



Publisher

<http://jssidoi.org/esc/home>

REGIONAL AND NATIONAL CSR VARIATIONS: ANALYZING CROSS-COUNTRY DIFFERENCES IN CSR ADOPTION AND EFFECTIVENESS IN CZECHIA, POLAND, AND SLOVAKIA*

Jana Kozáková¹, Monika Hudáková², Veronika Grimberger³

¹ *Institute of Economics and Management, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic*

^{2,3} *Department of Economics and Finance, Institute of Economics and Management, University of Economics and Management, Furdekova 16, 851 04, Bratislava, Slovak Republic*

E-mails:¹ jana.kozakova@uniag.sk; ² monika.hudakova@buem.sk; ³ veronika.grimberger@gmail.com

Received 11 November 2024; accepted 15 May 2025; published 30 September 2025

Abstract. Corporate Social Responsibility (CSR) plays a crucial role in navigating sustainable business practices and enhancing long-term competitiveness globally. Specific features of this phenomenon are reached in transitioning economies where national contexts and specific structures of organizations shape CSR strategies. This study examines them and examines the impact of CSR on business performance and sustainability across the Visegrad region (Czechia, Poland, and Slovakia). It is built based on stakeholder theory and analyses data from 375 companies using descriptive statistics, Principal Component Analysis (PCA), and k-means clustering. Our findings point to significant cross-country differences in CSR impact, where Slovakia shows the highest levels of integration across monitored CSR dimensions, especially in organizational culture, brand sustainability, and investor engagement. Factor analysis unveils a strong underlying construct driving CSR impacts using variables such as human capital empowerment and risk management. Outcomes show consistent importance across countries, but cluster analysis points to two business profiles in the region: companies with integrated CSR practices and those with emerging or fragmented approaches. Slovakia predominantly involves the more advanced type, while Poland and the Czech Republic show more variability. This paper contributes to CSR literature by providing empirical evidence on regional nuances in CSR strategies and their link to firm performance. It offers insights for policymakers usable to harmonize CSR frameworks in the region and for businesses to strengthen CSR-driven value creation. Also, the specifically tailored national interventions and stronger regional collaboration are recommended to close gaps and foster sustainable economic growth.

Keywords: corporate social responsibility (CSR); Visegrad region; business sustainability; cross-country analysis; cluster analysis

Reference to this paper should be made as follows: Kozáková, J., Hudáková, M., Grimberger, V. 2025. Regional and national CSR variations: analyzing cross-country differences in CSR adoption and effectiveness in Czechia, Poland, and Slovakia. *Entrepreneurship and Sustainability Issues*, 13(1), 34-56. <http://doi.org/10.9770/r3326763743>

JEL Classifications: M14, Q56, L25

1. Introduction

Corporate Social Responsibility (CSR) is nowadays understood as a serious driver of business sustainability, competitiveness, and societal value, especially in the current era defined by sensitive stakeholder expectations and environmental challenges. On the global level, companies increasingly view this concept as an essential component of their strategic frameworks, able to create synergetic effects from enhancing brand reputation, to

* *This research has been supported within the project “Corporate Social Responsibility in Business Practice of the Visegrad Region (Visegrad Grant no. 22220149)”. The project is co-financed by the Governments of Czechia, Hungary, Poland, and Slovakia through Visegrad Grants from the International Visegrad Fund.*

fostering innovation, or mitigating risks (Arabska & Terziev, 2016). In Central Europe, particularly in the Visegrad region, the integration of CSR practices visibly varies due to nuances in their cultural norms, economic structures, and regulatory environments (Koleva et al., 2010).

Despite the growing body of research, just a partial understanding of its impacts on both the cross-country and organizational levels in this region remains, since existing studies often overlook the shades of interplay between national contexts and CSR integration, leaving gaps in knowledge (Colovic et al., 2019). Also, there is a deficiency in empirical evidence of business classification based on core CSR practices or to identify underlying latent factors that drive these practices, particularly in transitioning economies (Barnett et al., 2020; Dartey-Baah & Amoako, 2021). This study aims to address these gaps by examining CSR impacts on business performance and sustainability in the Visegrad countries by seeking to: (1) Identify cross-country differences in CSR impacts across Czechia, Poland, and Slovakia; (2) Explore the underlying latent factors driving CSR practices in the region; (3) Classify firms into clusters based on CSR integration levels and analyse how these clusters vary by national and firm-specific attributes. To achieve these, the study addresses the following set of research questions:

RQ1: What are the differences in CSR impacts across the three Visegrad countries?

RQ2: What are the underlying latent factors driving CSR impacts in the Visegrad region?

RQ3: How can businesses in the Visegrad region be categorized based on CSR integration levels?

RQ4: What are the defining characteristics of each CSR cluster?

RQ5: How do these clusters vary across countries and firm-specific attributes?

The study is built on the basis of stakeholder theory, which highlights that, in regard to long-term success, organizations must balance the interests of diverse stakeholders (Rodríguez-Gómez et al., 2020). It also reaches the frameworks on CSR's multidimensional impacts, incorporating aspects such as organizational culture, brand sustainability, innovation, and competitive advantage to explore CSR dynamics in these transitioning economies. Therefore, the achieved findings contribute to the academic discourse on CSR by showing empirical insights into its cross-country variability and business-level impacts on the specific example of the Visegrad region.

The results can guide policymakers by highlighting the need to design tailored CSR regulations that reflect national priorities and foster regional synergies as well. It is also providing actionable recommendations for businesses to enhance their CSR strategies, improve sustainability outcomes, and align with global standards.

2. Literature review

Corporate social responsibility (CSR) has become a natural tool for business self-regulation that balances economic, social, and environmental company initiatives, improving business performance, stakeholder trust, and public image on an international scale (Ryan et al., 2010; Tamvada, 2020; Wen & Deltas, 2022). As a concept, it implies taking responsibility for an entity's impact on society and the environment beyond the generation of profit (Masum et al., 2020). It covers a wide range of activities collectively aimed at improving the triple approach of social, environmental, and economic conditions while enhancing ethical obligations to positively contribute to the communities and environments in which they operate (Hamza & Jarboui, 2020; Khan et al, 2021; Waheed & Zhang, 2022). This effort includes not just adhering to legal standards but also voluntarily taking steps to boost the welfare of stakeholders such as employees, communities, and other entities in the company's environment (Tamvada, 2020; Nahar & Khurana, 2023).

The importance of social responsibility in business practice is multilayered and complex since it helps to build and maintain a positive reputation inside and outside the entity, which can lead to increased customer and employee loyalty and trust (Ullah et al., 2020; Islam et al., 2021); it can further drive employee engagement and satisfaction, encourage a more motivated and productive workforce (Bu et al., 2022); and, by addressing environmental and social issues, businesses can reduce various risks and identify new market opportunities which can ultimately lead to their sustainable growth (Lu et al., 2021; Le et al., 2024).

Moreover, corporate social responsibility is nowadays increasingly seen as a critical factor in investor decisions, with many private investors and financial institutions prioritizing companies with strong responsibility and sustainability records (Chen et al., 2020; Des Jardine et al., 2024), which is a phenomenon well-documented in academic and industry literature. Therefore, it can be said that companies that are implementing effective CSR strategies tend to experience several benefits, including heightened financial performance, improved risk management, and greater operational efficiency (Cho & Lee, 2019; Devie et al., 2020; Franco et al., 2020; Kim et al., 2021).

Thus, implementation of responsible practices can lead to cost savings through efficiency economic, social, and environmental waste reduction, and sustainable management of all resources which can widely help to mitigate companies negative environmental and social impacts and contribute to well-being, which at the same time aligning corporate goals with broader societal and economic objectives (Niyommaneerat et al., 2023; Khan et al., 2021; Le et al., 2024). This alignment has a strong potential to lead to long-term business viability and resilience, as companies that prioritize sustainability are generally better equipped to address a turbulent business environment visible through regulatory change, market shifts, and stakeholder expectations (Gromis di Trana et al., 2022; Kandpal et al., 2024).

Despite the concept of corporate social responsibility being widely applied on a global scale, its implementation can slightly vary on a regional level, based on the common customs of selected nationalities rooted in their values and beliefs, which are mirrored in their business practices (Khumalo et al., 2025). Several authors agree that CSR is globally recognized in the same way (Goergen et al., 2019), but local customs can severely affect specific activities through which it is implemented based on the values of local communities (Perry, 2012). Therefore, companies must recognize these nuances and adjust their CSR strategies across regions and countries, since despite similar or the same regulatory systems in these areas, the specific CSR implementation is necessary. For example, in the European Union (EU), efforts for centrally regulated non-financial reporting initiatives are implemented (Kinderman, 2020; Halkos & Nomikos, 2021; Redondo Alamillos & de Mariz, 2022), but social and culturally specific in selected countries create a diverse environment not suitable for meaningful implementation of general strategies.

Historically, a specific group of countries sharing several similarities is the Visegrad region, where the transition from centrally planned to market-oriented economies has created a unique context for CSR development and implementation (Mammadova, 2022; Kozáková et al., 2023). Factually, CSR practices in these countries were limited, but recently, the growing recognition of their importance (Przytuła et al., 2019; Kozáková et al., 2024) is visible. This approach is driven by increased globalization connected with integration into the EU and harmonization with its regulations, while generally copying the trend of rising awareness of social and environmental issues, corporate governance, and community engagement (Hąbek, 2018; Skýpalová et al., 2024). Therefore, businesses in these countries are increasingly adopting CSR practices to enhance their competitiveness and reputation in both domestic and international markets. However, the level of CSR implementation and its impacts vary across the region, influenced by nuanced cultural, economic background, and specifics of its national regulations (Kozáková et al., 2023).

In efforts to fully recognise the significant role of CSR in building a company's performance and sustainability, the specific impacts should be identified (Halme, 2020; Bacinello et al., 2021; Zhang et al., 2023). These impacts can be visible in the form of changes in selected KPIs, but also masked in the form of positive changes in organizational culture. This 'invisible' phenomenon can significantly improve employees' quality of life, creating a specific feeling of the 'spirit of the organization' (Aranki et al., 2019). Between organizational culture and CSR is a strong bond, since responsible initiatives play a key role in shaping organizational culture (Espasandín-Bustelo, 2021), and businesses that prioritize CSR tend to foster a culture of ethical behaviour, transparency, and social responsibility too.

