communicate with them and build trust. This reporting can improve performance through reputation, competitive advantage, access to finance, and stronger stakeholder engagement (Alsayegh et al. 2020; Sani et al., 2020). Legitimacy theory assumes that firms provide sustainability disclosure to show they are acting in line with social norms and to preserve or repair legitimacy. Sustainability reporting may raise performance by protecting reputation (Sehgal et al., 2023). According to signaling theory, ESG disclosure sends a signal about true quality, commitment, or future prospects. Transparent, higher-quality ESG disclosure can raise investor confidence, valuation, liquidity, and market reactions (Papoutsis and Sodhi, 2020).

Numerous empirical studies have investigated the impact of sustainability reporting, including ESG and CSR reporting, on firms' financial performance. While the empirical evidence remains mixed, a significant share of the literature documents a positive association between sustainability reporting and corporate financial performance.

Using data from publicly listed firms across eight European Union countries, the study by Akin and Akin (2026) examines the effects of mandatory ESG disclosure introduced under the EU Non-Financial Reporting Directive on corporate financial outcomes. The findings indicate that compulsory ESG reporting improves earnings quality and reduces firms' cost of capital, with these effects being particularly pronounced among larger companies, which appear to benefit more from increased transparency. A positive impact of sustainability (ESG) reporting on financial performance has also been documented by other studies. Specifically, positive effects have been reported for return on assets (ROA) (Savić and Bonić, 2022; Siwiec and Karkowska, 2024; Treepongkaruna and Suttipun, 2026); for return on equity (ROE) (Treepongkaruna and Suttipun, 2026; Grassa et al., 2026; Vitale et al., 2023), for return on sales (ROS) (Vitale et al., 2023; Rudolph and Aliamutu, 2026), earnings per share (Sunny and Apsara, 2024), market valuation (Caglio et al., 2019), price-to-book-value (PBV) (Titisiari et al., 2019; Pratama et al., 2026), price earnings ratio (PE) (Titisiari et al., 2019), Tobin's Q (Yu et al., 2018; Titisiari et al., 2019), and lowering default risk (Do and Vo, 2023, Kazyte et al., 2026).

In contrast to studies documenting positive effects of sustainability reporting, Gupta (2026) found a negative relationship between sustainability disclosures and future financial performance (ROA and ROE) in the banking sector. Based on a sample of listed banks from 15 countries, the author showed that environmental and social disclosures were associated with lower performance. The study further highlighted that this relationship was influenced by country-level factors, including economic development, investor protection, creditor rights, and monitoring mechanisms. The study by Ozata Canli and Sercemeli (2026) revealed the negative impact of environmental disclosures on ROA and ROE using a sample of the 100 largest publicly traded energy firms worldwide by market capitalization. Based on a sample of companies publishing sustainability reports in 2015–2019, Nugrahani et al. (2022) demonstrated that economic and environmental sustainability disclosures were negatively related to ROA, while social disclosures had no significant effect on financial performance. Similarly, Yan et al. (2026) found that voluntary ESG reporting was negatively associated with firm performance among Chinese food and beverage firms, as measured by ROA, ROE, and Tobin's Q. However, the negative effect was reversed for companies with above-industry-average ESG performance, indicating that the financial benefits of ESG reporting may depend on the actual quality of sustainability practices rather than disclosure alone. Fatemi et

al. (2018) also demonstrates the negative impact of ESG information disclosure on company valuation. The negative impact of ESG reporting on the valuation of public companies listed on the WSE, measured by the EV/EBITDA ratio, was demonstrated by Koralun-Bereźnicka and Orcholski (2025).

The empirical evidence also includes studies reporting no significant relationship between sustainability (ESG) reporting and corporate financial performance. For instance evidence from the telecommunications and IT sectors indicates that ESG disclosure is not significantly associated with either return on assets or return on equity (Buallay and Al Marri, 2022). Similar results for governance disclosure and ROA and ROE in the energy sector were reported by Ozata Canli and Sercemeli (2026). Using a sample of Indian pharmaceutical firms, Chakraborty et al. (2026) found that overall ESG reporting did not affect market performance, as measured by Tobin's Q. However, social disclosures had a positive effect on this indicator. Al-Hawaj et al. (2023) showed that the level of sustainability reporting had no significant effect on return on equity or Tobin's Q in the energy sector across countries at different stages of economic development.

Some studies find the relationship between sustainability reporting and corporate financial performance is conditional: effects vary by industry, country, stakeholder pressure, and firm characteristics (Bansal et al., 2021; Prashar, 2023; Elmanaseer and Gerged, 2025; Silvia, 2026). Evidence also suggests that the relationship between sustainability reporting and firm performance is influenced by the broader macroeconomic environment. In particular, CSR disclosures may be associated with weaker future financial performance during periods of economic crisis, especially for firms with low profitability and certain governance characteristics, whereas these adverse effects are less evident under normal economic conditions (Al-Dah et al., 2018).

The relationship between sustainability reporting and financial performance is heterogeneous and appears to depend, in some settings, on the type of disclosure and the specific ESG pillar. In particular, environmental, social, and governance disclosures do not necessarily have uniform effects on corporate financial outcomes. Buallay (2019) analyzed the relationship between ESG reporting and the financial performance of European banks over the period 2007–2016 and found that environmental disclosure had a positive impact on both ROA and Tobin's Q. Meanwhile, corporate governance disclosure was negatively related to ROA and ROE but contributed positively to Tobin's Q. In contrast, social disclosure had a negative effect on all three measures of financial performance. Similarly, Conca et al. (2021), based on an analysis of 57 publicly listed European agri-food companies observed between 2010 and 2018, reported that more extensive environmental and social disclosure was linked to higher corporate profitability. At the same time, a greater level of governance-related disclosure was found to be associated with a lower market value of the companies. Evidence from a study conducted by Lawrence et al. (2025), based on data from 76 Nigerian listed companies over the period 2010–2023, indicates that different dimensions of sustainability reporting have distinct effects on corporate liquidity. The findings showed that governance disclosure had a positive influence on liquidity, whereas economic, environmental, and social disclosures were associated with lower liquidity levels. According to the authors, these results suggest that while governance reporting may enhance financial discipline and improve resource management, greater disclosure in the economic, environmental, and social dimensions can generate short-term costs that reduce firms' liquidity. Examining non-financial firms during the COVID-19 and post-pandemic periods, Angela and Rusmanto, (2025) showed that only governance disclosure was positively associated with ROE and PBV during the pandemic, whereas environmental and social disclosures were insignificant throughout the study period. The effect of governance disclosure on financial performance was no longer significant in the post-pandemic period. However, the study by Kasbun et al. (2016) on Malaysian listed companies found positive relationships between economic, social, and environmental sustainability reporting and both ROA and ROE, suggesting that all sustainability dimensions contributed similarly to financial performance.

