MANAGEMENT
2025, Vol. 29, No. 2
www.management-poland.com
DOI: 10.58691/man/210918

SÁRA SEDLÁKOVÁ
JANA HINKE
LILIA DVOŘÁKOVÁ

Gender Diversity on Management Board of Listed Companies in the V4 in the Context of the EU Directive

Abstract

Research background and purpose: Gender diversity in corporate leadership is an increasingly discussed topic in the field of corporate governance and economic performance. The European Union has adopted several measures aimed at increasing the representation of women in leadership positions, including Directive (EU) 2022/2381, which sets targets for a more balanced gender representation on the boards of listed companies. This study focuses on examining the development of gender diversity in corporate leadership in the Visegrad Group (V4) countries and its impact on companies' financial performance. The objective is to verify whether listed companies in these countries are aligning with the regulatory requirements and to assess the effect of higher female representation on financial results.

Design/methodology/approach: The research employs a quantitative approach based on data analysis from the Eurostat and Orbis databases. In the first part of the study, the development of the share of women in leadership positions in V4 companies over time is tracked and their progress toward the 33% threshold set by European legislation is examined. Subsequently, the relationship between gender diversity in leadership and financial indicators is analysed using statistical tests and regression analysis.

Findings: The financial indicators analysis suggests that gender diversity has a statistically significant positive relationship with solvency and profitability indicators, however, a direct impact on traditional financial metrics such as ROA and ROE were not confirmed. This study contributes to a deeper understanding of the impact of gender diversity on the management and performance of listed companies in the V4 countries and provides an up-to-date perspective on its development in connection with the implementation of the EU directive.

Value added and limitations: Among the study's limitations are differences in the number of listed companies across countries and incomplete data. Companies lacking key financial indicators or information on leadership composition were excluded from the analysis. Additionally, external economic factors that are not fully accounted for in the analysis may influence the results.

Keywords: *EU regulations, financial performance, Visegrad Group, gender diversity*

JEL Classification: J16, G30, M14

Received: 2025-03-13; **Revised:** 2025-07-31; **Accepted:** 2025-09-15

Sára Sedláková ✉
Department of Finance and Accounting, University of West Bohemia in Pilsen, Czech Republic; email: sedlaks@fek.zcu.cz, ORCID: 0009-0007-4872-4277

Jana Hinke
Department of Finance and Accounting, University of West Bohemia in Pilsen, Czech Republic, ORCID: 0000-0001-6767-1253

Lilia Dvořáková
Department of Finance and Accounting, University of West Bohemia in Pilsen, Czech Republic, ORCID: 0000-0001-6389-381X

1. Introduction

Gender diversity in the leadership of publicly traded companies is a significant topic in corporate governance and economic research. The increase in the proportion of women in corporate leadership positions is driven not only by regulatory measures but also by pressure from investors and society. The European Union has adopted several measures, particularly Directive 2014/95/EU and Directive 2022/2381, aimed at increasing transparency and achieving a more balanced representation of women and men in corporate governing bodies. Despite these initiatives, significant differences persist among member states.

The aim of this study is to analyse the development of gender diversity in the leadership of publicly traded companies in the V4 countries and to assess its impact on the financial performance. The study examines whether companies in the V4 region are approaching the required 33% share of women in leadership positions and what relationship exists between gender diversity and financial indicators.

Based on the analysis of relevant literature, there is broad consensus on the positive impact of gender diversity on decision-making processes and risk management in businesses. However, empirical studies provide ambiguous results regarding its direct impact on financial performance, indicating a research gap, particularly in the context of the V4 countries, where regulatory frameworks and the level of female representation in corporate leadership vary significantly.

This study contributes to the understanding of gender diversity in corporate leadership within the V4 countries, which are often overlooked in this context. It examines the alignment of these countries with EU regulatory requirements and evaluates the impact of female representation in leadership on financial indicators. By addressing this research gap, the study provides a comprehensive perspective on the economic benefits of diversity and offers valuable insights for investors, policymakers, and corporate governance in the V4 region.

To address these objectives and fill the identified research gap, this study seeks to answer the following research questions:

RQ1: What is the development of gender diversity in the leadership of listed companies in the V4 countries in the context of the EU directive? Are companies approaching the 33% threshold?

RQ2: Is there a statistically significant relationship between female representation in leadership and financial performance indicators as well as the market performance indicator?

Based on the defined research questions, the following research hypotheses have been formulated:

H1: The proportion of women in leadership positions in publicly traded companies in the V4 countries has been increasing over time, indicating progress towards the 33% threshold set by the European Directive 2022/2381.

H1: There is a statistically significant relationship between female representation in leadership positions and corporate financial performance indicators (ROA, ROE, ROCE, Solvency ratio) as well as market performance (Tobin's Q) among publicly traded companies in the V4 countries, provided that this representation exceeds the critical mass threshold of 33%.

The following chapter presents an overview of relevant literature and the legislative framework, focusing on previous empirical studies and regulatory measures in the area of gender balance. The methodology section describes the data used, the research sample, and statistical analysis methods. The empirical section of the article presents the development of gender diversity in corporate leadership within the V4 region and its alignment with regulatory requirements, followed by the results of a quantitative analysis of the relationship between gender diversity and corporate financial performance.

The discussion interprets the findings in the context of existing research and evaluates the regulatory impacts. The conclusion summarizes the key findings, identifies the study's limitations, and suggests directions for future research.