This philosophy can enhance employee morale, loyalty, and productivity, as people are more likely to be engaged and committed to organizations that reflect their values (Kucharska & Kowalczyk, 2019; Wan et al., 2020; Ullah et al., 2022). Thus, investing in social responsibility has a great potential to empower human capital, bonding employees with organization and help to enhance their skills, satisfaction, and engagement since it is

well defined in scientific literature that companies that provide opportunities for professional development and community involvement can build a more skilled and motivated workforce (Al Kerdawy, 2019; Diaz-Carrion et al., 2020; Nazir et al., 2021). It is also important to mention that creating such an environment enhances a wider synergic effect visible through several positive impacts on the sustainability of businesses and their brands (Cowan & Guzman, 2020; Mahmood & Bashir, 2020; Khuong et al., 2021). By demonstrating some level of commitment to social and environmental issues, companies can build strong, positively perceived brands that resonate with consumers, which can be translated into increased customer loyalty and a competitive advantage on the market (Akbari et al., 2020; Gupta et al., 2020).

Implementation of corporate social responsibility can also drive innovation, although indirectly. By encouraging companies to develop new products, services, and processes that address social and environmental challenges, companies can be led to new business opportunities, cost savings, and improved market positioning (Zhou et al., 2020; Mendes et al., 2023; Le et al., 2024). Additionally, integrating CSR into business operations can improve risk management by identifying and mitigating potential social and environmental risks, which enables companies to be better equipped to avoid regulatory penalties, reputational damage, and operational disruptions (Karwowski & Raulinajtys-Grzybek, 2021; Lu et al., 2022).

Respecting this, CSR implementation and adopting sustainable practices usually lead to cost efficiencies and profitability enhancing through improved resource management (Abdallah & Al-Ghwayeen, 2020; Muhmad & Muhamad, 2021). On the other hand, CSR can contribute to profitability by revenue growth since its implementation is helping to open new markets by attracting socially conscious consumers, and differentiating products and services (Urip, 2010; Bhardwaj et al., 2018; Miethlich & Oldenburg, 2019). This effect is not exclusive to multinationals, since it is widely described in the case of small and medium-sized enterprises (Tiep Le et al., 2023) and emerging markets (Kumar & Srivastava, 2020).

Despite their size or market share, businesses that are perceived as responsible and ethical are more likely to attract and retain customers (Tanveer et al., 2021) and investors, since companies with robust CSR practices are often seen as lower-risk and higher-potential investments, leading to greater access to capital (Chatzitheodorou et al., 2019; Weston & Nnadi, 2023). Here, other positive effects of CSR initiatives cannot be forgotten since they promote transparency and accountability by encouraging companies to disclose their social and environmental impacts, which builds trust of stakeholders, including customers, employees, investors, and regulators (Lu et al., 2019; Caputo et al., 2021; Wong et al., 2021). Respecting this, all we can state is that CSR implementation can enhance a company's competitive position by differentiating it from competitors and building a strong reputation, which can lead to increased market share, customer loyalty, and long-term success.

3. Methodology

This study aims to analyse the impact of CSR implementation on business performance and sustainability in selected Visegrad countries (Czechia, Poland, and Slovakia) by describing cross-country differences and the underlying patterns of CSR adoption on regional and national levels. The data were collected using an online questionnaire survey designed to assess a wider range of CSR-related information. But, for this study, only the questions related to the impact of CSR practices on businesses were included. This part of the survey employed structured questions with Likert-scale responses (Batterton & Hale, 2017; Tanujaya et al., 2022) supporting the focus on dimensions connected with the impacts of implementation of responsible activities, which have been shown as influencers of consumer perceptions and brand loyalty (Muniz et al., 2019; Yuan, 2023).

The survey went through a pilot phase in November 2022, involving 10 companies per country, and continued with the full data collection between November 2022 and November 2023, utilizing diverse addressing methods to ensure broad representation across the region. Trained researchers assisted participants as needed, although most responses were submitted independently (Mack, 2005), promoting a more accurate representation of participant views, minimizing research bias, and maximizing response rates (Brick, 2017). The survey was promoted through various, the only prerequisite for participation in the study was that the company must be registered in the Commercial register in one of the monitored countries. In later stages, the stratified randomization (Aoyama, 1954) was used, and participants were targeted using direct e-mails, aiming to provide

a balanced sample per country and company size. Throughout the process, ethical guidelines were followed to ensure the integrity and confidentiality of the data collection process. Participation was voluntary based on informed consent (Kreuter et al., 2020), finalized data were anonymized (Díaz et al., 2021), and research complied with the ethical standards for social sciences (Curty et al., 2016), applying principles of data responsible handling and minimizing potential biases (Cragin et al., 2010; Mannheimer et al., 2018).

For data analysing, the final sample of 375 business entities evenly distributed across Czechia, Poland, and Slovakia (125 per country) and across size categories (microenterprises (0–9 employees), small enterprises (10–49 employees), medium enterprises (50–249 employees), large enterprises (250+ employees), and extra-large enterprises (500+ employees)) where 25 per category in every country was included. The 500+ category was added to ensure representation, aligning EU general categorization of business and current requirements on CSR reporting. Approximately 65.3% of these companies were part of multinational corporations. They operated in diverse sectors, relatively evenly distributed between trade (30.1%), service (36.5%), and production (33.3%). The sample also featured a variety of legal forms: Joint stock companies (15.5%), Limited liability companies (66%), Limited partnerships (65.9%), Public companies (3.5%), and Sole proprietorships (5.6%). Turnover varied, with 21.3% reporting micro turnover (€0–€1M), 35.2% small turnover (€1M–€50M), 23% medium turnover (€50M–€500M), 12% large turnover (€500M–€10B), and 8.5% mega turnover (€10B+). The used sample is diverse, but we believe that it creates a robust basis for further examination.

For this study, a specific set of variables was selected to assess CSR adoption and effectiveness across Czechia, Poland, and Slovakia, using the primary grouping variable 'CH1 Country' and variables capturing CSR impacts in 10 key dimensions (CSR-IMP01 to CSR-IMP10):

- CSR-IMP01: CSR-driven organizational culture impact;
- CSR-IMP02: CSR and brand sustainability impact;
- CSR-IMP03: Innovation and social impact realization;
- CSR-IMP04: CSR-integrated risk management impact;
- CSR-IMP05: Cost-efficiency via CSR practices impact;
- CSR-IMP06: Revenue growth and CSR integration impact;
- CSR-IMP07: Human capital and CSR empowerment impact;
- CSR-IMP08: Investor engagement for CSR impact;
- CSR-IMP09: CSR transparency and accountability impact;
- CSR-IMP10: Competitive enhancement via CSR impact.

Each of these CSR impacts were measured using a Likert scale (1–5), ranging from ‘no impact’ (1) to ‘very strong impact’ (5), capturing the degree to which CSR practices influence specific business outcomes. Additional firm-level characteristics provide contextual depth, including:

- Multinational integration (CH2): Part of an MNC or local;
- Legal form (CH3): Company types like Joint Stock or Limited Liability;
- Establishment period (CH4): Ranging from pre-1990 to 2020 and later;
- Business status (CH5): Family or non-family businesses;
- Turnover range (CH6): From micro (€0–1M) to mega (€10B+);
- Operational sector (CH7): Trade, service, or production;
- Company size (CH8): Micro (0–9 employees) to Extra Large (500+ employees);
- CEO gender (CH9): Male or female.

This set of variables was designed to capture organizational diversity, CSR adoption levels, providing insights into CSR practices across different business contexts. To ensure robust analysis, data were pre-processed and tested (Mishra et al., 2019). For the examined set of 11 variables, Cronbach’s Alpha of 0.955 indicates very high internal consistency, suggesting they are measuring the same underlying construct and are highly reliable (Meeker et al., 2021). CSR-IMP items have ‘corrected item-total correlations’ ranging from 0.806 to 0.868, showing strong correlations with the overall scale, and their ‘Cronbach’s Alpha if item deleted’ values range from 0.948 to 0.951, indicating that removing any of them would not significantly increase the overall reliability. The non-parametric tests were used due to the data’s significant deviation from normality (Mishra et al., 2019), as indicated by the Shapiro-Wilk test ($p < 0.05$). The correlation analysis using Spearman’s rho and Kendall’s

Tau B (Essam et al., 2022) revealed interrelationships among the ten CSR impact dimensions, suggesting that implementation of corporate social responsibility creates synergistic benefits, where improvements in one dimension often drive enhancements in others. Country-specific differences in CSR impacts were explored further through Kruskal-Wallis and post hoc analyses to identify localized strategies for the Visegrad region. The identified strong interrelationships among CSR dimensions, with high correlations (e.g., CSR-IMP09 and CSR-IMP08, Spearman's $\rho = 0.729$, $p < 0.001$; CSR-IMP05 and CSR-IMP06, Spearman's $\rho = 0.778$, $p < 0.001$), indicate suitability for factor analysis which could uncover latent factors that group related CSR impacts, providing deeper insights into their alignment with business objectives. Previously mentioned high internal consistency and significant item-total correlations further support the use of factor analysis.

The first part of the study aims to identify differences in CSR impacts across countries and explore the role of national and organizational factors in shaping these outcomes. In regard to this, the first research question was designed: *RQ1: What are the differences in CSR impacts across the three Visegrad countries?* Here, the Kruskal-Wallis test (Kruskal & Wallis, 1952) was used to identify significant differences between the three countries based on a general hypothesis:

- H_0 : There is no statistically significant difference in the impact of CSR implementation (CSR-IMP01 - CSR-IMP10) on performance and sustainability among the Visegrad region (1. Czechia, 2. Poland, 3. Slovakia).
- H_a : There is a statistically significant difference in the impact of CSR implementation (CSR-IMP01 - CSR-IMP10) on performance and sustainability among the Visegrad region (1. Czechia, 2. Poland, 3. Slovakia).

For subsequent identification of specific differences between countries, post hoc pairwise comparisons (Armstrong, 2014). To provide details on the distributions of responses, crosstab analyses were performed. The second part of the study focuses on examining the interrelations and underlying factors driving CSR impacts in Czechia, Poland, and Slovakia, aiming to answer additional two research questions: *RQ2: What are the underlying latent factors driving CSR impacts in the Visegrad region?* *RQ3: How do these factors differ across Czechia, Poland, and Slovakia?* The methodology for this part of the study combines techniques to assess data reliability, sampling adequacy, and latent factor structures, aiming to provide an understanding of CSR dynamics across the region. Reliability of the scale was assessed using Cronbach's α (Wadkar et al., 2016) for computing the overall scale reliability for the Visegrad region ($\alpha=0.965$) and individual countries (α ranging from 0.921 to 0.979), which confirmed that the dataset consistently measures CSR impacts across dimensions and contexts. High reliability scores validate the robustness of the scale and its suitability for further analysis (Çorum, 2023). To ensure the dataset's suitability for further factor analysis, Bartlett's Test of Sphericity was conducted (Tobias & Carlson, 1969) which results (χ^2 ranging from 800 to 3982, $p<0.001$) confirmed sufficient intercorrelations among CSR dimensions for Principal Component Analysis (PCA) (Greenacre et al., 2022) and sampling adequacy was evaluated using the Kaiser-Meyer-Olkin (KMO) test with overall values (0.954 for the Visegrad region, 0.940 for Czechia, 0.929 for Poland, 0.881 for Slovakia) indicated strong shared variance among variables, supporting the validity of PCA. Next, Principal Component Analysis (PCA) was performed using varimax rotation to uncover latent factors causing CSR impacts. The percentage of variance explained ranged from 59.4% (Slovakia) to 84.3% (Poland), with a unified factor emerging as a significant driver of CSR impacts across dimensions.