Many studies directly examine narrative sustainability/ESG disclosure against firm performance (e.g. Caglio et al., 2020; Huang et al., 2025; Nguyen et al., 2025; Zhang et al., 2025; Grassa et al., 2026). However, the literature on the quality and extent of standalone sustainability KPI reporting is relatively sparse (Tannuri and van Bellen, 2014; Bayne and Wee, 2019; Bini et al., 2023) and the linkages between KPI disclosure and corporate financial performance remain underdeveloped. Direct empirical evidence on this relationship is particularly limited. One of the few studies explicitly addressing this issue is Savić and Bonić (2022), who examined 60 European energy companies over the period 2012–2020. Using nine environmental sustainability KPIs disclosed in GRI-based sustainability reports, the authors investigated whether reporting these indicators influenced corporate profitability, measured by return on assets. Their findings indicate that more extensive reporting of environmental performance KPIs had a positive effect on profitability. Other studies examining sustainability KPI disclosures have primarily focused on their informational value, treating KPIs as performance signals that provide incremental information to stakeholders rather than directly assessing their impact on corporate financial outcomes (e.g., Givoly et al., 2019).

To the best of the authors' knowledge, the literature does not provide evidence of CSRD-specific empirical research examining the relationship between the extent and/or quality of sustainability reporting and financial performance. Although Li et al. (2026) analyze the impact of the CSRD on firms' financial performance, their study evaluates the effect of the implementation of the Directive itself, rather than differences in the extent, quality, or completeness of CSRD disclosures. Other studies focus on integrated reporting, NFRD/mandatory non-financial reporting, voluntary CSR/ESG reporting, Sustainable Development Goals reporting and GRI-based sustainability reporting (Charumathi and Ramesh, 2017; Li et al., 2018; Caglio et al., 2020; Savić and Bonić, 2022; Do and Vo, 2023; Vitale et al., 2023; Sun et al., 2023; Cuomo et al., 2024; Angela and Rusmanto, 2025; Bamel et al., 2025; Gupta, 2026; Pratama et al., 2026). There is evidence on Polish firms' CSRD reporting readiness (Godawska and Rymkiewicz, 2025; Macuda and Kobiela-Pionnier, 2025; Szalacha, 2026) and on the ESG activities–financial performance link (Siwiec and Karkowska, 2024), but no study directly examines whether CSRD reporting extent and quality in Polish companies - measured jointly through narrative disclosure, KPI disclosure, and an overall composite index - influences ROA, ROE, and ROS or company valuation measures like PE, and PBV.

Based on the literature review and considering that the majority of studies report a positive relationship between sustainability reporting and financial performance, the following main hypothesis is formulated:

Hypothesis 1: The overall level of sustainability reporting positively influences corporate financial performance.

To examine the separate effects of KPI-based and narrative sustainability disclosures, the following sub-hypotheses are proposed:

Hypothesis 1A: The extent of sustainability KPI disclosure positively influences corporate financial performance

Hypothesis 1B: The extent and quality of narrative sustainability disclosure positively influence corporate financial performance.

3. Data & Methodology

To verify the research hypotheses, a study was conducted on a sample of 135 public companies listed on the WSE. The CSRD is an extension of the previously adopted NFRD directive on non-financial reporting. Therefore, taking into account the concept of absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002), the study used companies that were required to publish reports in accordance with the NFRD in their 2021 reports and that continued to be listed on the WSE until the end of 2024. A total sample of 135 companies was obtained.

To determine companies' level of sustainability reporting in accordance with the CSRD, manual content analysis was used to analyze the company's 2023 annual reports, published in 2024. This type of report was chosen because of its mandatory nature and the fact that, according to the CSRD regulations transposed into the Polish legal system, the sustainability report is to be a separate part of the report. Using the methodology employed by Godawska and Rymkiewicz (2025), three disclosure indices were developed, describing the overall level of companies' sustainability reporting in accordance with the CSRD (ESG_{TOT}), the extent and quality of companies' narrative disclosures (ESG_{NAR}), and the extent of companies' KPI disclosures (ESG_{KPI}). A total of 14 categories of narrative disclosure requirements and 14 categories of KPI disclosures were considered. For each narrative disclosure category, a score of 0 (no presentation), 1 (general disclosures), or 2 (detailed disclosures) could be obtained. In the case of KPI disclosure categories, given their numerical nature, a two-point scale was used, with 0 points indicating no disclosures and 1 indicating the presence of KPI disclosures. The maximum possible score was 42 points, of which 28 for narrative disclosures and 14 for KPI disclosures.

The value of the ESG_{TOT} disclosure index was calculated for each of the surveyed companies as the sum of points obtained in narrative disclosures and KPIs, according to the formula:

$$ESG_{TOT,i} = \left(\sum_{j=1,k=1}^{14} \frac{NAR_{i,j} + KPI_{i,k}}{42} \right) \times 100\%$$

where:

$NAR_{i,j}$ – the score obtained by company i in the j -th category of narrative disclosures, $NAR_{i,j} \in \{0,1,2\}$;

$KPI_{i,k}$ – the score obtained by company i in the k -th category of KPI disclosures, $KPI_{i,k} \in \{0,1\}$;

i – company number;

j, k – the number of the category of narrative disclosures and KPI disclosures, respectively.