2. Literature review

2.1. Gender diversity in leadership in the context of EU directives

Gharios et al. (2024) state in their study that gender diversity in corporate leadership is a key topic in corporate governance and economic performance. The importance of gender balance in top positions has been steadily increasing over the past decades, not only due to regulatory changes but also because of growing pressure from investors and society. The study confirms that a higher proportion of women on corporate boards leads to greater managerial independence, more effective decision-making, and higher financial performance. The authors further note that a diversified leadership contributes to better oversight of a company's strategic direction and more efficient risk management, which subsequently increases long-term corporate profitability.

The European Union actively supports gender diversity in corporate leadership, particularly through regulatory measures such as Directive 2014/95/EU and the more recent Directive 2022/2381. These directives aim to improve the balanced representation of women and men on the boards of publicly listed companies.

The European Parliament and Council Directive 2014/95/EU requires large companies to disclose non-financial information, thereby increasing transparency regarding their

environmental, social, and employee-related matters, respect for human rights, and anti-corruption measures. These disclosures must include a description of the business model, adopted policies and their outcomes, major risks, and risk management approaches. The directive also mandates greater transparency regarding corporate leadership diversity and allows member states to establish additional rules to ensure the comparability and verification of these data.

Nicolò et al. (2022) examine the impact of gender diversity on corporate boards in relation to ESG disclosure levels in European firms. Their findings indicate that a higher proportion of women in leadership positively influences transparency and corporate governance, as diverse boards contribute to better decision-making processes and more responsible management. The study also confirms that regulatory measures, such as Directive 2014/95/EU, support higher levels of non-financial reporting and corporate sustainability.

The primary objective of European Parliament and Council Directive (EU) 2022/2381 is to improve gender balance in the supervisory and executive boards of publicly listed companies. The directive establishes that by June 30, 2026, these bodies must achieve at least 40% representation of the underrepresented gender among non-executive members or 33% among all board members. To meet these targets, the directive mandates transparent selection processes in which, in cases of equally qualified candidates, preference should be given to a candidate from the underrepresented gender. Member states are responsible for ensuring effective monitoring and enforcement of these rules, including sanctions for non-compliance (European Parliament and Council Directive (EU) 2022/2381, 2022).

Birkmose (2023) analyses Directive (EU) 2022/2381, which aims to improve gender balance on the boards of publicly listed companies in the European Union. The author emphasizes that quotas are the most effective tool for achieving gender diversity but questions whether the chosen model will truly achieve the directive's objectives. She particularly criticizes the inadequate resolution of potential conflicts with corporate law, highlighting possible clashes with shareholder rights in electing board members. The directive, therefore, straddles the fields of labour law and corporate governance, leading to legal uncertainties. The article also compares various national initiatives promoting gender diversity in countries such as Norway, France, and Denmark, which have adopted different approaches to quotas and their enforcement. Birkmose (2023) concludes that the directive represents an important step toward greater gender balance, but its effectiveness will depend on how it is implemented in individual member states. The most significant impact is expected in countries that currently lag behind in gender equality.

European institutions have undertaken several measures to promote gender diversity on corporate boards. Some EU member states, such as France, Germany, Italy, and Belgium, have introduced legally binding gender quotas for the boards of publicly

traded companies or firms of a certain size. Other countries, such as Poland, have opted for voluntary measures, such as corporate governance codes aimed at increasing the proportion of women in leadership positions. Conversely, some states, including the Czechia, Slovakia, and Hungary, have not yet adopted any specific measures to achieve gender balance in this regard (Bukalska et al., 2024). This approach may be related to the broader institutional and economic framework of these countries. The Visegrad Group (V4), consisting of the Czechia, Slovakia, Hungary, and Poland, shares a historically similar economic development, yet their business environments and legislation differ in certain aspects. These differences may influence the implementation of political and economic measures, including those aimed at corporate leadership diversity (Hinke et al., 2021).

Research shows that without stricter regulations, gender diversity in leadership improves only very slowly, while countries that have implemented mandatory quotas have experienced a faster increase in female representation in management and have been better able to implement strategic changes leading to long-term sustainability (Carmo et al., 2022; Di Guida et al., 2022).

The findings above indicate that individual EU member states take markedly different approaches to gender diversity in corporate leadership. While some countries have introduced binding quotas, others rely on voluntary measures or recommendations within corporate governance codes. Special attention should be given to the Visegrad Group (V4) region which has so far been characterized by a rather passive approach to promoting gender balance in corporate leadership.

Available literature and regulatory measures suggest that legally binding quotas are the primary mechanism for achieving higher gender diversity, with their effectiveness depending on the quality of implementation and the level of enforceability. However, in the context of the V4 countries, there are currently no uniform mandatory requirements for minimum female representation in corporate leadership, raising questions about the actual effectiveness of current measures and the feasibility of achieving the 33% threshold set by EU Directive 2022/2381.

Given these considerations, this research will focus on analysing the development of gender diversity in the leadership of publicly listed companies in the V4 countries and assessing whether these companies are gradually approaching the required 33% threshold.

2.2. Gender diversity and its impact on corporate performance

Most studies confirm a positive relationship between female representation in leadership and corporate financial performance, particularly in accounting indicators such as ROA (return on assets) and ROE (return on equity) (Basdekis et al., 2023; Dwaikat et al., 2021; Gonçalves et al., 2022; Gupta et al., 2023; Loh et al., 2022). These studies

consistently indicate that a higher proportion of women in executive positions and on corporate boards leads to increased profitability, more efficient management, and greater transparency.

For example, Basdekis et al. (2023) found that a 10% increase in the proportion of women in leadership resulted in a 1.4% to 1.8% increase in profitability indicators. Similar conclusions were drawn by Dwaikat et al. (2021), who observed that the presence of women on corporate boards positively influenced ROA and ROE in Palestinian firms.