The third part of the analysis was designed to identify various groups of businesses based on their CSR integration on the level of region as well as individual countries providing insights into CSR adoption and strategic differences between businesses and aims to answer the following research questions: *RQ4: How can businesses in the Visegrad region be categorized based on their CSR integration levels?*; *RQ5: What are the defining characteristics of each CSR cluster?*; *RQ6: How do these clusters vary across countries and firm-specific attributes?* The analysis was realized using factor scores generated from the PCA, ensuring dimensionality reduction while retaining the core variance of CSR-related variables. Items representing firm characteristics (e.g., legal form, multinational integration, turnover, and operational sector) were included in the analysis to support interpretations and enrich cluster characterization. For clustering, a two-step process was employed involving 'initial cluster centres' calculated based on REGR factor scores to define groups representing specific CSR profiles; and 'iterative refinement' where clustering converged within 2–5 iterations, with the convergence criterion set to minimal movement in cluster centres ($\Delta<0.001$).

The K-means clustering algorithm was selected due to its effectiveness in partitioning data into non-overlapping groups while maximizing intra-cluster similarity and inter-cluster differences. Cluster interpretation was supported by cross-tabulation analyses, which provided detailed descriptions of clusters based on firm attributes (such as size, turnover, multinational status, legal form, operational sector, and CEO gender), enriching the understanding of CSR integration levels and differences between clusters.

It should be noted that this study has certain limitations, mainly based on the self-reported measures obtained through an online questionnaire survey, which served as the basis for the data collection, which may have been disposed to inaccuracies and potential response bias. Additionally, because the study only looked at Czech, Polish, and Slovak businesses, its conclusions might not be applicable to other companies in the Visegrad region or the surrounding area because the legal, economic, and cultural contexts of these countries differ from those of other regions, which could limit the findings' generalizability.

4. Results

The study is designed to provide an analysis of the impact of CSR implementation on business performance and sustainability across the Visegrad region, employing a combination of descriptive and statistical analysis. Findings presented in the text below reveal cross-country differences, identify underlying factors driving CSR adoption, and classify businesses into distinct CSR integration clusters. It will be described that key CSR dimensions, such as organizational culture, brand sustainability, and risk management, exhibit both commonalities and variations across countries, offering insights for tailoring CSR strategies. Additionally, firm-specific attributes such as size, sector, and multinational integration will be identified as significant determinants of CSR practices and will provide context for understanding regional and national dynamics.

4.1 Cross-country differences in CSR impacts

The first part of this study describes cross-country differences in the impact of CSR practices on business performance and sustainability in the Czech Republic, Poland and Slovakia addressing the research question RQ1 (What are the differences in CSR impacts across the three Visegrad countries?) and tests the associated hypotheses of no statistically significant difference in the impact of CSR implementation (CSR-IMP01–CSR-IMP10) on performance and sustainability among the Visegrad. Non-parametric statistical techniques, including the Kruskal-Wallis test and post hoc pairwise comparisons with Bonferroni correction, are employed to evaluate these hypotheses, ensuring robust identification of variations across the ten CSR dimensions with the aim to provide insights for tailoring CSR strategies for national and regional contexts.

Analysing the variable (CSR-IMP01), *CSR-driven organizational culture*, the significant differences were identified across the Visegrad countries ($p < 0.001$) and Slovakia exhibits the strongest impact, outperforming the Czechia ($p = 0.002$) and Poland ($p = 0.004$), while no significant difference was observed between the Czechia and Poland ($p = 1.000$). Crosstab analysis reveals that 50.4% of Slovak businesses report a 'Strong impact,' with no responses indicating 'Negligible impact,' signifying advanced CSR integration in the country. Conversely, 28% of Polish businesses report 'No impact,' reflecting weak CSR alignment with organizational culture, while Czechia falls in between, with responses concentrated in the 'Average impact' (39.2%) and 'Strong impact' (21.6%) categories, suggesting moderate CSR influence. Poland's low impact indicates barriers such as limited CSR awareness and prioritization, suggesting the need for strategic efforts to address information gaps and enhance potential benefits from stronger CSR implementation. Czechia's moderate performance reflects opportunities for targeted initiatives and for example, public-private collaborations to enhance CSR integration and localized CSR strategies. These should be beneficial for business in other countries too, since Slovaks should maintain and expand their CSR-driven cultural practices as a competitive advantage, Poland's would benefit from awareness campaigns and resource allocation to foster CSR alignment with organizational culture, and Czech Republic can strengthen its position through collaborations and targeted interventions.

In case of variable (CSR-IMP02) ***CSR and brand sustainability*** the analysis identifies significant differences across the three countries ($p < 0.001$) where Slovakia demonstrates the strongest impact, significantly outperforming the Czechia ($p = 0.000$) and Poland ($p = 0.000$), while no significant difference is observed between the Czechia and Poland ($p = 1.000$). Crosstab analysis reveals that Slovakia leads with 52% of businesses reporting a 'Strong impact' and 29.6% even stated 'Very strong impact,' with no responses in 'Negligible impact,' indicating robust CSR integration into brand-building strategies. Czechia shows a moderate CSR impact on brand sustainability, with most responses in 'Strong impact' (36.8%) and 'Average impact' (24.8%), and relatively fewer in 'Very strong impact' (13.6%). In contrast, Poland exhibits a polarized distribution, with a substantial 30.4% reporting 'No impact,' indicating weak CSR alignment, yet 24% indicating a 'Very strong impact,' reflecting significant variability. These findings suggest that Slovakia should capitalize on its strong CSR-brand alignment to further enhance consumer trust and brand equity, and Poland requires quite opposite efforts to bridge knowledge and resource gaps, focusing on raising awareness and improving the strategic implementation of CSR in branding. Czechia can strengthen its position by linking CSR to brand-building strategies and fostering collaborations to enhance CSR as a driver of brand sustainability.

Next, variable (CSR-IMP03) ***CSR-driven innovation and social impact realization*** reveal significant differences across countries ($p < 0.001$), too. Here, Slovakia demonstrates the strongest impact again, outperforming both the Czechia ($p = 0.001$) and Poland ($p = 0.000$), while no significant difference was observed between the Czechia and Poland ($p = 1.000$). In this indicator, Slovakia leads with 39.2% of businesses reporting a 'Strong impact' and 22.4% indicating a 'Very strong impact,' with no responses in 'Negligible impact,' which indicates robust integration of CSR into innovation and social impact strategies. On the other hand, Czechia again demonstrates moderate impacts, with the majority in 'Average impact' (37.6%), followed by smaller shares in 'Strong impact' (20.8%) and 'Very strong impact' (13.6%) and Poland shows even more dispersed pattern, with the highest proportion of responses in 'No impact' (29.6%), but notable shares in 'Strong impact' (24%) and 'Very strong impact' (14.4%) too. Slovakia's better performance reflects effective alignment between CSR and innovation, indicating a favourable business environment and investments in socially responsible research and development. In contrast, Poland's lower scores highlight challenges such as insufficient alignment of CSR with innovation frameworks or resource limitations, while Czechia occupies a middle ground, showing moderate progress and potential for further growth. This suggests that businesses in Slovakia should continue leveraging CSR to foster innovation and social impact. In Poland, targeted efforts are welcomed to align CSR with innovation strategies, supported by awareness campaigns, capacity-building initiatives, and stakeholder collaboration. Czechia can enhance its position by fostering partnerships between businesses, innovation hubs, and policymakers to better integrate CSR into innovation frameworks.

Analysis of the fourth variable (CSR-IMP04) ***CSR-integrated risk management*** enclosed significant differences in across countries ($p < 0.001$), highlighting varying levels of integration and effectiveness. Slovakia leads with the highest proportion of responses in the 'Strong impact' (46.4%) and 'Very strong impact' (8%) categories, with no responses in 'Negligible impact,' suggesting well-established CSR-driven risk management. In contrast, Poland has the largest share of 'No impact' responses (29.6%), reflecting foundational gaps in adopting CSR for risk management, likely due to limited awareness or resource constraints and Czechia demonstrates a more balanced distribution, with most responses in 'Average impact' (36.8%) and smaller shares in 'Strong impact' (24.8%) and 'Very strong impact' (6.4%), indicating moderate progress but growth opportunities. Here again, Slovakia should continue leveraging CSR-driven risk management as a competitive advantage to address market uncertainties and enhance resilience, and Polish businesses need to prioritize these initiatives and implement training programs and incentives to integrate CSR into their risk management strategies effectively. Meanwhile, Czech companies can further push, enhance these activities and align CSR practices with risk reduction goals.

Similarly, the analysis of (CSR-IMP05) ***Cost-efficiency via CSR practices*** reveals significant differences across countries ($p < 0.001$), underscoring distinct levels of CSR adoption for operational efficiency. Slovakia leads with the highest proportion of responses in the 'Strong impact' (40%) and 'Very strong impact' (14.4%) categories, and no responses in 'Negligible impact,' highlighting its effective use of CSR to drive cost-efficiency. Czechia exhibits a balanced distribution, with most responses in the 'Average impact' (32.8%) category and smaller shares in 'Strong impact' (22.4%) and 'Very strong impact' (8.8%), indicating moderate

but consistent integration and Poland demonstrates a more dispersed pattern, with a significant share of responses in the 'No impact' category (29.6%) and fewer responses in higher impact categories, reflecting weaker alignment between CSR and cost-efficiency. In this case, Slovakia's success may stem from a strategic focus on resource optimization and sustainable practices, providing a model for others in the region. Poland's lower impact highlights the need for initiatives to raise awareness of CSR's potential, and Czechia, occupying a middle ground again, shows space for improvement.