The ESG_{NAR} disclosure index was calculated for each of the surveyed companies using the following formula:

$$ESG_{NAR,i} = \left(\sum_{j=1}^{14} \frac{NAR_{i,j}}{28} \right) \times 100\%$$

The value of the ESG_{KPI} disclosure index was calculated for each of the examined companies according to the formula:

$$ESG_{KPI,i} = \left(\sum_{k=1}^{14} \frac{KPI_{i,k}}{14} \right) \times 100\%$$

The ESG_{TOT} , ESG_{NAR} and ESG_{KPI} indices for a given company range from 0% to 100%, where a higher score indicates a company's better level, extent and quality, or extent of sustainability reporting, respectively in accordance with the CSRD directive.

Three profitability ratios were used to describe the company's financial performance: return on assets (ROA), equity (ROE), and sales (ROS), as well as earnings per share (EPS), and two stock market indicators/valuation ratios: price to book value (PBV) and price to earnings (PE). These ratios reflect the company's financial performance in 2024, the year the company's annual reports are published. Financial data for 2024, rather than for the year covered by the report, is intended to demonstrate the company's and investors' reaction to the publication of sustainability information included in the company's annual reports.

Additionally, two control variables, SIZE and DEBT, were used. The SIZE variable describes the company's size in 2023, i.e., the fiscal year for which the report is prepared, expressed as the natural logarithm of the company's assets at the end of the 2023 fiscal year. The DEBT variable, in turn, describes the company's debt level in 2023, expressed as the natural logarithm of the total debt ratio. Furthermore, the ENVIRCS variable was used to describe the environmental sensitivity of the industry in which the company operates.

Basic descriptive statistics for the variables are presented in Table 1.

Table 1. Basic descriptive statistics for variables.

Variable	Mean	Median	Minimum	Maximum
ESG_{TOT}	0,35996	0,35714	0,00000	0,78571
ESG_{NAR}	0,42381	0,42857	0,00000	0,92857
ESG_{KPI}	0,23228	0,21429	0,00000	0,64286
ROS_{2024}	0,66289	0,045569	-3,9429	85,370
ROA_{2024}	-0,092566	0,033527	-6,8917	0,21703
ROE_{2024}	0,049504	0,092546	-3,2332	2,7518
PBV_{2024}	1,7461	0,92000	-0,23000	42,310
PE_{2024}	6,8017	8,4400	-129,59	112,44
EPS_{2024}	12,534	1,7100	-79,740	941,33
$SIZE_{2023}$	14,670	14,251	5,7137	20,021
$DEBT_{2023}$	-0,66782	-0,61055	-3,3873	1,8822
ENVIRCS	0,46667	0,00000	0,00000	1,0000

Variable	Standard Deviation	Coefficient Variation	of Skewness	Kurtosis
ESG _{TOT}	0,19176	0,53272	0,10328	-0,79641
ESG _{NAR}	0,22692	0,53543	0,094387	-0,88466
ESG _{KPI}	0,14437	0,62156	0,44288	-0,00019973
ROS ₂₀₂₄	7,3756	11,126	11,346	127,81
ROA ₂₀₂₄	0,76639	8,2794	-7,1430	54,115
ROE ₂₀₂₄	0,47964	9,6890	-1,7134	23,817
PBV ₂₀₂₄	3,8557	2,2082	8,8593	89,350
PE ₂₀₂₄	22,332	3,2833	-2,1086	17,182
EPS ₂₀₂₄	83,156	6,6344	10,456	114,09
SIZE ₂₀₂₃	2,1635	0,14747	0,20745	1,6034
DEBT ₂₀₂₃	0,55496	0,83100	-0,66667	7,1831
ENVIRCS	0,50075	1,0730	0,13363	-1,9821

Source: own study

Financial data were obtained from bankier.pl and the financial statements of the studied companies. Least Absolute Deviations (LAD or L_1) regression models were used to examine the relationship between the level of companies' sustainability reporting in accordance with the CSRD. The dependent variable was the variable describing the company's financial performance in 2024 (ROS₂₀₂₄, ROA₂₀₂₄, ROE₂₀₂₄, PBV₂₀₂₄, PE₂₀₂₄, EPS₂₀₂₄), and the explanatory variable was the variable describing the level of sustainability reporting in accordance with the CSRD (ESG_{TOT}, ESG_{NAR}, ESG_{KPI}). The models were supplemented with selected control variables (SIZE₂₀₂₃, DEBT₂₀₂₃, ENVIRCS). The general model formula was as follows:

$$FPV_i = \beta_0 + \sum_{j=1}^n \beta_j ESG_k + \sum_{l=n+1}^m \beta_l CV_s + \varepsilon_i$$

where:

FPV_i – variable describing the financial performance of companies in 2024; FPV_i ∈ {ROS₂₀₂₄, ROA₂₀₂₄, ROE₂₀₂₄, PBV₂₀₂₄, PE₂₀₂₄, EPS₂₀₂₄};

ESG_k – variable describing the company's quality and/or extent sustainability reporting in accordance with the CSRD; ESG_k ∈ {ESG_{TOT}, ESG_{NAR}, ESG_{KPI}}, where a given model can use a single variable: ESG_{TOT}, ESG_{NAR}, or ESG_{KPI}, or two variables: ESG_{NAR} and ESG_{KPI} together;

CV_s – control variable; CV_s ∈ {SIZE₂₀₂₃, DEBT₂₀₂₃, ENVIRCS};

β₀, β_j, β_l – model coefficients;

ε_i – random component.

The choice of model is dictated by the model's high robustness to outliers, which is a significant advantage over traditional OLS-based models (Kozłowski and Kowalczyk 2024; Ciuperca 2011). Regression parameters in the LAD method are estimated by minimizing the sum of the absolute value of errors. The LAD estimator is also more efficient than OLS when the error term is not normally distributed but follows a Laplace distribution (Arslan 2012; Herce 1996).