Gupta et al. (2023) further highlight that gender diversity in leadership improves non-financial indicators, such as corporate social responsibility, though its impact on market performance (Tobin's Q) remains inconclusive. This finding aligns with the results of Bukalska et al. (2024), who confirm the positive impact of gender diversity on operational efficiency but did not identify any statistically significant effect on firms' market value.

There is broad consensus on the positive impact of gender diversity on financial performance indicators (ROA, ROE), with this effect being strongest when a certain "critical mass" of women in leadership is reached (e.g., at least 20% or three women on the board). This relationship is confirmed by Gupta et al. (2023), Dwaikat et al. (2021), Basdekis et al. (2023), and others.

While some studies analyse gender diversity across various industries, others focus on specific sectors. Findings indicate that the impact of gender diversity is not equally strong across all industries.

For instance, Reinert et al. (2016) analysed the banking sector in Luxembourg and found that banks with a higher proportion of women in leadership achieved higher returns on equity (ROE), with this effect being most pronounced during the financial crisis. Similar results were reported by Bouteska and Mili (2022) for the banking sector in ASEAN countries, where higher female representation led to greater profitability but also increased capital risk exposure.

Omri and Alfaleh (2024) analysed publicly traded European companies and found that the positive impact of gender diversity on performance is strongest in highly regulated and transparent sectors, such as finance and public services. Conversely, in technology and industrial sectors, this effect was weaker. Similarly, Basdekis et al. (2023) mention that while the overall effect of gender diversity on financial performance is positive, it varies by industry. Their analysis of firms across different sectors revealed that women in managerial positions provide the greatest benefits in companies requiring broader strategic skills, particularly in service-oriented industries.

The strength of gender diversity's impact varies by sector. The most positive effects have been observed in regulated industries (banking, public services), while results in technology and industrial sectors have been mixed (Omri & Alfaleh, 2024; Reinert et al., 2016).

Based on existing studies, it can be concluded that gender diversity in corporate leadership is associated with positive effects on financial performance, particularly

in indicators such as ROA and ROE. Some studies, however, report that greater board gender diversity may coincide with lower ROA, as diverse boards often prioritize sustainability and broader stakeholder interests over short-term financial gains (Almaqtari et al., 2024).

However, its impact on market performance (Tobin's Q) remains inconclusive, suggesting the need for further analysis of this relationship. Another important aspect is achieving a "critical mass" of women in leadership, which may be necessary for the tangible benefits of gender diversity to materialize. Studies indicate that if only a few isolated women hold board or executive positions, the impact on corporate performance may not be as pronounced as when female representation is higher.

Building on these findings, this research will focus on quantifying the relationship between gender diversity in leadership and both financial and market performance. The objective is to verify whether higher female representation in leadership positions has a statistically significant impact on performance indicators (ROA, ROE, ROCE, and Solvency ratio) and market performance (Tobin's Q).

3. Methods

This study analyses gender diversity in the leadership of publicly listed companies in the Visegrad Group countries. To answer the first research question, data from the dataset "Positions held by women in senior management positions" available from Eurostat is used (Eurostat, n.d.). The analysis focuses on the dimension of the proportion of women in corporate statutory bodies (board members), which includes all members of the company's highest decision-making body, including chairpersons, non-executive directors, senior executives, and employee representatives. According to European Parliament and Council Directive (EU) 2022/2381, the proportion of the underrepresented gender in these bodies should reach at least 33%. In practice, this underrepresented gender is predominantly female. The analysis covers the longest available time period (2004–2023), allowing for the observation of long-term trends and an assessment of whether and to what extent publicly listed companies in individual V4 countries are approaching the legislatively set threshold of 33%. The data is processed using descriptive statistics, which help identify developmental trends, and comparative analysis, which provides a cross-country comparison.

To answer the second research question, data from the Orbis database is used (Moody's Analytics Bureau van Dijk, n.d.). Only active publicly listed companies from the V4 countries were selected. The total number of analysed companies is 867. Detailed characteristics of the research sample are presented in Table 1, which provides an overview of the distribution of companies by country, industry, and other characteristics of the research sample from 2023.

Table 1. **Sample characteristics**

Distribution of countries		
Country	**Number of Companies**	**Percentage**
Czechia	62	7.15
Hungary	54	6.23
Poland	725	83.62
Slovakia	26	3.00

Distribution of industries					
Industry	**Number of Companies**	**Percentage**	**Industry**	**Number of Companies**	**Percentage**
A – Agriculture, Forestry and Fishing	13	1.50	J – Information and Communication	103	11.88
B – Mining and Quarrying	6	0.69	K – Financial and Insurance Activities	113	13.03
C – Manufacturing	270	31.14	L – Real Estate Activities	46	5.31
D – Electricity, Gas, Steam and Air Conditioning Supply	20	2.31	M – Professional, Scientific and Technical Activities	76	8.77
E – Water Supply; Sewerage, Waste Management and Remediation Activities	4	0.46	N – Administrative and Support Service Activities	18	2.08
F – Construction	44	5.07	O – Public Administration and Defence; Compulsory Social Security	10	1.15
G – Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	99	11.42	Q – Human Health and Social Work Activities	16	1.85
H – Transportation and Storage	11	1.27	R – Arts, Entertainment and Recreation	3	0.35
I – Accommodation and Food Service Activities	6	0.69	S – Other Service Activities	9	1.04

Characteristics of companies at the end of 2023					
Specification		**Mean**	**Std. Dev.**	**Median**	**N**
Age	in years	29	26	24	860
Market Capitalization	mil. EUR	328.78	1,650.66	8.51	837
Turnover	mil. EUR	413.00	3,395.74	7.97	834
Total Revenue	mil. EUR	386.36	3,476.47	8.39	784
Net Income	mil. EUR	28.52	247.40	0.09	840
Total Assets	mil. EUR	1,337.64	8,724.53	11.52	841