The deep dive into the problem of (CSR-IMP06) *Revenue growth and CSR integration* shows differences again ($p < 0.001$), pointing to diverse levels of success in aligning CSR with financial outcomes. In this variable Slovakia demonstrates the strongest impact, with the highest proportion of responses in the 'Strong impact' (51.2%) and 'Very strong impact' (21.6%) categories, and no responses in 'Negligible impact' indicating a well-established link between CSR practices and financial performance, potentially driven by strategic alignment and stakeholder engagement. Czechia shows a more balanced distribution, with most responses in the 'Average impact' category (36%), followed by 'Strong impact' (24%) and a smaller share in 'Very strong impact' (10.4%), reflecting moderate but consistent integration of CSR into revenue growth strategies. Poland, in contrast, exhibits a weaker impact, with a significant share of responses in the 'No impact' category (30.4%) and 'Negligible impact' (16%), which indicates challenges and the need for localized CSR strategies to optimize revenue growth across the region. Especially, Poland should prioritize building awareness and offering guidance to businesses for strategic CSR implementation. Also, a tailored approach could be beneficial for the whole region to help maximize the financial benefits of CSR integration.

In case of (CSR-IMP07), *Human capital and CSR empowerment* outcomes reveal significant differences too ($p < 0.001$), reflecting varied integration of CSR into workforce development strategies. Slovakia exhibits the strongest performance again, with 47.2% of respondents reporting a 'Strong impact' and 13.6% indicating a 'Very strong impact,' and no responses in the 'Negligible' category, indicating advanced integration of CSR initiatives into employee empowerment and workforce development in the country. Czechia demonstrates moderate impacts again, with most responses in the 'Average impact' (33.6%) and 'Strong impact' (29.6%) categories, and a smaller proportion reporting 'Very strong impact' (8%). In contrast, Poland shows a dispersed pattern, with 28% of responses in the 'No impact' category and fewer in higher-impact categories, emphasizing the importance of tailored CSR strategies to enhance human capital empowerment across the Visegrad region. Businesses in Slovakia should just continue leveraging CSR as a strategic tool to strengthen workforce capabilities and retain talent. But in Poland, they should acknowledge its potential for workforce development, which can help optimize the benefits of these activities and competitive advantage across the region.

The problem of (CSR-IMP08) *Investor engagement for CSR impact* brings similar outcomes, significant differences across countries ($p < 0.001$), indicating variations in how CSR practices align with investor priorities and attract financial support. In case of this engagement, Slovakia demonstrates the strongest performance, with 46.4% of responses in the 'Strong impact' category and 20.8% in the 'Very strong impact' category, and no responses in the 'Negligible impact.' This highlights Slovakia's advanced use of CSR as a strategy to attract and retain investors, in which Czechia shows a balanced distribution, with most responses in 'Average impact' (30.4%) and 'Strong impact' (25.6%), and a smaller share in 'Very strong impact' (12%). In contrast, Poland has 29.6% of responses in the 'No impact' category and relatively fewer responses in higher-impact categories, indicating weaker integration. These findings further emphasize the need for localized CSR strategies where businesses in Slovakia should continue in applied approach, In Poland they should focus on raising awareness among investors about the strategic and financial benefits of CSR, supported by improved reporting frameworks and targeted outreach and in Czechia they can enhance its position by developing structured frameworks that explicitly link CSR initiatives to investor priorities.

The analysis of (CSR-IMP09) impact of *CSR transparency and accountability* identifies significant differences across the Visegrad countries ($p < 0.001$), reflecting varied levels of integration and emphasis where Slovakia demonstrates the strongest performance, with 46.4% of responses in the 'Strong impact' category and 13.6% in 'Very strong impact,' and no responses in 'Negligible impact' pointing to well-established culture of accountability and transparency likely driven by stakeholder expectations since regulations are similar among EU. Despite, Czechia shows a more balanced distribution, with most responses in 'Average impact' (31.2%)

and ‘Strong impact’ (30.4%), but a smaller share (8.8%) in ‘Very strong impact,’ indicating moderate but less advanced CSR practices and Poland, however, has 28% of responses in the ‘No impact’ category and relatively few in higher-impact categories, suggesting weaker alignment. This further underlines the importance of tailoring CSR approaches since, in the changing framework of non-financial reporting, all companies in the EU must build trust and improve their frameworks to formalize their activities throughout the reports required by regulations. Therefore, companies in the region, and especially in Poland, must invest in capacity-building programs and address the gaps in their approaches.

Finally, the summarizing variable of (CSR-IMP10) *Competitive enhancement via CSR* pinpoint significant differences in the impact of CSR on competitive enhancement across the Visegrad countries ($p < 0.001$) positioning Slovakia as a leader as 46.4% of responses fall into the ‘Strong impact’ category and 13.6% into ‘Very strong impact,’ with no responses in ‘Negligible impact’ highlighting success in using CSR to gain a competitive edge, potentially driven by advanced integration of sustainability practices and alignment with stakeholder priorities. Here again, Czechia demonstrates a balanced but less pronounced performance, with most responses distributed between ‘Average impact’ (31.2%) and ‘Strong impact’ (30.4%), and only 8.8% reporting ‘Very strong impact.’ And again, Poland shows weaker alignment, with 28% of responses in the ‘No impact’ category and fewer in higher-impact categories, signalling a limited integration of CSR in competitive strategies. These findings suggest that tailored strategies are essential to optimize the competitive benefits of CSR in regions where the Slovak approach can serve as a regional benchmark. Aligning CSR more closely with business objectives could help to unlock significant potential for competitive gains in less advanced countries, such as Poland.

The cross-country analysis confirms differences in CSR impacts among Visegrad, with all ten dimensions showing p-values below 0.001, thereby rejecting the null hypothesis (H_0) in favor of the alternative (H_a). Slovakia emerges as a leader, with the strongest impacts across all dimensions, highlighting advanced CSR integration. Poland, by contrast, demonstrates weaker impacts in key areas, pointing to foundational challenges like limited awareness and strategic alignment. Czechia generally occupies a moderate position, reflecting steady but uneven progress across dimensions. These results highlight the necessity of localized CSR strategies that respond to specific national contexts but leverage regional synergies at the same time. Knowing and addressing existing disparities, businesses in the Visegrad region can optimize the performance and sustainability benefits of CSR and foster both national and regional growth.

4.2 Factor analysis

The second part of this study investigates the latent factors driving CSR impacts across the Visegrad region answering the research questions RQ2 (What are the underlying latent factors driving CSR impacts in the Visegrad region?) and RQ3 (How do these factors differ across Czechia, Poland, and Slovakia?), using PCA and reliability testing to examine the structural relationships among CSR dimensions. These methods assess the internal consistency of CSR variables and identify shared patterns in CSR impacts across the three countries, aiming to explore the interrelations among CSR dimensions and uncover latent structures that drive CSR impacts to provide insights for tailoring CSR strategies on both regional and national levels.

The reliability statistics for the CSR impact variables (CSR-IMP01 to CSR-IMP10) demonstrate excellent internal consistency across the Visegrad region ($\alpha = 0.965$) and within individual countries: Czechia ($\alpha = 0.960$), Poland ($\alpha = 0.979$), and Slovakia ($\alpha = 0.921$). Principal Component Analysis (PCA) here reveals that a single component accounts for a substantial percentage of the variance in CSR impacts across the region (76.4%) and within all individual countries separately: Czechia (73.9%), Poland (84.3%), and Slovakia (59.4%). The existence of a single component in every tested case suggests that CSR impacts are primarily driven by a unified underlying factor, though Slovakia’s lower percentage indicates greater variability and less cohesive CSR integration. High component loadings across the Visegrad region reinforce the consistency of CSR impacts, with standout dimensions including CSR and brand sustainability impact (CSR-IMP02: 0.895) and Human capital empowerment (CSR-IMP07: 0.897).

Here, analysis exhibits the existence of the strongest component loadings and lowest uniqueness values in Poland, with Competitive enhancement (CSR-IMP10: 0.939) and Risk management (CSR-IMP04: 0.934) emerging as key CSR drivers. Czechia demonstrates uniformly high loadings across all dimensions (CSR-IMP01 to CSR-IMP10: 0.811–0.899), reflecting a balanced approach to CSR integration. Slovakia, however, shows lower loadings for financial dimensions such as cost-efficiency (CSR-IMP05: 0.777) and revenue growth (CSR-IMP06: 0.759), alongside higher uniqueness values, indicating fragmented or evolving CSR practices. Dimensions such as organizational culture (CSR-IMP01: 0.858), brand sustainability (CSR-IMP02: 0.895), and risk management (CSR-IMP04: 0.891) consistently show high loadings across regions, underscoring their centrality to effective CSR strategies.

The existence of a unified CSR framework across the Visegrad region supports our previous recommendation to boost opportunities for regional collaboration and knowledge-sharing. In contrast with previous analysis, here can Poland's strong integration of CSR into competitive (CSR-IMP10: 0.939) and transparency strategies (CSR-IMP09: 0.916) can serve as a model for other countries, while Slovakia's lower cohesion highlights the need for tailored efforts to strengthen CSR's financial and strategic alignment. Prioritizing high-impact dimensions like organizational culture (CSR-IMP01: 0.858) and brand sustainability (CSR-IMP02: 0.895) could enhance CSR effectiveness across regions which further underscores the importance of harmonizing CSR strategies to amplify both regional and national benefits (Table 1).

Table 1. Principal Component Analysis- Component Loadings and Component Statistics

	Visegrad region		Czechia		Poland		Slovakia	
% of Variance	76.4		73.9		84.3		59.4	
	Component 1	Uniqueness	Component 1	Uniqueness	Component 1	Uniqueness	Component 1	Uniqueness
CSR-IMP01 CSR-driven organizational culture impact	0.858	0.264	0.847	0.283	0.900	0.190	0.856	0.267
CSR-IMP02 CSR and brand sustainability impact	0.895	0.199	0.852	0.273	0.915	0.162	0.819	0.329
CSR-IMP03 Innovation and social impact realization	0.865	0.252	0.869	0.244	0.906	0.180	0.800	0.360
CSR-IMP04 CSR-integrated risk management impact	0.891	0.205	0.858	0.263	0.934	0.128	0.789	0.378
CSR-IMP05 Cost-efficiency via CSR practices impact	0.845	0.286	0.811	0.341	0.908	0.176	0.777	0.396
CSR-IMP06 Revenue growth and CSR integration impact	0.870	0.243	0.850	0.278	0.905	0.180	0.759	0.423
CSR-IMP07 Human capital and CSR empowerment impact	0.897	0.195	0.892	0.205	0.928	0.138	0.742	0.449
CSR-IMP08 Investor engagement for CSR impact	0.850	0.278	0.823	0.322	0.928	0.138	0.737	0.458
CSR-IMP09 CSR transparency and accountability impact	0.877	0.230	0.892	0.204	0.916	0.161	0.722	0.479
CSR-IMP10 Competitive enhancement via CSR impact	0.892	0.204	0.899	0.191	0.939	0.118	0.690	0.524
Note. 'varimax' rotation was used								

Source: own elaboration

The results of the factor analysis on the country and regional level reveal a unified structure underlying CSR impact across the Visegrad region, where a single latent factor explains a significant proportion of the variance in CSR impacts with consistently high component loadings across key dimensions such as brand sustainability, organizational culture, and risk management. These outcomes suggest that CSR impacts are largely driven by shared patterns of adoption and integration across the region, although notable differences still exist among countries.