The use of the LAD method is justified because initial regression analyses using the OLS method revealed heteroscedasticity of the models and a non-normal distribution of the residuals.

It should be noted that the LAD model is robust to outliers in the response variable but is relatively sensitive to outlying observations in the explanatory variables, which presents a certain limitation (Dodge 1997). Another problem is the lack of robustness to observations with unusual predictor values (Giloni et al. 2006).

The authors used Gretl software version 2025a for their research.

4. Results

The first step was to examine the relationship between companies' overall level of sustainability reporting in accordance with the CSRD (ESG_{TOT}) and individual variables describing the company's financial situation in 2024. A significant relationship was obtained for two dependent variables, PBV_{2024} and ROE_{2024} . Tables 2-4 present data for the resulting models.

Table 2. Regression analysis results for the model – explanatory variable ESG_{TOT} , dependent variable PBV_{2024} .

$PBV_{2024} = \beta_0 + \beta_1 ESG_{TOT} + \beta_2 SIZE_{2023} + \beta_3 DEBT_{2023} + \varepsilon_i$					
Variable	Coefficient	Standard deviation	t-statistic	p-value	Significance
const	0,450363	0,590030	0,7633	0,4467	
ESG_{TOT}	-0,735090	0,347105	-2,118	0,0361	**
$SIZE_{2023}$	0,0532106	0,0350991	1,516	0,1319	
$DEBT_{2023}$	0,114553	0,159889	0,7165	0,4750	
Median dependent variance		0,920000	Dependent standard deviation		3,855724
Sum of absolute residuals		162,2601	Sum of squared residuals		2097,817
Log likelihood		-253,4049	Akaike information criterion		514,8097
Bayesian Schwarz's criterion		526,4308	Hannan-Quinn criterion		519,5322
*** significance level at 1%; ** significance level at 5%; * significance level at 10%					

Source: own study

Table 3. Regression analysis results for the model – explanatory variable ESG_{TOT} , dependent variable ROE_{2024} .

$ROE_{2024} = \beta_0 + \beta_1 ESG_{TOT} + \beta_2 SIZE_{2023} + \beta_3 DEBT_{2023} + \varepsilon_i$					
Variable	Coefficient	Standard deviation	t-statistic	p-value	Significance
const	0,0161175	0,154792	0,1041	0,9172	
ESG_{TOT}	-0,122983	0,0698290	-1,761	0,0805	*
$SIZE_{2023}$	0,00837317	0,00891128	0,9396	0,3491	
$DEBT_{2023}$	-0,00118880	0,0438365	-0,02712	0,9784	
Median dependent variance		0,092546	Dependent standard deviation		0,479643

Sum of absolute residuals	27,41668	Sum of squared residuals	30,79569
Log likelihood	-13,36824	Akaike information criterion	34,73648
Bayesian Schwarz's criterion	46,35758	Hannan-Quinn criterion	39,45897

*** significance level at 1%; ** significance level at 5%; * significance level at 10%

Source: own study

Table 4. Regression analysis results for the model – explanatory variable ESG_{TOT} , dependent variable ROE_{2024} .

$$ROE_{2024} = \beta_0 + \beta_1 ESG_{TOT} + \beta_2 SIZE_{2023} + \beta_3 DEBT_{2023} + \beta_4 ENVIRCS + \varepsilon_i$$

Variable	Coefficient	Standard deviation	t-statistic	p-value	Significance
const	0,0155436	0,160298	0,09697	0,9229	
ESG_{TOT}	-0,175008	0,0898880	-1,947	0,0537	*
$SIZE_{2023}$	0,0108737	0,00908631	1,197	0,2336	
$DEBT_{2023}$	-0,000258798	0,0426431	-0,006069	0,9952	
ENVIRCS	-0,0374721	0,0267866	-1,399	0,1642	
Median dependent variance	0,092546	Dependent standard deviation	0,479643		
Sum of absolute residuals	27,23266	Sum of squared residuals	30,38769		
Log likelihood	-12,45906	Akaike information criterion	34,91812		
Bayesian Schwarz's criterion	49,44449	Hannan-Quinn criterion	40,82123		

*** significance level at 1%; ** significance level at 5%; * significance level at 10%

Source: own study

The obtained results show that companies' level of sustainability reporting in accordance with the CSRD (ESG_{TOT}) significantly affects the price-to-book value ratio in 2024 (PBV_{2024}) at a significance level of 5%, and also, at a significance level of 10%, the return on equity in 2024 (ROE_{2024}). Interestingly, in both cases, this is a negative correlation, indicating that a higher level of 2023 sustainability reporting was associated with a lower median result for the indicated financial and stock market indicators in the year of publication. At the same time, the adopted control variables proved statistically insignificant.

Therefore, Hypothesis 1, stating that the overall level of sustainability reporting positively influences corporate financial performance, was not supported.

Next, the focus was on examining the relationships between the components of the variable describing companies' level sustainability reporting in accordance with the CSRD directive, i.e., narrative disclosures (ESG_{NAR}) and KPI disclosures (ESG_{KPI}), and individual variables describing the company's financial performance in 2024. None of the models containing two of these variables simultaneously demonstrated a significant relationship with the assumed dependent variables describing the entity's financial situation.

Therefore, regression models were developed using a single ESG_{NAR} or ESG_{KPI} variable as the explanatory variable. Statistically significant relationships were obtained in both models. The tables 5-6 present data for the resulting models.