Source: own study

Within the research sample, a significant dominance of Polish companies is evident, accounting for 83.62% of all analysed firms. This high proportion reflects the size and development of the Polish capital market compared to other V4 countries. In contrast, Czechia (7.15%), Hungary (6.23%), and Slovakia (3.00%) have relatively lower representation, which is related to the smaller number of publicly listed firms. The largest share of companies belongs to the manufacturing sector, representing 31.14% of the sample. This result reflects the long-standing industrial tradition of the V4 region, where the manufacturing sector plays a crucial role in the economies of all four countries. Financial and insurance activities and information and communication services are also significantly represented, indicating ongoing digitalization and the importance of the financial sector in the region. The average age of the analysed firms is 29 years, with the standard deviation indicating considerable variability among companies—ranging from long-established enterprises to relatively new firms. From a financial perspective, the sample exhibits significant disparity in market capitalization, revenue, and total assets.

For describing the composition of statutory bodies in terms of gender diversity, four characteristics were used. To determine the presence of a woman in leadership, a binary variable W_YES was used, taking the value 1 if there is at least one woman in leadership and 0 otherwise. To display the proportion of women in leadership relative to the total number of members, the ratio W_SHARE was used, expressing the share of women in leadership to the total number of board members. Additionally, the variable W_BoD was included, indicating whether a woman is a member of the company's board of directors, taking the value 1 if yes, and 0 otherwise. To express the level of gender diversity in organizational structures, the variable BLAU_INDEX was used, which is Blau's

heterogeneity index that quantifies the degree of diversity based on gender composition in leadership. Mathematically, it is defined as: (Solanas et al., 2012).

The sample of companies was divided into two panels based on the proportion of women in leadership: Panel 1 includes firms with a female representation of up to 33%, while Panel 2 includes firms with a representation above 33%. This threshold was chosen based on the concept of critical mass, which suggests that the positive impact of gender diversity on financial performance becomes evident only after reaching a certain level of female representation. Studies such as Gupta et al. (2023), Dwaikat et al. (2021), and Basdekis et al. (2023) confirm that at least 20% of women or three women on the board can have a significant impact on ROA and ROE. This consideration is also in line with the EU directive, which sets the minimum representation of women in leadership at 33%.

The objective of the analysis was to determine whether there are statistically significant differences between these two groups in financial performance indicators (ROA, ROE, ROCE and Solvency ratio) and the market performance indicator (Tobin's Q). Since the data did not meet the normal distribution (verified by the Kolmogorov-Smirnov test), the Mann-Whitney non-parametric test was chosen for the analysis, as it is suitable for comparing two independent groups with a non-normal distribution.

To verify the relationship between gender diversity in leadership and corporate financial performance, regression using the ordinary least squares (OLS) method was applied. The regression model was specified as follows:

$$Performance_{i,t} = \beta_0 + \beta_1 \begin{bmatrix} W_Y ES \\ W_S HARE \\ W_B oD \\ BLAU_I NDEX \end{bmatrix} + \beta_2 l\, n(ASSETS)_{i,t} +$$

$$\beta_3 \ln(AGE)_{i,t} + \beta_4 DEBT\ RATIO_{i,t} + \varepsilon_{i,t}$$

The dependent variable in the model represents corporate financial performance indicators. The independent variables include several measures of gender diversity in leadership: a binary variable indicating the presence of women on the board, the proportion of women on the board, a binary variable indicating the presence of at least one woman on the board of directors, and Blau's diversity index. The control variables include company size represented by the logarithm of total assets, the logarithm of company age, and the debt ratio.

Before processing, the data was cleaned of missing values, and extreme outliers were removed using the 1st and 99th percentiles. A logarithmic transformation was applied to variables with high variability. A multicollinearity check was conducted, revealing high

correlations among some gender diversity variables, leading to the estimation of separate models for each of them.

For each dependent variable, four regression models were estimated, where one of the gender variables was included as the key explanatory variable in each model. The first model included the binary variable indicating the presence of women on the board. The second model used the proportion of women on the board. The third model employed a binary variable indicating the presence of at least one woman on the board of directors. The fourth model incorporated Blau's diversity index. All models included control variables reflecting company size, age, and debt ratio.

4. Results

The analysis of the share of women on the boards of publicly listed companies in the Visegrad Group (V4) countries during the period 2004–2023 (Figure 1) shows significant differences between the individual countries and a variable development over time.

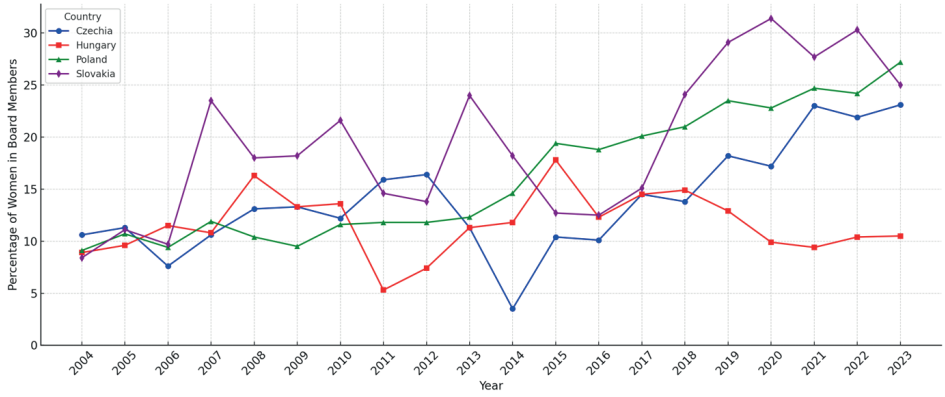

Figure 1. **Gender diversity in board members (2004-2023)**

Source: own study, according Eurostat

In none of the analysed countries had the 33% threshold for female representation in leadership, as set by EU Directive 2022/2381, been reached by 2023. However, a positive long-term trend can be observed, particularly in Poland and Slovakia, where growth is the most pronounced. In 2023, the share of women on corporate boards in Poland reached 27.2%, and in Slovakia, it was 25%, making them the closest to the