On the national level, it is demonstrated by strong CSR alignment in competitive enhancement and transparency in Poland, where advanced integration of these practices can be expected. In contrast, Slovakia, while exhibiting high loadings in several dimensions, shows variability in financial aspects such as cost-efficiency and revenue growth, reflecting evolving CSR practices. Czechia presents balanced but moderate integration of CSR impacts, highlighting potential for further improvement and development.

4.3 Cluster analysis

The third part of this study complement previous part and examines the categorization of businesses based on their levels of CSR integration, addressing the research questions RQ4 (How can businesses in the Visegrad region be categorized based on CSR integration levels?), RQ5 (What are the defining characteristics of each CSR cluster?) and RQ6 (How do these clusters vary across countries and firm-specific attributes?). As a tool, the Principal Component Analysis (PCA) is used to derive factor scores that represent the core variance of CSR-related variables. Using these scores, the K-means clustering algorithm identifies distinct CSR profiles among the Visegrad region and businesses in Czechia, Poland, and Slovakia separately. This analysis highlights variations in CSR integration levels and explores how firm attributes (such as size, sector, and multinational status) influence cluster characteristics, which enable us to provide insights for enhancing CSR adoption and tailoring strategies to the unique contexts of each cluster and country.

The cluster analysis applied on the level of the Visegrad in general, identifies two distinct groups based on the REGR factor score, representing two diverse CSR profiles in the region:

- **CE Cluster 1 ‘Integrated CSR practices’:** Centered at 1.65789, this cluster represents the majority of businesses with well-integrated CSR strategies across dimensions like brand sustainability, organizational culture, and competitive enhancement. This group includes 289 businesses (77.1%), primarily from Slovakia (117 cases, 40.5%), with lower representation from Czechia (91 cases, 31.5%) and Poland (81 cases, 28%). Cluster 1 businesses are larger, with strong representation of multinational corporations (40.1%) acting under the legal form of Limited Liability Company (66.4%), and higher turnover categories, such as medium (23.2%) and large turnover (13.5%). Sectors are balanced across trade (31.1%), service (33.9%), and production (35%), reflecting widespread CSR adoption. These businesses typically exhibit well-integrated CSR practices across dimensions.
- **CE Cluster 2 ‘Emerging CSR practices’:** Centered at -1.98217, this cluster representing a smaller group of 86 businesses (22.9%), with less integrated or more fragmented CSR approaches typically from Poland (44 cases, 51.2%) and Czechia (34 cases, 39.5%), with minimal representation from Slovakia (8 cases, 9.3%). These firms are predominantly local (83.7%), smaller enterprises, such as microenterprises (33.7%), and lower turnover categories, including micro turnover (26.7%). Sectors are skewed toward service (45.3%) and trade (26.7%) since family businesses (26.7%) and Sole Proprietorships (13.9%) are more prominent, indicating resource constraints in adopting CSR.

The clustering process in this case converged in four iterations, with minimal movement in cluster centers, indicating well-defined and stable groupings. The ANOVA results ($F = 1079.107$, $p < 0.001$) confirm significant differences between clusters, though these results are descriptive due to the method’s optimization of differences. The first cluster reflects strong CSR integration across dimensions and can serve as a model for CSR best practices in the Visegrad region, while the second cluster highlights businesses with emerging or fragmented CSR requiring tailored strategies, such as education and financial support, to enhance CSR implementation.

The specific country analysis in Czechia identifies two distinct CSR clusters, which again reflect variations in CSR integration and practices:

- **CZ Cluster 1 ‘Emerging CSR practices’:** Initial centre at -2.03940, converging to a final center of -1.29146, with 36 cases (28.8% of the total) represents in Czechia businesses with limited or developing CSR practices realized mostly by local companies (77.8%), concentrated in the service (50%), using Limited Liability Companies (69.4%) legal form. They tend to have smaller turnover (44.4% in the €1M–€50M range) and include microenterprises (25%) and small enterprises (22.2%) that are typically non-family businesses (77.8%), with male leadership (91.7%) and relatively young, since they were established mostly in 1991–2000 (36.1%) and 2011–2020 (33.3%). This group represents Czech businesses facing resource constraints and structural challenges in adopting robust CSR practices.

- **CZ Cluster 2 ‘Integrated CSR practices’:** Initial centre at 1.93843, converging to a final center of 0.52239, with 89 cases (71.2% of the total) this cluster can be characterized by advanced CSR integration and broad alignment with strategic goals. While most of these businesses are still local (67.4%), there is a higher proportion of multinational corporations (32.6%) compared to Cluster 1. These companies are typically larger (with medium (22.5%) and extra-large enterprises (23.6%)), operating predominantly in services (40.4%) as Limited Liability Companies (66.3%) and their turnover is spread across categories, with 47.2% in the €1M–€50M range and 11.2% in € 10 B+. Established between 1991–2000 (39.3%) and 2011–2020 (28.1%), these businesses reflect a mix of older and newer firms, with leadership that includes a small but notable proportion of female CEOs (11.2%).

Based on these results, efforts in Czechia should focus on enhancing CSR adoption in Cluster 1, where policymakers can provide financial incentives, training programs, and awareness campaigns to address their gaps. Cluster 2 businesses, with advanced CSR integration and multinational connections, can serve as role models and mentors to smaller firms, fostering knowledge-sharing and collaboration.

The analysis of the situation in Poland similarly identifies two distinct CSR clusters:

- **PL Cluster 1 ‘Emerging CSR practices’:** This cluster includes 44 businesses (35.2%), centred at -1.21016, representing firms with limited or developing CSR practices. Most of these are local companies (88.6%), predominantly formalized as Limited Liability Companies (59.1%) operating in service (45.5%) sectors. They tend to be smaller firms, with 66% categorized as micro or small enterprises, and financially constrained, with 70.4% reporting micro (€0–€1M) or small (€1M–€50M) turnover. Many are younger businesses, established after 2000 (61.4%), and a significant portion are family-owned (34.1%) with predominantly male (81.8%) leadership. It can be said that these businesses face resource and structural challenges, requiring support to formalize CSR practices.
- **PL Cluster 2 ‘Integrated CSR practices’:** Cluster 2 in Poland includes 81 businesses (64.8%), centred at 0.65737, representing firms with advanced CSR strategies, driving best practices across industries. A larger proportion of these entities are multinational corporations (37%), which reflects access to global CSR frameworks. The cluster features Limited Liability Companies (60.5%), with high representation across service (40.7%), typically larger entities (53.1%) categorized as large or extra-large, and financially robust, with 50.6% reporting medium (€50M–€500M) or higher turnover. They include a mix of older and newer firms, mostly established between 1991 and 2010 (64.2%). Leadership is predominantly male (81.5%) but with a higher proportion of female CEOs (18.5%) compared to Cluster 1, demonstrating advanced CSR integration across dimensions and sectors.

Cluster analysis in Poland suggests that the first type of businesses require tailored interventions, such as financial incentives, CSR education, and capacity-building, to overcome resource and structural barriers to CSR adoption. Special attention in Poland should focus on supporting smaller, local firms, particularly in the service. Cluster 2 businesses, with their advanced CSR practices, can serve as role models, sharing best practices and mentoring Cluster 1 firms to enhance their overall sustainability outcomes, while leveraging Cluster 2’s strengths will solidify Poland’s leadership in CSR integration.

For Slovakia, conducted cluster analysis confirmed the existence of two similar clusters as in the rest of the region:

- **SK Cluster 1 ‘Integrated CSR practices’:** Cluster 1 includes 117 businesses (93.6%), representing the majority of Slovak firms with well-integrated CSR practices. Nearly half of these are multinational corporations (48.7%), demonstrating a balance of global and local CSR drivers. These businesses are predominantly Limited Liability Companies (70.1%), with a strong representation of production (41.9%). Companies vary widely in size and turnover, ranging from microenterprises (17.9%) to extra-large enterprises (21.4%), reflecting broad CSR adoption. Most were established between 1991–2000 (44.4%) and 2001–2010 (31.6%), with leadership predominantly male (86.3%). This cluster’s dominance reflects Slovakia’s mature and advanced CSR landscape, positioning it as a regional leader.
- **SK Cluster 2 ‘Emerging CSR practices’:** Cluster 2 in Slovakia consists of only 8 businesses (6.4%), representing a small minority with limited or fragmented CSR practices. The majority are local

companies (87.5%) with Limited Liability Companies (75%) legal form, operating in production (50%). These businesses are primarily smaller, with microenterprises (50%) dominating and most reporting micro turnover (€0–€1M, 62.5%). Many are family-owned (62.5%) and established after 2001 (87.5%), suggesting relatively young businesses with resource constraints. Leadership is predominantly male (75%), but female representation is notable. This cluster reflects the challenges faced by small, locally focused businesses in integrating CSR practices.

The dominance of Cluster 1 underscores Slovakia's strong CSR integration, offering opportunities to position its businesses as regional CSR benchmarks. These firms can mentor smaller, less developed businesses in Cluster 2, fostering collaboration and knowledge sharing. Targeted interventions for Cluster 2, such as financial incentives, CSR education, and exposure to global frameworks, are strongly recommended since they would be essential to overcome resource and structural barriers (Figure 1). By bridging the gap between clusters, Slovakia can ensure a cohesive CSR landscape and reinforce its position as a sustainability leader in the Visegrad region.