Table 5. Regression analysis results for the model – explanatory variable ESG_{KPI} , dependent variable ROE_{2024} .

$$PBV_{2024} = \beta_0 + \beta_1 ESG_{KPI} + \beta_2 SIZE_{2023} + \beta_3 DEBT_{2023} + \beta_4 ENVIRCS + \varepsilon_i$$

Variable	Coefficient	Standard deviation	t-statistic	p-value	Significance
const	1,30597	0,784396	1,665	0,0983	*
ESG _{KPI}	-0,887711	0,490936	-1,808	0,0729	*
SIZE ₂₀₂₃	0,0117849	0,0409395	0,2879	0,7739	
DEBT ₂₀₂₃	0,231489	0,201112	1,151	0,2518	
ENVIRCS	-0,333003	0,211982	-1,571	0,1186	
Median dependent variance		0,920000	Dependent standard deviation		3,855724
Sum of absolute residuals		159,7666	Sum of squared residuals		2075,746
Log likelihood		-251,3142	Akaike information criterion		512,6283
Bayesian Schwarz's criterion		527,1547	Hannan-Quinn criterion		518,5314

*** significance level at 1%; ** significance level at 5%; * significance level at 10%

Source: own study

Table 5. Regression analysis results for the model – explanatory variable ESG_{NAR}, dependent variable ROE₂₀₂₄.

$$ROE_{2024} = \beta_0 + \beta_1 ESG_{NAR} + \beta_2 SIZE_{2023} + \beta_3 DEBT_{2023} + \beta_4 ENVIRCS + \varepsilon_i$$

Variable	Coefficient	Standard deviation	t-statistic	p-value	Significance
const	0,0356313	0,168641	0,2113	0,8330	
ESG _{NAR}	-0,150938	0,0717262	-2,104	0,0373	**
SIZE ₂₀₂₃	0,0100260	0,00957225	1,047	0,2969	
DEBT ₂₀₂₃	0,00297878	0,0412088	0,07229	0,9425	
ENVIRCS	-0,0370907	0,0287373	-1,291	0,1991	
Median dependent variance		0,092546	Dependent standard deviation		0,479643
Sum of absolute residuals		27,25023	Sum of squared residuals		30,41036
Log likelihood		-12,54615	Akaike information criterion		35,09231
Bayesian Schwarz's criterion		49,61868	Hannan-Quinn criterion		40,99542

*** significance level at 1%; ** significance level at 5%; * significance level at 10%

Source: own study

The obtained results show that the level of corporate sustainability reporting in accordance with the CSRD regarding KPI disclosures (ESG_{KPI}) significantly affects the price-to-book value ratio in 2024 (PBV₂₀₂₄) at a 10%

significance level. This relationship is also negative in this case. The adopted control variables proved statistically insignificant. Therefore, Hypothesis 1A, which assumed a positive relationship between the extent of sustainability KPI disclosure and corporate financial performance, was not supported.

In turn, the level of corporate sustainability reporting in accordance with the CSRD directive regarding narrative disclosures (ESG_{NAR}) affects the return on equity in 2024 (ROE_{2024}) at a 5% significance level. Similar to the results obtained in other models, this relationship was also negative. The control variables included in the analysis did not reach statistical significance. Accordingly, Hypothesis 1B, proposing a positive effect of the extent and quality of narrative sustainability disclosure on corporate financial performance, was not confirmed.

5. Conclusions

The results of this study indicate that the level of sustainability reporting in accordance with the CSRD requirements was negatively associated with corporate financial performance. Statistically significant relationships were identified for models using PBV and ROE as dependent variables, showing that companies with a higher overall level of sustainability disclosure reported lower values of these financial performance measures in the year of publication of the report, i.e. 2024. Therefore, the findings do not support the assumption that higher level of sustainability reporting is positively related to corporate financial performance. Similarly, analysis of individual types of disclosures, i.e., KPIs and narratives, revealed a negative relationship with financial performance measures.

The negative relationship identified in this study is consistent with previous empirical evidence reporting adverse effects of sustainability disclosure on financial performance indicators. In particular, the negative association between sustainability reporting and ROE corresponds with findings reported by Gupta (2026) and Ozata Canli and Sercemeli (2026) and Yan et al. (2026). However, in contrast to the findings of Titisari et al. (2019) and Pratama et al. (2026), who reported a positive relationship between sustainability reporting and price-to-book value, this study identified a negative association between the level of sustainability reporting and PBV. The negative impact of sustainability reporting on company value is consistent with the findings of Fatemi et al. (2018).

One possible explanation for the negative relationship observed in this study is that a higher level of sustainability disclosure may be associated with increased reporting complexity and greater resource requirements related to the preparation, verification, and management of non-financial information. Additionally, extensive disclosure may reflect companies' responses to regulatory and stakeholder expectations rather than improvements in operational performance directly translated into financial results. It should be noted that this study examines the extent and quality of sustainability disclosures rather than the actual sustainability performance of companies. Therefore, a higher level of reporting should be interpreted as a greater scope of disclosed information and does not necessarily indicate superior sustainability outcomes.

Another possible explanation relates to the regulatory context of the study. The analysis covers sustainability disclosures prepared for 2023, when the CSRD requirements had been introduced but were not yet fully applicable to all analyzed companies. Therefore, sustainability reporting practices may have reflected an early stage of adaptation to new regulatory expectations. In such a context, extensive disclosures may not have been fully integrated into companies' strategic processes or recognized by capital market participants as a source of additional value.

The negative impact of sustainability reporting on company valuation metrics may stem from investors' negative attitudes toward increasing transparency and allocating resources to the reporting process. This may be due, in particular, to concerns about the high costs of sustainability reporting (Zang et al., 2026). The observed relationship may also be due to the disclosure of negative sustainability information in reports, which allows for a better understanding of the company's operations and its impact on the environment and deters some investors.

This study is not free from limitations. First, the study is limited by its cross-sectional design and the analysis of sustainability disclosures from a single reporting period. Therefore, the results reflect the relationship between disclosure levels and financial performance in a specific institutional and economic context and do not capture changes over time. Future research could extend the analysis by applying a longitudinal approach to examine whether the relationship between sustainability reporting and financial performance changes as companies gain experience with CSRD-related disclosure requirements.

Second, the study evaluates the extent and quality of disclosed sustainability information rather than the actual sustainability performance of companies. Future studies could combine disclosure-based measures with

operational ESG performance indicators to examine whether substantive sustainability improvements, rather than disclosure intensity alone, are associated with financial outcomes.