target among all V4 countries. In contrast, Hungary has consistently shown the lowest female representation in leadership. Since 2015, when it peaked at 17.8%, there has been a decline or stagnation, with the proportion of women dropping to just 10.5% in 2023, far from the required threshold. The Czechia experienced growth primarily after 2018, with the share of women rising to 23.1% in 2023. The development suggests that the implementation of EU legislation and measures supporting gender diversity has varying impacts across different countries. While Poland and Slovakia are gradually approaching the target threshold, Hungary and, to some extent, the Czechia show a slower pace of change. Overall, although the share of women on corporate boards is increasing in the V4 countries, the 33% target set by the EU directive has not yet been achieved.

Table 2 provides an overview of gender diversity in corporate leadership across the entire sample as well as in individual countries.

Overall, at least one woman was present in the leadership of 82.2% of companies, with the lowest share recorded in the Czechia (65.4%) and the highest in Slovakia (92.6%). Variability among companies was highest in the Czechia, indicating an uneven distribution of women across firms. The average proportion of women in leadership reached 20.7%, with the lowest value observed in Poland (19.5%) and the highest in Slovakia (33.7%). The median shows that in many firms, the proportion of women is below the average value, meaning that a few firms with higher female representation influence the overall result.

Table 2. **Characteristics of corporate leadership in listed companies in the V4**

Specification	Mean	Std. Dev.	Median	N
Whole Sample				
W_YES	0.8220	0.3828	1.0000	865
W_SHARE	0.2072	0.1649	0.1818	865
W_BoD	0.2509	0.4338	0.0000	865
BLAU_INDEX	0.2742	0.1658	0.2975	865
Czechia				
W_YES	0.6538	0.4852	1.0000	26

W_SHARE	0.1964	0.2219	0.1250	26
W_BoD	0.4615	0.5084	0.0000	26
BLAU_INDEX	0.2210	0.1897	0.2188	26
Hungary				
W_YES	0.9194	0.2745	1.0000	62
W_SHARE	0.2360	0.1709	0.2042	62
W_BoD	0.5645	0.4999	1.0000	62
BLAU_INDEX	0.3031	0.1438	0.3249	62
Poland				
W_YES	0.8122	0.3909	1.0000	724
W_SHARE	0.1953	0.1558	0.1690	724
W_BoD	0.1934	0.3952	0.0000	724
BLAU_INDEX	0.2659	0.1655	0.2809	724
Slovakia				
W_YES	0.9259	0.2644	1.0000	54
W_SHARE	0.3369	0.1890	0.3333	54
W_BoD	0.5556	0.5016	1.0000	54
BLAU_INDEX	0.3767	0.1417	0.4444	54

Source: own study

The presence of women on corporate boards varies significantly between countries. The highest share of companies with at least one woman on the board was recorded in Hungary (56.5%) and Slovakia (55.6%), while in Poland, this value was the lowest (19.3%). In the Czechia and Poland, the median is 0, meaning that more than half of the companies in these countries have no women on their boards. The Blau diversity index was highest in Slovakia (0.3767) and lowest in the Czechia (0.2210), confirming higher gender diversity in Slovakia and Hungary compared to Poland and the Czechia. The differences between companies in individual countries are relatively stable, yet

the data suggest that low female participation in leadership persists in some countries, particularly in Poland and the Czechia

Further analysis examined financial indicators and firm characteristics based on the proportion of women in leadership. Companies were divided into two groups depending on whether their female representation in leadership did not exceed 33% (Panel 1) or was higher than 33% (Panel 2). Table 3 presents average values, standard deviations, and medians for key financial performance indicators, as well as firm characteristics.

The analysis revealed statistically significant differences between companies with varying levels of female representation in leadership, with some financial indicators and characteristics showing a higher degree of divergence. The results of the Mann-Whitney test (Table 4) confirm that while some corporate performance indicators do not show statistically significant differences, other aspects, particularly solvency, profitability indicators, and structural firm characteristics, differ significantly between the groups.

Table 3. **Financial indicators and company characteristics**

Characteristics	Mean	Std. Dev.	Median	N
Panel 1 – Number of Women in Leadership up to 33 %				
Financial Indicators				
ROE (%)	-9.32	82.13	5.28	592
ROA (%)	-1.82	19.33	1.91	621
ROCE (%)	-2.39	65.19	7.66	574
Solvency ratio (%)	51.75	30.81	54.26	619
Profit margin (%)	1.18	28.62	3.95	553
Tobin's Q	5.94	44.71	0.73	586
Company Characteristics				
Age	28.47	24.46	23.00	666
Market Capitalization	319.59	1,648.85	9.42	653
Turnover	477.24	3,832.20	10.50	648
Total Revenue	458.57	3,908.77	10.47	617