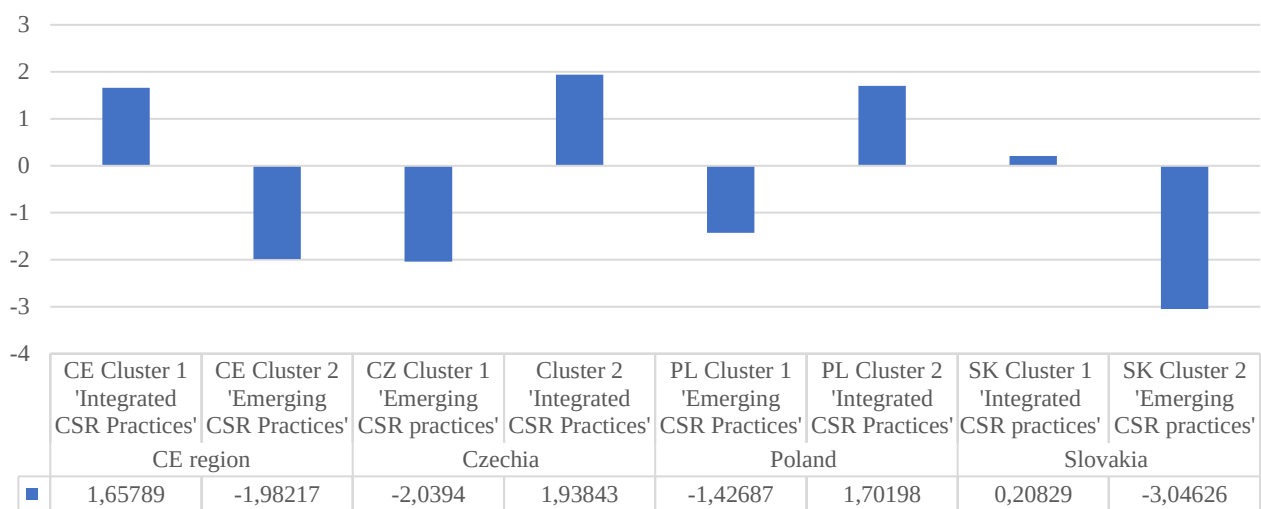


Figure 1. Initial cluster centres for the Visegrad region, Czechia, Poland, and Slovakia

Source: own elaboration

Conducted cluster analysis identified two primary groups of businesses across the Visegrad region and within each country: businesses with integrated CSR practices and businesses with emerging or fragmented CSR practices. This consistent structure indicates that, despite regional diversity, similar CSR approaches can be observed throughout the region. However, it must be highlighted that the representation of these groups varies by country, reflecting differences in local conditions, resources, and priorities. Among regions, Slovakia stands out with a dominant share of businesses in the integrated CSR cluster, showcasing advanced CSR adoption supported by stakeholder engagement. In contrast, Czechia and Poland have a higher proportion of businesses in the emerging CSR cluster when compared with Slovakia, often characterized by resource limitations, a local focus, and less strategic integration of CSR.

Despite the highest number of 'integrated' types of business being visible in every country separately, as well as generally in the region. These advanced businesses in each country provide a valuable foundation for mentoring and sharing best practices with units in the emerging cluster. Targeted interventions such as financial incentives, educational programs, and public-private partnerships can bridge the gap between the clusters, helping less developed businesses to improve their CSR implementation. Simultaneously, capitalizing on the strengths of businesses with advanced CSR practices has the potential to boost competitiveness and sustainability at both national and regional levels.

5. Discussion

This study describes the impacts of CSR implementation in the Visegrad region while describing cross-country differences and typical clusters of companies using a similar approach. Our outcomes confirmed that Slovakia consistently shows higher impacts across all measured CSR performance metrics compared to Czechia and Poland, which is to some extent in line with the previous literature, confirming that the concept of corporate social responsibility in Slovakia has evolved significantly over the past decades. But, regarding this, it must be mentioned that the significant role in promoting CSR practices within the country is played by foreign companies or local subsidiaries of foreign multinationals entering the Slovak market after 1991 (Przytuła et al., 2019; Dubravská et al., 2021).

Kádeková et al. (2020) add that the commitment to CSR in Slovakia is evident through various activities such as support for local communities, environmental protection, employee welfare, and ethical business practices. But Falkner (2010) argues with the statement that Slovakia's institutional performance in enforcing EU social standards has major shortcomings, like the Czech Republic, Hungary, and Slovenia. Wójcik-Czerniawska and Grzymała (2023), on the other hand, highlight that Czechia, although identified as a country with a moderate approach in our research, has a higher innovation index and more statutory support for economic development at the regional and local governments when compared to Slovakia and Poland.

At the same time, our outcomes partially support previous research of Gavurová et al (2022), who stated that CSR strategies are most used in Hungary, Poland, and Slovakia, with the least use in the Czech Republic. But, the superior position of Poland identified by this study, we cannot confirm at all. Despite our outcomes presenting Slovakia as a regional leader, we must admit that CSR initiatives here can still be more effectively integrated into organizational culture, which can lead to a better overall impact of CSR on performance and sustainability, creating a synergic effect. Similar results were achieved by Govindan (2022), who aimed to implement CSR 40.0 practices with the outcome that ownership policy and rights enhance better integration of digitization with a company's conventional CSR, correlating with improved performance and sustainability, which, to a certain extent, supports the synergic effect too. Here, Kádeková et al. (2022) bring up that almost 90 % of food enterprises in Slovakia actively apply the concept of CSR in everyday life, with recycling being the most frequently used activity in environmental protection, which supports our outcomes too.

We believe that some form of establishment of a unified CSR framework across the Visegrad region can significantly enhance regional collaboration and policy harmonization since creating of unified CSR framework can help to CSR business practices, enhance regional sustainability goals, and help to foster a competitive advantage for firms, especially those operating in multiple countries within the region. This alignment is very important as it has the potential to help businesses boost their CSR initiatives, reduce operational complexities, and enhance their reputation across borders (Carroll & Shabana, 2010; Lii et al., 2011).

Furthermore, a unified approach can lead to shared best practices and resources, eventually promoting a more sustainable business environment in the region that benefits both businesses and local communities, as it was previously described for other geographic regions (Abdullah & Aziz, 2013). The implications for business, regardless they are multinational corporations or local companies, can be very favourable since they can benefit from strategies which enhance their market positioning using principles positively accepted by stakeholders in the region. This not only aids in compliance with varying national regulations aimed to stakeholders on the government and policymaking level but also strengthens their brand image as socially responsible entities positively accepted by other groups of stakeholders. By adopting this regional perspective on implementing CSR, businesses can also mitigate risks positively associated with disparate regulatory environments and foster greater investor confidence and consumer loyalty (Singh et al., 2017).

The identification of two clusters across the Visegrad region, as well as inside monitored countries, highlights the varying degrees of CSR maturity within the region while indicating similarities in fundamental approaches to CSR. The 'Integrated CSR practices' cluster reflects a more advanced understanding and implementation of CSR, characterized by strategic alignment with business objectives and stakeholder engagement. Conversely, the 'Emerging CSR practices' cluster represents an initial stage of CSR adoption, where businesses are beginning

to recognize the importance of social responsibility but often lack comprehensive frameworks and strategies (Hąbek, 2019). This duality and outcomes of the first part of our study suggest that while the Visegrad countries face common challenges and opportunities in CSR, tailored strategies may be necessary to address the specific needs and contexts of each nation. Slovakia's strong representation in the 'Integrated CSR cluster' positions it as a potential regional leader in CSR practices. In our opinion, this prominence does not have a single reason, but it may stem from a combination of factors, including active civil society engagement and a growing awareness among businesses of the benefits of CSR (Skýpalová et al., 2023). As a leader, Slovakia can serve as a model for Czechia and Poland and help companies in these neighbored countries to enhance their approaches. Inspiring can be mainly demonstrated by how integrated CSR practices can enhance corporate reputation, stakeholder trust, and ultimately, financial performance.

Lessons from Slovakia's success could include the importance of aligning CSR initiatives with national development goals and opening collaboration between the public and private sectors to create a conducive environment for CSR growth (Dau et al., 2021). On the other hand, it should be noted that businesses in the 'Emerging CSR cluster', particularly in Poland and the Czech Republic, face significant structural and resource constraints that hinder their ability to adopt widespread CSR practices. These challenges may include limited financial resources, lack of expertise, and insufficient regulatory frameworks that do not incentivize CSR adoption (Zhang et al., 2019).

To bridge the gap between the 'Integrated' and 'Emerging' CSR clusters, specific measures could be implemented, such as providing financial incentives for CSR initiatives, improving access to training and resources for businesses, and promoting awareness campaigns that highlight the benefits of CSR (Nandy et al., 2022). Additionally, networking and creating partnerships between established firms and those in the 'Emerging group' could facilitate knowledge transfer and capacity building. These tailoring CSR strategies not only enhance their effectiveness but also align corporate initiatives with local expectations and norms, thereby fostering stronger community relations and enhancing corporate reputation (Lii & Lee, 2011).

Conclusions

This study discovered the impact of CSR practices on business performance and sustainability in the Visegrad region, addressing the topics of cross-country differences, latent factors driving CSR impacts, and clusters of businesses based on their CSR integration. The statistical analysis unveils significant cross-country variations in CSR impacts, with Slovakia leading in CSR integration across all ten dimensions, while Poland faced foundational challenges such as limited awareness and strategic alignment. Czechia exhibited moderate but uneven progress. Ongoing factor analysis identified a consistent CSR framework based on the monitored dimensions, like brand sustainability and human capital empowerment. Subsequent cluster analysis revealed two specific CSR profiles in the Visegrad region and in selected countries separately.

Analysis on both levels identifies two specific and relatively similar groups, which can be named as 'Integrated' and 'Emerging' CSR practices, while these are surprisingly consistent across the region. Despite, same name in selected countries, they slightly differ in their representation, where, for example, Slovakia shows the strongest presence of 'integrated' business units. These findings contribute to the theoretical understanding of CSR by demonstrating its multidimensional impact across diverse businesses and filling the gap in the understanding of this problem in the specific context of the Visegrad region.

Practically, this study emphasizes the importance of localized strategies to address country-specific challenges while showing space for tactics aiming to regional synergies. In the process of CSR enhancement in the region, Slovak businesses can serve as benchmarks for CSR excellence, offering valuable insights for improving CSR integration in Czechia and Poland. Based on these results, policymakers should prioritize interventions to bridge disparities in CSR adoption across regions, focusing on financial incentives, training programs, and awareness campaigns for businesses in emerging CSR clusters.

Regional collaboration can be very helpful in the process, especially when facilitating knowledge-sharing and standardization of CSR practices. For business entities in the Visegrad region, especially those in the 'Emerging'

group, we recommend targeting identified high-impact areas such as brand sustainability and organizational culture, which have the potential to enhance performance and promote trust of their stakeholders.

Here, it should be clearly stated that this study has some limitations. Because it relies exclusively on data self-reported by participants of the study, we should acknowledge the existence of potential biases based on the underrepresentation of participants who are not interested or informed about the topic of corporate social responsibility. Moreover, our focus on Czechia, Poland, and Slovakia, although it creates a logical basis for this study, limits the generalizability of achieved findings to other regions or countries. Therefore, our outcomes must be interpreted with caution, and future studies are recommended to address these limitations by incorporating broader geographical scopes. Future research could also explore CSR impacts at the industry level, on the cross-regional stage, or investigate external factors influencing CSR adoption (e.g., economic crises). The examination of the long-term effects of CSR on organizational resilience and stakeholder engagement would also be a beneficial and interesting idea for future studies, especially in the Visegrad region.