Funding: The research and publication were financed by a subsidy to the AGH University of Krakow and the "Excellence Initiative - Research University" project at AGH.

References

- Akin, I., & Akin, M. (2026). Mandated ESG disclosure and its effects on earnings quality and cost of capital: evidence from European stock markets. *Corporate Social Responsibility and Environmental Management*, 33(2), 2196–2209. <https://doi.org/10.1002/csr.70280>
- Agarwall, H., Shekhar, S., & Jena, N. (2025). Interplay Between Integrated Reporting, Firm Performance and Valuation: An Empirical Assessment of Indian Firms. *Advances in Consumer Research*, 2(2), 423–433
- Al-Dah, B. Dah, M., & Jizi, M. (2018). Is CSR reporting always favorable? *Management Decision*, 56 (7), 1506–1525. <https://doi.org/10.1108/MD-05-2017-0540>
- Al-Hawaj, A., Buallay, A., & Abdallah, W. (2023). Sustainability reporting and energy sectorial performance: developed and emerging economies. *International Journal of Energy Sector Management*, 17(4), 739–760. <https://doi.org/10.1108/IJESM-10-2020-0020>
- Alsayegh, M.F., Abdul Rahman, R.A., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. *Sustainability*, 12(9), 3910, <https://doi.org/10.3390/su12093910>
- Angela, T., & Rusmanto, T. (2025). The effect of ESG disclosure and media exposure on profitability and firm value: Evidence from Indonesia. *International Journal of Sustainable Development and Planning*, 20(10), 4429–4442. <https://doi.org/10.18280/ijstdp.201030>
- Arslan, O. (2012). Weighted LAD-LASSO method for robust parameter estimation and variable selection in regression. *Computational Statistics & Data Analysis*, 56(6), 1952–1965. <https://doi.org/10.1016/j.csda.2011.11.022>
- Bamel, N., Khatri, K., Bamel, U., & Kumar, S. (2025). ESG disclosure and firm performance in global south economy: Does industry profile and board independence moderate the relationship. *International Review of Economics and Finance*, 100, 104093. <https://doi.org/10.1016/j.iref.2025.104093>
- Bansal, M., Samad, T.A., & Bashir, H.A. (2021). The sustainability reporting-firm performance nexus: evidence from a threshold model. *Journal of Global Responsibility*, 12 (4), 491–512. <https://doi.org/10.1108/JGR-05-2021-0049>
- Bayne, L., & Wee, M. (2019). Non-financial KPIs in annual report narratives: Australian practice. *Accounting Research Journal*, 32 (1), 7–19. <https://doi.org/10.1108/ARJ-02-2018-0033>
- Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30 (1): 98–115. <https://doi.org/10.1108/MEQ-12-2017-0149>
- Buallay, A., & Al Marri, M. (2022). Sustainability disclosure and its impact on telecommunication and information technology sectors' performance: worldwide evidence. *International Journal of Emergency Services*, 11(3), 379–395. <https://doi.org/10.1108/IJES-08-2021-0054>
- Bini, L., Giunta, F., Miccini, R., & Simoni, L. (2023). Corporate governance quality and non-financial KPI disclosure comparability: UK evidence. *Journal of Management and Governance*, 27, 43–74, <https://doi.org/10.1007/s10997-021-09608-3>
- Caglio, A., Melloni, G., & Perego, P. (2020). Informational content and assurance of textual disclosures: Evidence on integrated reporting. *European Accounting Review*, 29(1), 55–83. <https://doi.org/10.1080/09638180.2019.1677486>
- Chakraborty, J., Nagina, R., Paruthi, M., Saran, R., & Salam, F. (2026). Sustainability Disclosure and Firm Value: A Panel Analysis of Indian Pharmaceutical Companies. *Journal of Applied Economic Sciences*, Volume XXI, Spring, Issue, 2(92), 495– 513. [https://doi.org/10.57017/jaes.v21.2\(92\).06](https://doi.org/10.57017/jaes.v21.2(92).06)
- Charumathi, B., & Ramesh, L. (2017). Do Social and Environmental Disclosures Increase Firm Value ? Evidence from Indian Companies. *Indian Journal of Finance*, 11(4), 23–38. <https://doi.org/10.17010/ijf/2017/v11i4/112628>
- Ciuperca, G. (2011). Estimating nonlinear regression with and without change-points by the LAD method. *Annals of the Institute of Statistical Mathematics*, 63, 717–743. <https://doi.org/10.1007/s10463-009-0256-y>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2307/2393553>