Net Income	26.38	255.76	0.10	652
Total Assets	1,206.84	8,240.12	13.22	653
Total debt	119.05	832.58	2.08	641
Panel 2 – Number of Women in Leadership below 33 %				
Financial Indicators				
ROE (%)	2.56	31.50	4.93	174
ROA (%)	0.05	16.63	1.95	181
ROCE (%)	3.20	37.03	6.88	154
Solvency ratio (%)	57.59	29.76	61.15	180
Profit margin (%)	8.03	30.81	5.55	152
Tobin's Q	16.48	176.39	0.69	153
Company Characteristics				
Age	32.26	30.05	28.00	192
Market Capitalization	365.34	1,674.43	6.58	182
Turnover	190.24	748.84	4.51	185
Total Revenue	120.27	542.85	4.59	166
Net Income	36.15	217.71	0.08	187
Total Assets	1,801.57	10,289.12	7.39	187
Total debt	51.13	286.14	0.92	180

Source: own study

Table 4. **Mann-Whitney test results for financial indicators and company characteristics**

Specification	Mann Whitney Statistics	P-value	Significance
Financial Indicators			
ROE (%)	-0.4735	0.636	Not Significant
ROA (%)	-0.5643	0.5727	Not Significant
ROCE (%)	-0.3575	0.7209	Not Significant

Solvency ratio (%)	-2.4046	0.0162	Significant
Profit margin (%)	-2.3327	0.0197	Significant
Tobin's Q	-0.5714	0.5679	Not Significant
Company Characteristics			
Age	-2.5933	0.0095	Significant
Market Capitalization	-2.0925	0.0364	Significant
Turnover	-2.8353	0.0046	Significant
Total Revenue	-2.8599	0.0042	Significant
Net Income	-0.7965	0.4258	Not Significant
Total Assets	-1.8601	0.0629	Not Significant
Total debt	-3.1663	0.0015	Significant

Source: own study

Companies with lower female representation in leadership (Panel 1) exhibit, on average, lower return on equity (ROE –9.32% compared to 2.56% in the group above 33%) and return on assets (ROA –1.82% compared to 0.05%). However, these differences are not statistically significant. In contrast, the solvency ratio and profit margin were significantly higher in firms with greater female representation in leadership. This result suggests that companies with higher gender diversity may be financially more stable and achieve higher profitability.

Significant differences were also found in the structural characteristics of firms. Companies with a higher proportion of women in leadership were, on average, older (32.26 years compared to 28.47 years), had higher market capitalization, higher revenue, total income, and lower total debt. Lower indebtedness among these firms suggests more prudent financial management, which may be associated with more stable growth and lower financial risk.

Conversely, some indicators, such as Tobin's Q (a measure of a company's market valuation), return on capital employed (ROCE), and total assets, did not significantly differ between the groups. This suggests that the impact of gender diversity on financial performance is not entirely clear and may be influenced by additional factors, such as industry differences or individual company strategies.

Overall, the results confirm that companies with a higher representation of women in leadership exhibit greater financial stability and better solvency, which may indicate that gender diversity in leadership contributes to long-term sustainable management.

Since solvency ratio and profit margin were statistically significant between the groups in the previous section, they were further examined using regression analysis. Table 5 presents the results of regression models for solvency ratio, while Table 6 shows the results for profit margin.

Table 5. **Regression analysis of the impact of women on board on the Solvency Ratio**

Variable	Solvency ratio	Solvency ratio	Solvency ratio	Solvency ratio
Intercept	124.76*** (38.6629)	125.94*** (39.3713)	124.13*** (39.0251)	125.29*** (38.8982)
W_YES	-1.19 (-0.9684)	-	-	-
W_SHARE	-	**-9.27*** (-3.3122)**	-	-
W_BoD	-	-	-1.33 (-1.3397)	-
BLAU_INDEX	-	-	-	**-5.36* (-1.9354)**
LN_ASSETS	-2.11*** (-11.5090)	-2.16*** (-11.8797)	-2.10*** (-11.5262)	-2.12*** (-11.6607)
LN_AGE	0.94 (1.3287)	1.24* (1.7475)	0.97 (1.3669)	1.07 (1.5031)
DEBT RATION	-84.42*** (-46.7750)	-85.14*** (-47.2918)	-84.59*** (-46.8972)	-84.69*** (-46.9854)
Adj. R-squared	0.7863	0.7896	0.7866	0.7873
F-statistic	600.8569	612.6511	601.8643	604.1578
Prob(F-statistic)	0.0	0.0	0.0	0.0
Total observations	653	653	653	653

***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively

Source: own study

Table 6. **Regression analysis of the impact of women on board on the Profit Margin**

Variable	Profit margin	Profit margin	Profit margin	Profit margin
Intercept	-40.04*** (-6.2265)	-40.23*** (-6.2670)	-38.20*** (-6.0258)	-40.88*** (-6.3681)
W_YES	3.55 (1.4534)	-	-	-
W_SHARE	-	9.56* (1.7022)	-	-
W_BoD	-	-	**3.34*** **(1.6920)**	-
BLAU_INDEX	-	-	-	**12.22**** **(2.2119)**
LN_ASSETS	2.87*** (7.8742)	2.95*** (8.0883)	2.87*** (7.8997)	2.92*** (8.0484)
LN_AGE	1.15 (0.8132)	0.99 (0.6992)	1.12 (0.7929)	0.91 (0.6462)
DEBT RATION	-26.02*** (-7.2332)	-25.14*** (-6.9592)	-25.57*** (-7.1132)	-25.36*** (-7.0597)
Adj. R-squared	0.1626	0.1636	0.1636	0.1662
F-statistic	32.6515	32.8865	32.8762	33.4839
Prob(F-statistic)	0.0	0.0	0.0	0.0
Total observations	653	653	653	653

***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively

Source: own study

Gender diversity in leadership, as well as the relationships between various diversity indicators and financial performance, varies depending on the indicator used. Blau's diversity index (BLAU_INDEX) is the only gender variable that shows a statistically significant relationship with profit margin ($p < 0.05$), as reported in Table 6. This result suggests that companies with a more balanced representation of men and women on the board tend to have higher profitability. This may be related to better diversity of opinions,

more effective decision-making processes, or improved risk management capabilities, which can positively reflect on a company's financial performance.