References

- Abdallah, A.B., & Al-Ghwayeen, W.S. (2020). Green supply chain management and business performance: The mediating roles of environmental and operational performances. *Business Process Management Journal*, 26(2), 489-512. <https://doi.org/10.1108/BPMJ-03-2018-0091>
- Abdullah, Z., & Aziz, Y. (2013). Institutionalizing corporate social responsibility: Effects on corporate reputation, culture, and legitimacy in Malaysia. *Social Responsibility Journal*, 9(3), 344-361. <https://doi.org/10.1108/SRJ-05-2011-0110>
- Akbari, M., Mehrali, M., SeyyedAmiri, N., Rezaei, N., & Pourjam, A. (2020). Corporate social responsibility, customer loyalty and brand positioning. *Social Responsibility Journal*, 16(5), 671-689. <https://doi.org/10.1108/SRJ-01-2019-0008>
- Al Kerdawy, M. M. A. (2019). The role of corporate support for employee volunteering in strengthening the impact of green human resource management practices on corporate social responsibility in the Egyptian firms. *European Management Review*, 16(4), 1079-1095. <https://doi.org/10.1111/emre.12310>
- Aoyama, H. (1954). A study of stratified random sampling. *Ann. Inst. Stat. Math*, 6(1), 1-36. https://www.ism.ac.jp/editsec/aism/pdf/006_1_0001.pdf
- Arabska, E., & Terziev, V. (2016). Organic production business model and the concept of corporate social responsibility. *Journal of Economic Development, Environment and People*, 5(2), 23-35. <https://doi.org/10.26458/jedep.v5i2.496>
- Aranki, D. H., Suifan, T. S., & Sweis, R. J. (2019). The relationship between organizational culture and organizational commitment. *Modern Applied Science*, 13(4), 137-154. <https://doi.org/10.5539/mas.v13n4p137>
- Armstrong, R. A. (2014). When to use the Bonferroni correction. *Ophthalmic and Physiological Optics*, 34(5), 502-508. <https://doi.org/10.1111/opo.12131>
- Bacinello, E., Tontini, G., & Alberton, A. (2021). Influence of corporate social responsibility on sustainable practices of small and medium-sized enterprises: Implications on business performance. *Corporate Social Responsibility and Environmental Management*, 28(2), 776-785. <https://doi.org/10.1002/csr.2087>
- Barnett, M. L., Henriques, I., & Husted, B. W. (2020). Beyond good intentions: Designing CSR initiatives for greater social impact. *Journal of Management*, 46(6), 937-964. <https://doi.org/10.1177/0149206319900539>
- Batterton, K. A., & Hale, K. N. (2017). The Likert scale what it is and how to use it. *Phalanx*, 50(2), 32-39. <https://www.jstor.org/stable/26296382>
- Bhardwaj, P., Chatterjee, P., Demir, K. D., & Turut, O. (2018). When and how is corporate social responsibility profitable?. *Journal of Business Research*, 84, 206-219. <https://doi.org/10.1016/j.jbusres.2017.11.026>
- Brick, J. M. (2017). Sampling to minimize nonresponse bias. In *The Palgrave handbook of survey research* (pp. 23-28). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-54395-6_5
- Bu, X., Cherian, J., Han, H., Comite, U., Hernández-Perlines, F., & Ariza-Montes, A. (2022). Proposing employee level CSR as an enabler for economic performance: The role of work engagement and quality of work-life. *Sustainability*, 14(3), 1354. <https://doi.org/10.3390/su14031354>

- Caputo, F., Pizzi, S., Ligorio, L., & Leopizzi, R. (2021). Enhancing environmental information transparency through corporate social responsibility reporting regulation. *Business Strategy and the Environment*, 30(8), 3470-3484. <https://doi.org/10.1002/bse.2814>
- Carroll, A. B., & Shabana, K. M. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews*, 12(1), 85-105. <https://doi.org/10.1111/j.1468-2370.2009.00275.x>
- Chatzitheodorou, K., Skouloudis, A., Evangelinos, K., & Nikolaou, I. (2019). Exploring socially responsible investment perspectives: A literature mapping and an investor classification. *Sustainable Production and Consumption*, 19, 117-129. <https://doi.org/10.1016/j.spc.2019.03.006>
- Chen, T., Dong, H., & Lin, C. (2020). Institutional shareholders and corporate social responsibility. *Journal of Financial Economics*, 135(2), 483-504. <https://doi.org/10.1016/j.jfineco.2019.06.007>
- Cho, S. Y., & Lee, C. (2019). Managerial efficiency, corporate social performance, and corporate financial performance. *Journal of Business Ethics*, 158, 467-486. <https://doi.org/10.1007/s10551-017-3760-7>
- Colovic, A., Henneron, S., Huettinger, M., & Kazlauskaitė, R. (2019). Corporate social responsibility and SMEs. *European Business Review*, 31(5), 785-810. <https://doi.org/10.1108/eb-01-2017-0022>
- Çorum, E. (2023). The validity and reliability of the occupational performance questionnaire. *Turkish Journal of Science and Health*. <https://doi.org/10.51972/tfsd.1247201>
- Cowan, K., & Guzman, F. (2020). How CSR reputation, sustainability signals, and country-of-origin sustainability reputation contribute to corporate brand performance: An exploratory study. *Journal of Business Research*, 117, 683-693. <https://doi.org/10.1016/j.jbusres.2018.11.017>
- Cragin, M. H., Palmer, C. L., Carlson, J. R., & Witt, M. (2010). Data sharing, small science and institutional repositories. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 368(1926), 4023-4038. <https://doi.org/10.1098/rsta.2010.0165>
- Curry, R., Yoon, A., Jeng, W., & Qin, J. (2016). Untangling data sharing and reuse in social sciences. *Proceedings of the Association for Information Science and Technology*, 53(1), 1-5. <https://doi.org/10.1002/pa2.2016.14505301025>
- Dartey-Baah, K., & Amoako, G. K. (2021). A review of empirical research on corporate social responsibility in emerging economies. *International Journal of Emerging Markets*, 16(7), 1330-1347. <https://doi.org/10.1108/IJOEM-12-2019-1062>
- Dau, L., Moore, E., Doh, J., & Soto, M. (2021). Does global integration stimulate corporate citizenship? the effect of international trade agreements and regulatory quality on state and private firm adoption of CSR standards. *Journal of International Business Policy*, 5(3), 328-352. <https://doi.org/10.1057/s42214-021-00104-x>
- Des Jardine, M. R., Shi, W., & Westphal, J. (2024). Shareholder politics: The influence of investors' political affiliations on corporate social responsibility. *Journal of Management*, 50(5), 1569-1598. <https://doi.org/10.1177/0149206322115116>
- Devie, D., Liman, L. P., Tarigan, J., & Jie, F. (2020). Corporate social responsibility, financial performance and risk in Indonesian natural resources industry. *Social Responsibility Journal*, 16(1), 73-90. <https://doi.org/10.1108/SRJ-06-2018-0155>
- Díaz, O., Riquelme, G., & González, G. (2021). Sharing research data: an analysis of the interest of social scientists in the context of a Mexican university. *Social Sciences*, 10(10), 390. <https://doi.org/10.3390/socsci10100390>
- Díaz-Carrion, R., López-Fernández, M., & Romero-Fernandez, P. M. (2020). Sustainable human resource management and employee engagement: A holistic assessment instrument. *Corporate Social Responsibility and Environmental Management*, 27(4), 1749-1760. <https://doi.org/10.1002/csr.1921>
- Dubravská, M., Marchevská, M., Vašaničová, P., & Kotulič, R. (2020). Corporate social responsibility and environmental management linkage: An empirical analysis of the Slovak Republic. *Sustainability*, 12(13), 5431. <https://doi.org/10.3390/su12135431>
- Espasandín-Bustelo, F., Ganaza-Vargas, J., & Díaz-Carrion, R. (2021). Employee happiness and corporate social responsibility: The role of organizational culture. *Employee Relations: The International Journal*, 43(3), 609-629. <https://doi.org/10.1108/ER-07-2020-0343>
- Essam, F., El, H., & Ali, S. R. H. (2022). A comparison of the pearson, spearman rank and kendall tau correlation coefficients using quantitative variables. *Asian J. Probab. Stat*, 36-48. Article no.AJPAS.92398. <https://doi.org/10.9734/ajpas/2022/v20i3425>