- Conca L., Manta F., & Morrone D., & Toma, P. (2021). The impact of direct environmental, social, and governance reporting: Empirical evidence in European-listed companies in the agri-food sector. *Business Strategy and the Environment*, 30, 1080–1093, <https://doi.org/10.1002/bse.2672>
- Cuomo, F., Gaia, S., Girardone, C., & Piserà, S. (2024). The effects of the EU non-financial reporting directive on corporate social responsibility. *European Journal of Finance*, 30(7), 726–752. <https://doi.org/10.1080/1351847X.2022.2113812>
- Do, T.K., & Vo, X.V. (2023) Is mandatory sustainability disclosure associated with default risk? Evidence from emerging markets. *Finance Research Letters*, 55, 103818. <https://doi.org/10.1016/j.frl.2023.103818>
- Dodge, Y. (1997). LAD Regression for Detecting Outliers in Response and Explanatory Variables. *Journal of Multivariate Analysis*, 61(1), 144–158. <https://doi.org/10.1006/jmva.1997.1666>
- Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. *Management Science*, 60(11), 2835–2857. <http://www.jstor.org/stable/24550546>
- Elmanaseer, M., & Gerged, A. (2025). How Do Institutional Pressures Reshape the Association Between Corporate Sustainability Disclosure and Firm Value in Emerging Economies? The Moderating Role of the Audit Committee Function. *Business Strategy and the Environment*. 34(6), 7253–7283. <https://doi.org/10.1002/bse.4340>
- Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, 38, 45–64. <https://doi.org/10.1016/j.gfj.2017.03.001>
- Giloni, A., Simonoff, J.S., & Sengupta, B. (2006). Robust weighted LAD regression. *Computational Statistics & Data Analysis*, 50(11), 3124–3140. <https://doi.org/10.1016/j.csda.2005.06.005>
- Givoly, D., Li, Y., Lourie, B., & Nekrasov, A. (2019). Key performance indicators as supplements to earnings: Incremental informativeness, demand factors, measurement issues, and properties of their forecasts. *Review of Accounting Studies*, 24, 1147–1183. <https://doi.org/10.1007/s11142-019-09514-y>
- Godawska, J., & Rymkiewicz, B. (2025). Warsaw Stock Exchange-listed companies' preparedness for sustainability reporting in accordance with Directive (EU) 2022/2464. An examination of management reports. *Zeszyty Teoretyczne Rachunkowości*, 49(2), 37 – 61, <https://doi.org/10.5604/01.3001.0055.1486>
- Grassa, R., ElHout, R., Rafiee, R., Hassan, O. Y., & Al Suwaidi, S.H. (2026). Do companies benefit from publishing sustainability-integrated reports? Evidence from the United Arab Emirates. *Management and Sustainability: An Arab Review*, 5(1), 1–21. <https://doi.org/10.1108/MSAR-05-2024-0032>
- Gupta, M. (2026). Unveiling the impact of sustainability reporting on banking performance: Role of country-specific determinants. *Journal of Economics and Business*, 138, 106246 <https://doi.org/10.1016/j.jeconbus.2025.106246>
- Herce, M.A. (1996). Asymptotic Theory of LAD Estimation in a Unit Root Process with Finite Variance Errors. *Econometric Theory* 12(1), 129–153. <https://doi.org/10.1017/S0266466600006472>
- Huang, J., Hu, P., Wang, D.D., & Wang, Y. (2025). The Double Signal of ESG Reports: Readability, Growth, and Institutional Influence on Firm Value. *Sustainability*, 17(6), 2514, <https://doi.org/10.3390/su17062514>
- Kasbun, N. F., Teh, B. H., & San Ong, T. (2016). Sustainability reporting and financial performance of Malaysian public listed companies. *Institutions and Economies*, 8(4), 78 – 93.
- Kazyte, A., Krusna, R., & Sapkauskienė, A. (2026). From ESG disclosure to credit risk: evidence from European firms, *Journal of Financial Reporting and Accounting* 24(4), 1828–1850. <https://doi.org/10.1108/JFRA-05-2025-0443>
- Koralun-Bereźnicka, J., & Orcholski, T. (2025). The role of ESG factors in creating corporate value: evidence from Polish public companies. *Optimum. Economic Studies*, 2(120), 399–416. <https://doi.org/10.15290/oes.2025.02.120.20>
- Kozłowski, J., & Kowalczyk, Z. (2024), Smooth least absolute deviation estimators for outlier-proof identification, *Mechanical Systems and Signal Processing*, 216, 111455. <https://doi.org/10.1016/j.ymssp.2024.111455>
- Lawrence, M. T., Akinyomi, J., & Akinwumi, T.T. (2025). Sustainability Reporting and Liquidity Position of Listed Firms in Nigeria, *Journal of Risk Analysis and Crisis Response*, 15(4), 712–725, <https://doi.org/10.54560/jracr.v15i4.709>
- Li, J., Zhao, T., & Taghizadeh-Hesary, F. (2026). Impact of EU corporate sustainability reporting directive on financial performance: evidence from companies. *Journal of Risk Finance*, 27 (2), 221–239. <https://doi.org/10.1108/JRF-01-2025-0008>
- Li, Y., Gong, M., Zhang, X.-Y., & Koh, L. (2018). The impact of environmental, social, and governance disclosure on firm value: The role of CEO power. *The British Accounting Review*, 50(1), 60–75. <https://doi.org/10.1016/j.bar.2017.09.007>
- Loprevite, S., Raucci, D., & Rupo, D. (2020). KPIs Reporting and Financial Performance in the Transition to Mandatory Disclosure: The Case of Italy. *Sustainability*, 12, 5195. <https://doi.org/10.3390/su12125195>