In contrast, the proportion of women on the board (W_SHARE) shows a statistically significant negative relationship with solvency ($p < 0.01$), as indicated in Table 5. This result may be influenced by several factors, such as industry structure, legislative requirements, or differing financing strategies in companies with higher gender diversity. A possible explanation is that firms with a higher proportion of women on the board may more frequently rely on external financing, leading to lower solvency, without necessarily implying a deterioration in overall financial stability. W_BoD, which indicates the presence of at least one woman on the board of directors, exhibits a weak positive relationship with profit margin ($p < 0.10$) (Table 6), suggesting that diversity may play some role in financial performance but may not be a decisive factor on its own.

Overall, the results suggest that gender diversity in corporate leadership is not a clear-cut determinant of financial performance but may have indirect positive effects, particularly when diversity is balanced. The significant influence of Blau's index on profitability (Table 6) indicates that the mere presence of women may not be the determining factor; rather, an even distribution of men and women in decision-making positions may contribute to better financial outcomes. Conversely, the negative relationship between the proportion of women on the board and solvency (Table 5) suggests that broader context, such as financing strategies or industry-specific factors, must be taken into account.

5. Discussion

The results of this study contribute to understanding the development of gender diversity in the leadership of publicly traded companies in the Visegrad Group (V4) countries and its relationship to corporate financial performance. The findings indicate that despite an increasing trend in female representation in leadership, none of the examined countries have yet reached the target threshold of 33% set by EU Directive 2022/2381. The highest values were recorded in Slovakia (33.7%) and Poland (27.2%), while the lowest proportion of women in leadership was found in Hungary (10.5%), highlighting significant differences among V4 countries.

In the context of previous research, these results align with the findings of Bukalska et al. (2024), who identified slow progress in countries with less developed regulatory frameworks for promoting gender diversity. At the same time, they support the conclusions of Gharios et al. (2024) and Omri and Alfaleh (2024), who argue that the impact of gender diversity on corporate financial performance is not clear-cut and may vary depending on industry focus and corporate strategies.

The analysis of research questions produced mixed results. The presence of women in leadership was not statistically significantly associated with traditional financial indicators such as ROA, ROE, or Tobin's Q, suggesting that gender diversity alone may not be a determining factor in financial performance. This conclusion corresponds with the findings of Reinert et al. (2016) and Basdekis et al. (2023), who identified stronger effects of gender diversity on non-financial aspects of corporate governance, such as decision-making quality and risk management.

On the other hand, a statistically significant relationship was found between gender diversity and financial stability indicators, specifically higher solvency and profit margins in companies with greater female representation in leadership. This result supports Omri and Alfaleh (2024) assertion that diversified leadership may contribute to more sustainable management and more efficient resource allocation. A notable finding is also the negative relationship between the proportion of women on boards and solvency, suggesting different financing strategies in companies with higher gender diversity. This relationship requires further analysis, particularly in the context of industry-specific differences and the unique market conditions of individual countries.

A key contribution of this study is the identification of Blau's diversity index as a significant predictor of profitability. This result suggests that not only the mere presence of women in leadership but also the balanced representation of men and women in decision-making bodies may be a factor contributing to greater financial stability in companies.

Overall, the results of this study indicate that gender diversity in leadership may have indirect positive effects on corporate governance and long-term financial stability, while its direct impact on financial performance remains inconclusive.

6. Conclusions

This study provided an analysis of gender diversity in the leadership of publicly traded companies in the V4 countries and its relationship to corporate financial performance. The results showed that the proportion of women in leadership positions in these countries still does not reach the required 33%.

The main contribution of this study is the identification of a mixed relationship between gender diversity and corporate financial performance. While no statistically significant relationship was found between the presence of women in leadership and traditional performance indicators (ROA, ROE, Tobin's Q), positive associations were observed between diversity and financial stability indicators, specifically higher solvency and profitability. This result supports the argument that gender diversity may contribute to long-term sustainable management and more effective risk management.

A practical contribution of the study is the provision of empirical evidence for policymakers and corporate managers focusing on promoting gender diversity in leadership. The findings suggest that regulation alone may not be a sufficient tool for increasing the share of women in leadership and emphasize the importance of additional initiatives aimed at supporting the balanced representation of men and women in decision-making processes. These initiatives may include mentorship programs, targeted recruitment policies, and stronger corporate governance practices that encourage diversity as a strategic objective rather than merely a regulatory obligation.

However, this study has several limitations. First, it focuses only on the V4 countries, which limits the generalizability of the results to a broader European context. Second, the analysis does not account for possible industry differences and other specific factors that may influence the relationship between gender diversity and financial performance. Third, the study is limited to publicly available data, excluding internal corporate policies that may affect gender diversity. Fourth, it is cross-sectional, capturing data at one point in time, without reflecting long-term trends.

Future research should focus on a deeper analysis of factors influencing gender diversity, including institutional and cultural aspects of individual countries. Additionally, it would be beneficial to expand the analysis to other European countries and incorporate more non-financial performance indicators into the model, such as ESG factors or corporate governance quality. Longitudinal studies and qualitative analyses could provide deeper insights into corporate policies and cultural factors that affect gender diversity.

Authors' contribution

S.S.: article conception, theoretical content of the article, research methods applied, conducting the research, data collection, analysis and interpretation of results, draft manuscript preparation. **J.H.:** article conception, conducting the research, analysis and interpretation of results, draft manuscript preparation. **L.D.:** article conception, analysis and interpretation of results, draft manuscript preparation.

Acknowledgments

This paper was created within the project SGS-2023-007 "Current Challenges and Problems of Modern Society from the Perspective of Finances and Accounting" at the University of West Bohemia, Faculty of Economics.

Declaration of Generative AI and AI-assisted technologies in the writing process

While preparing this work, the authors did not use any tool/service.

References

Almaqtari, F.A., Elmashtawy, A., Farhan, N.H.S., Almasria, N.A., & Alhajri, A. (2024). The moderating effect of board gender diversity in the environmental sustainability and financial performance nexus. *Discover Sustainability, 5*, 318. https://doi.org/10.1007/s43621-024-00517-7

Basdekis, C., Katsampoxakis, I., & Anathreptakis, K. (2023). Women's participation in firms' management and their impact on financial performance: Pre-COVID-19 and COVID-19 period evidence. *Sustainability, 15*(11), 8686. https://doi.org/10.3390/su15118686

Birkmose, H.S. (2023). Improving the gender balance among directors of listed companies in the EU. *European Company and Financial Law Review, 20*(2), 166–198. https://doi.org/10.1515/ecfr-2023-0002

Bouteska, A., & Mili, M. (2022). Women's leadership impact on risks and financial performance in banking: Evidence from the Southeast Asian countries. *Journal of Management and Governance, 26*, 1213–1244. https://doi.org/10.1007/s10997-021-09594-6

Bukalska, E., Sosnowski, T., & Wawryszuk-Misztal, A. (2024). Women on management board and firm performance: Evidence from the Visegrad Group companies. *Entrepreneurial Business and Economics Review, 12(2)*, 43-59. https://doi.org/10.15678/EBER.2024.120203

Carmo, C., Alves, S., & Quaresma, B. (2022). Women on boards in Portuguese listed companies: Does gender diversity influence financial performance? *Sustainability, 14*(10), 6186. https://doi.org/10.3390/su14106186

Di Guida, C., Celentano, A., Mirone, F., & D'Amore, G. (2022). The role of board composition in CSR disclosure: An empirical analysis in four European countries. *Corporate Governance and Organizational Behavior Review, 6*(3), 74–86. https://doi.org/10.22495/cgobrv6i3p7

Dwaikat, N., Qubbaj, I.S., & Queiri, A. (2021). Gender diversity on the board of directors and its impact on the Palestinian financial performance of the firm. *Cogent Economics & Finance, 9*(1), 1948659. https://doi.org/10.1080/23322039.2021.1948659

European Parliament and Council of the European Union. (2014). Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups. *Official Journal of the European Union, L 330*, 1–9. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0095

European Parliament and Council of the European Union. (2022). Directive (EU) 2022/2381 of the European Parliament and of the Council of 23 November 2022 on improving gender balance among directors of listed companies and related measures. *Official Journal of the European Union, L 315*, 44–63. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2381

Eurostat. (n.d.). Positions held by women in senior management positions [Data set]. Retrieved February 1, 2025, from https://ec.europa.eu/eurostat/databrowser/view/sdg_05_60/default/table?lang=en

Gharios, R., Awad, A.B., Abu Khalaf, B., & Seissian, L.A. (2024). The impact of board gender diversity on European firms' performance: The moderating role of liquidity. *Journal of Risk and Financial Management, 17*(8), 359. https://doi.org/10.3390/jrfm17080359

Gonçalves, T.C., Gaio, C., & Rodrigues, M. (2022). The impact of women power on firm value. *Administrative Sciences, 12*(3), 93. https://doi.org/10.3390/admsci12030093

Gupta, P.P., Lam, K.C.K., Sami, H., & Zhou, H. (2023). Boardroom gender diversity and long-term firm performance. *International Journal of Disclosure and Governance, 20*(119–137). https://doi.org/10.1057/s41310-021-00114-4

Hinke, J., Rain, T., & Hrabovská, B. (2021). Comparison of income tax base in Visegrad countries. *Studies in Business and Economics, 16*(2), 101–110. https://doi.org/10.2478/sbe-2021-0027

Loh, L., Nguyen, T.T., & Singh, A. (2022). The impact of leadership diversity on firm performance in Singapore. *Sustainability, 14*(10), 6223. https://doi.org/10.3390/su14106223

Moody's Analytics Bureau van Dijk. (n.d.). Orbis [Data set]. Retrieved January 10, 2025, from https://orbis.bvdinfo.com/

Nicolò, G., Zampone, G., Sannino, G., & De Iorio, S. (2022). Sustainable corporate governance and non-financial disclosure in Europe: Does the gender diversity matter? *Journal of Applied Accounting Research, 23*(1), 227-249. https://doi.org/10.1108/JAAR-04-2021-0100

Omri, N.A.-E., & Alfaleh, A. M. (2024). The effects of boardroom gender diversity on corporate performance: Empirical evidence from a sample of European listed companies. *Business Economics, 59*, 86–100. https://doi.org/10.1057/s11369-024-00351-9

Reinert, R.M., Weigert, F., & Winnefeld, C.H. (2016). Does female management influence firm performance? Evidence from Luxembourg banks. *Financial Markets and Portfolio Management, 30*(2), 113–136. https://doi.org/10.1007/s11408-016-0266-8

Solanas, A., Selvam, R.M., Navarro, J., & Leiva, D. (2012). Some common indices of group diversity: Upper boundaries. *Psychological Reports: Human Resources & Marketing, 111*(3), 777–796. https://doi.org/10.2466/01.09.21.PR0.111.6.777-796