- Macuda, M., & Kobiela-Pionnier, K. (2025). The double materiality principle and the sustainability reporting practices of Polish listed companies from the WIG30 Index. *Zeszyty Teoretyczne Rachunkowości*, 49(2), 63-97, <https://doi.org/10.5604/01.3001.0055.1487>
- Nguyen, T.H., Vu, L.P.T., Mai, A.N., & Tran, T.Q. (2025). Do narrative-related disclosures in the annual report enhance firm value? New evidence from an emerging market. *International Review of Financial Analysis*, 102, 104077, <https://doi.org/10.1016/j.irfa.2025.104077>
- Nugrahani, T.S., & Artanto, D.A. (2022). Sustainability Reporting by Disclosing Economic, Social and Environmental Performance. *Studies in Business and Economics*, 17(2), 216 – 226, <https://doi.org/10.2478/sbe-2022-0034>
- Ozata Canli, S. N., & Sercemeli, M. (2026). The impact of environmental, social and governance (ESG) disclosures on corporate financial performance in the energy sector. *International Journal of Energy Sector Management*, 20(2), 423-447. <https://doi.org/10.1108/IJESM-09-2024-0039>
- Papoutsis, A., & Sodhi, M.S. (2020). Does disclosure in sustainability reports indicate actual sustainability performance?. *Journal of Cleaner Production*, 260, 121049, <https://doi.org/10.1016/j.jclepro.2020.121049>
- Prashar, A. (2023) Moderating effects on sustainability reporting and firm performance relationships: a meta-analytical review. *International Journal of Productivity and Performance Management*, 72 (4), 1154–1181 <https://doi.org/10.1108/IJPPM-04-2021-0183>
- Pratama, A., Tanzil, N. D., Koeswayo, P. S., Muhammad, K., & Megawati, L. R. (2026). Sustainable Development Goal (SDG) Disclosure and Firm Value: Empirical Evidence from Southeast Asia. *Journal of Risk and Financial Management*, 19(6), 413. <https://doi.org/10.3390/jrfm19060413>
- Radu, O.M., Dragomir, V.D., & Hao, N. (2023). Company-Level Factors of Non-Financial Reporting Quality under a Mandatory Regime: A Systematic Review of Empirical Evidence in the European Union. *Sustainability*, 15, 16265. <https://doi.org/10.3390/su152316265>
- Rudolph, M. L., & Aliamutu, K. (2026). Integrated Reporting and Corporate Profitability: Evidence from Manufacturing Firms in South Africa. *International Review of Management and Marketing*, 16(5), 221–229. <https://doi.org/10.32479/irmm.23679>
- Sani, N.F.A., Muda, R., Arshad, R., & Nair, R. (2020). The influence of environmental, social, governance factors and firm performance on the sustainable reporting of Malaysian companies. *International Journal of Economics and Business Research*. 20(4), 407-424. <https://doi.org/10.1504/IJEER.2020.111100>
- Savić, A., & Bonić, L. (2022). Analysis of the impact of reporting on environmental performance indicators on the profitability of European companies, *Facta Universitatis*, 19(3), 167-182, <https://doi.org/10.22190/FUEO220529013S>
- Sehgal, V., Garg, N., & Singh, J. (2023). Impact of sustainability reporting and performance on organization legitimacy. *International Journal of System Assurance Engineering and Management*, 14, 143–153. <https://doi.org/10.1007/s13198-022-01830-y>
- Silvia, M. (2026). Unpacking ESG value creation: a global, multi-context meta-analysis of financial and non-financial performance. *Cogent Business and Management*, 13(1). <https://doi.org/10.1080/23311975.2026.2667566>
- Siwec, K., & Karkowska, R. (2024) Relationship between ESG and Financial Performance of Companies in the Central and Eastern European Region. *Central European Economic Journal*, 11(58), 178-199. <https://doi.org/10.2478/ceej-2024-0013>
- Soriya S, & Rastogi P (2023). The impact of integrated reporting on financial performance in India: a panel data analysis. *Journal of Applied Accounting Research*, 24(1), 199–216, <https://doi.org/10.1108/JAAR-10-2021-0271>
- Su, W., Zhang, M., & Han, P. (2025). The Impact of Negative ESG Disclosure on Firm Value: Enhancing or Diminishing? *Sage Open*, 15(4).
- Sun, Y., Xu, C., Ding, R., & Cao, Y. (2023) Does innovation in environmental, social, and governance disclosures pay off in China? An integrated reporting perspective. *Borsa Istanbul Review*, 23(3), 600-613. <https://doi.org/10.1016/j.bir.2023.01.001>
- Sunny, S. A., & Apsara, F. A. (2024). Impact of Sustainability Reporting on Financial Performance: Evidence from an Emerging Economy. *Journal of Risk Analysis and Crisis Response*, 14(4), 489-501. <https://doi.org/10.54560/jracr.v14i4.559>
- Szalacha, P. (2026). Climate-related financial effects: Disclosure challenges after Corporate Sustainability Reporting Directive implementation. *Zeszyty Teoretyczne Rachunkowości*, 50(1), 173-194, <https://doi.org/10.5604/01.3001.0055.6637>
- Tannuri, G., & van Bellen, H.M. (2014). Environmental performance indicators shown in the reporting of sustainability: An analysis of the light of quality attributes. *Revista de Gestao Social e Ambiental*, 8(1), 2-19. <https://www.scopus.com/pages/publications/84907911201>

- Titisari, K. H., Moeljadi, M., Ratnawati, K., & Indrawati, N. K. (2019). The roles of cost of capital, corporate governance, and corporate social responsibility in improving firm value: Evidence from Indonesia. *Investment Management and Financial Innovations*, 16(4), 28-36. [http://dx.doi.org/10.21511/imfi.16\(4\).2019.03](http://dx.doi.org/10.21511/imfi.16(4).2019.03)
- Treepongkaruna S., & Suttipun, M. (2026). The impact of environmental, social and governance (ESG) reporting on corporate profitability: evidence from Thailand, *Journal of Financial Reporting and Accounting*, 24(2), 815–841, <https://doi.org/10.1108/JFRA-09-2023-0555>
- Vitale, G., Cupertino, S., & Riccaboni, A. (2023). The effects of mandatory non-financial reporting on financial performance. A multidimensional investigation on global agri-food companies. *British Food Journal*, 125 (13), 99–124, <https://doi.org/10.1108/BFJ-06-2022-0545>
- Yan, H., Mishra, A. K., & Zhou, X. (2026). Do All Food and Beverage Firms Benefit From Voluntary ESG Reporting? Evidence From China's Listed Companies. *Agribusiness*, 42(2), 623-640. <https://doi.org/10.1002/agr.70004>
- Yu, E. P. Y., Guo, C. Q., & Luu, B. V. (2018). Environmental, social and governance transparency and firm value. *Business Strategy and the Environment*, 27(7), 987-1004. <https://doi.org/10.1002/bse.2047>
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review. reconceptualization. and extension. *Academy of Management Review*, 27(2), 185-203. <https://doi.org/10.2307/4134351>
- Zhang, Y., Li, X., Huang, Q., & Mu, X. (2025). The blur phraseology in ESG reports and firm value: textual analysis evidence from Chinese listed companies. *Economic Analysis and Policy*, 87, 281-296. <https://doi.org/10.1016/j.eap.2025.05.059>
- Zhang, Z., Zhang, B., Ty, J., Wang, N., & Xu, X. (2026). Is more ESG disclosure always better? New evidence from ESG disclosure quantity and firm value. *International Review of Economics & Finance*, 108, 105318, <https://doi.org/10.1016/j.iref.2026.105318>