- Falkner, G. (2010). Institutional Performance and Compliance with EU Law: Czech Republic, Hungary, Slovakia and Slovenia. *Journal of Public Policy*, 30, 101-116. <https://doi.org/10.1017/S0143814X09990183>
- Franco, S., Caroli, M. G., Cappa, F., & Del Chiappa, G. (2020). Are you good enough? CSR, quality management and corporate financial performance in the hospitality industry. *International Journal of Hospitality Management*, 88, 102395. <https://doi.org/10.1016/j.ijhm.2019.102395>
- Gavurová, B., Schonfeld, J., Bilan, Y., & Dudáš, T. (2022). Study of the Differences in the Perception of the Use of the Principles of Corporate Social Responsibility in Micro, Small and Medium-Sized Enterprises in the V4 Countries. *Journal of Competitiveness*. <https://doi.org/10.7441/joc.2022.02.02>
- Goergen, M., Chahine, S., Wood, G., & Brewster, C. (2019). The relationship between public listing, context, multi-nationality and internal CSR. *Journal of Corporate Finance*, 57, 122-141. <https://doi.org/10.1016/j.jcorpfin.2017.11.008>
- Govindan, K. (2022). Theory Building Through Corporate Social Responsibility 40.0 for Achieving SDGs: A Practical Step Toward Integration of Digitalization With Practice-Based View and Social Good Theory. *IEEE Transactions on Engineering Management*, pp, 1-18. <https://doi.org/10.1109/TEM.2022.3155247>
- Greenacre, M., Groenen, P. J., Hastie, T., d'Enza, A. I., Markos, A., & Tuzhilina, E. (2022). Principal component analysis. *Nature Reviews Methods Primers*, 2(1), 100. <https://doi.org/10.1038/s43586-022-00184-w>
- Gromis di Trana, M., Fiandrino, S., & Yahiaoui, D. (2022). Stakeholder engagement, flexible proactiveness and democratic durability as CSR strategic postures to overcome periods of crisis. *Management Decision*, 60(10), 2719-2742. <https://doi.org/10.1108/MD-08-2021-1012>
- Gupta, S., Gallear, D., Rudd, J., & Foroudi, P. (2020). The impact of brand value on brand competitiveness. *Journal of Business Research*, 112, 210-222. <https://doi.org/10.1016/j.jbusres.2020.02.033>
- Hąbek, P. (2019). Development of corporate social responsibility in Visegrad group countries. *Scientific Papers of Silesian University of Technology Organization and Management Series*, 2019(138), 71-82. <https://doi.org/10.29119/1641-3466.2019.138.6>
- Hąbek, P., Sujová, E., Čierna, H., & ology, M. (2018). Comparative analysis of csr reporting practices in Poland and Slovakia. *Scientific Papers of Silesian University of Technology Organization and Management Series*, 2018(116), 51-65. <https://doi.org/10.29119/1641-3466.2018.116.4>
- Halkos, G., & Nomikos, S. (2021). Corporate social responsibility: Trends in global reporting initiative standards. *Economic Analysis and Policy*, 69, 106-117. <https://doi.org/10.1016/j.eap.2020.11.008>
- Halme, M., Rintamäki, J., Knudsen, J. S., Lankoski, L., & Kuisma, M. (2020). When is there a sustainability case for CSR? Pathways to environmental and social performance improvements. *Business & Society*, 59(6), 1181-1227. <https://doi.org/10.1177/0007650318755648>
- Hamza, S., & Jarboui, A. (2020). CSR: A moral obligation or a strategic behavior. *Corporate Social Responsibility*, 1-15. <https://doi.org/10.5772/intechopen.94471>
- Islam, T., Islam, R., Pitafi, A. H., Xiaobei, L., Rehmani, M., Irfan, M., & Mubarak, M. S. (2021). The impact of corporate social responsibility on customer loyalty: The mediating role of corporate reputation, customer satisfaction, and trust. *Sustainable Production and Consumption*, 25, 123-135. <https://doi.org/10.1016/j.spc.2020.07.019>
- Kádeková, Z., Košičiarová, I., Kubicová, Ľ., & Predanócyová, K. (2022). Sustainable approach within environmental protection and PR in food enterprises in Slovakia. *International Scientific Days*, 266-273. <https://doi.org/10.15414/isd2022.s3.05>
- Kádeková, Z., Savov, R., Košičiarová, I., & Valaskova, K. (2020). CSR activities and their impact on brand value in food enterprises in Slovakia based on foreign participation. *Sustainability*, 12(12), 4856. <https://doi.org/10.3390/su12124856>
- Kandpal, V., Jaswal, A., Santibanez Gonzalez, E. D., & Agarwal, N. (2024). Corporate Social Responsibility (CSR) and ESG Reporting: Redefining Business in the Twenty-First Century. In *Sustainable Energy Transition: Circular Economy and Sustainable Financing for Environmental, Social and Governance (ESG) Practices* (pp. 239-272). Cham: Springer Nature Switzerland. Print ISSN 2731-5509. https://doi.org/10.1007/978-3-031-52943-6_8
- Karwowski, M., & Raulinajtys-Grzybek, M. (2021). The application of corporate social responsibility (CSR) actions for mitigation of environmental, social, corporate governance (ESG) and reputational risk in integrated reports. *Corporate Social Responsibility and Environmental Management*, 28(4), 1270-1284. <https://doi.org/10.1002/csr.2137>

- Khan, S. A. R., Yu, Z., & Umar, M. (2021). How environmental awareness and corporate social responsibility practices benefit the enterprise? An empirical study in the context of emerging economy. *Management of Environmental Quality: An International Journal*, 32(5), 863-885. <https://doi.org/10.1108/MEQ-08-2020-0178>
- Khumalo, A. P., Raula, N. R., & Msosa, S. K. (2025). Customer perception of green marketing in the South African retail sector. *Insights into Regional Development*, 7(1), 83-92. <https://doi.org/10.70132/h6837445699>
- Khuong, M. N., Truong An, N. K., & Thanh Hang, T. T. (2021). Stakeholders and Corporate Social Responsibility (CSR) programme as key sustainable development strategies to promote corporate reputation—evidence from Vietnam. *Cogent Business & Management*, 8(1), 1917333. <https://doi.org/10.1080/23311975.2021.1917333>
- Kim, S., Lee, G., & Kang, H. G. (2021). Risk management and corporate social responsibility. *Strategic Management Journal*, 42(1), 202-230. <https://doi.org/10.1002/smj.3224>
- Kinderman, D. (2020). The challenges of upward regulatory harmonization: The case of sustainability reporting in the European Union. *Regulation & Governance*, 14(4), 674-697. <https://doi.org/10.1111/rego.12240>
- Koleva, P., Rodet-Kroichvili, N., David, P., & Marasova, J. (2010). Is corporate social responsibility the privilege of developed market economies? some evidence from central and eastern europe. *The International Journal of Human Resource Management*, 21(2), 274-293. <https://doi.org/10.1080/09585190903509597>
- Kozáková, J., Skýpalová, R., & Pieńkowski, D. (2024). Environmental responsibility of corporate management in the Visegrad region—comparative study of the Czech Republic, Poland and Slovakia. *Economics and Environment*. <https://doi.org/10.34659/eis.2023.87.4.692>
- Kozáková, J., Skýpalová, R., Nowotarska, A., Baum, R., Urbánová, M., Janšto, E., & Pieńkowski, D. (2023). *Corporate Social Responsibility in Business Practice of the Visegrad Region (Czechia, Poland, Slovakia)*. University of West Bohemia in Pilsen. <https://doi.org/10.24132/ZCU.2023.12075>
- Kreuter, F., Haas, G. C., Keusch, F., Bähr, S., & Trappmann, M. (2020). Collecting survey and smartphone sensor data with an app: Opportunities and challenges around privacy and informed consent. *Social Science Computer Review*, 38(5), 533-549. <https://doi.org/10.1177/0894439318816389>
- Kruskal, W. H., & Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis. *Journal of the American Statistical Association*, 47(260), 583-621. <https://doi.org/10.2307/2280779>
- Kucharska, W., & Kowalczyk, R. (2019). How to achieve sustainability?—Employee’s point of view on company’s culture and CSR practice. *Corporate Social Responsibility and Environmental Management*, 26(2), 453-467. <https://doi.org/10.1002/csr.1696>
- Kumar, V., & Srivastava, R. (2020). New perspectives on business model innovations in emerging markets. *Journal of the Academy of Marketing Science*, 48(5), 815-825. <https://doi.org/10.1007/s11747-019-00713-2>
- Le, T. T., Tran, P. Q., Lam, N. P., Tra, M. N. L., & Uyen, P. H. P. (2024). Corporate social responsibility, green innovation, environment strategy and corporate sustainable development. *Operations Management Research*, 17(1), 114-134. <https://doi.org/10.1007/s12063-023-00411-x>
- Lii, Y., & Lee, M. (2011). Doing right leads to doing well: when the type of csr and reputation interact to affect consumer evaluations of the firm. *Journal of Business Ethics*, 105(1), 69-81. <https://doi.org/10.1007/s10551-011-0948-0>
- Lii, Y., Wu, K., & Ding, M. (2011). Doing good does good? sustainable marketing of csr and consumer evaluations. *Corporate Social Responsibility and Environmental Management*, 20(1), 15-28. <https://doi.org/10.1002/csr.294>
- Lu, H., Liu, X., & Falkenberg, L. (2022). Investigating the impact of corporate social responsibility (CSR) on risk management practices. *Business & Society*, 61(2), 496-534. <https://doi.org/10.1177/0007650320928981>
- Lu, J., Liang, M., Zhang, C., Rong, D., Guan, H., Mazeikaite, K., & Streimikis, J. (2021). Assessment of corporate social responsibility by addressing sustainable development goals. *Corporate Social Responsibility and Environmental Management*, 28(2), 686-703. <https://doi.org/10.1002/csr.2081>
- Lu, J., Ren, L., Lin, W., He, Y., & Streimikis, J. (2019). Policies to promote corporate social responsibility (CSR) and assessment of CSR impacts. *Business Administration and Management*, 82 <https://doi.org/10.15240/tul/001/2019-1-006>
- Mack, N. (2005). Qualitative research methods: A data collector’s field guide. ISBN: 0-939704-98-6

- Mahmood, A., & Bashir, J. (2020). How does corporate social responsibility transform brand reputation into brand equity? Economic and noneconomic perspectives of CSR. *International Journal of Engineering Business Management*, 12, 1847979020927547. <https://doi.org/10.1177/1847979020927547>
- Mammadova, R. (2022). The Contextual Analysis of HRM Practices in Multinational Companies in the Czech Republic. *Organization and Human Capital Development*, 1(2), 1-15. <https://doi.org/10.31098/orcadev.v2i1.1120>
- Mannheimer, S., Pienta, A., Kirilova, D., Elman, C., & Wutich, A. (2018). Qualitative data sharing: data repositories and academic libraries as key partners in addressing challenges. *American Behavioral Scientist*, 63(5), 643-664. <https://doi.org/10.1007/s00418-023-02198-1>
- Masum, A., Aziz, H. H. H. A. A., & Hassan, M. (2020). Corporate social responsibility and its effect on community development: An overview. *J. Account. Sci*, 22, 35-40. <https://doi.org/10.9790/487X-2201053540>
- Meeker, W. Q., Escobar, L. A., & Pascual, F. G. (2021). Statistical methods for reliability data. John Wiley & Sons. <https://www.wiley.com/en-br/Statistical+Methods+for+Reliability+Data%2C+2nd+Edition-p-9781118115459>
- Mendes, T., Braga, V., Correia, A., & Silva, C. (2023). Linking corporate social responsibility, cooperation and innovation: the triple bottom line perspective. *Innovation & Management Review*, 20(3), 244-280. <https://doi.org/10.1108/INMR-03-2021-0039>
- Miethlich, B., & Oldenburg, A. G. (2019). How social inclusion promotes sales: An analysis of the example of employing people with disabilities. *Journal of Marketing Research and Case Studies*, 1-15. <https://doi.org/10.5171/2019.463316>
- Muhmad, S. N., & Muhamad, R. (2021). Sustainable business practices and financial performance during pre-and post-SDG adoption periods: A systematic review. *Journal of Sustainable Finance & Investment*, 11(4), 291-309. <https://doi.org/10.1080/20430795.2020.1727724>
- Muniz, F., Guzmán, F., Paswan, A., & Crawford, H. (2019). The immediate effect of corporate social responsibility on consumer-based brand equity. *Journal of Product & Brand Management*, 28(7), 864-879. <https://doi.org/10.1108/jpbm-09-2018-2016>
- Nahar, K., & Khurana, D. (2023). Corporate Social Responsibility. *Vidhyayana-An International Multidisciplinary Peer-Reviewed E-Journal*, 8(si6), 724-732.
- Nandy, M., Kuzey, C., Uyar, A., Lodh, S., & Karaman, A. (2022). Can csr mechanisms spur gri adoption and restore its lost value relevance? *Journal of Applied Accounting Research*, 24(4), 609-634. <https://doi.org/10.1108/jaar-03-2022-0068>
- Nazir, O., Islam, J. U., & Rahman, Z. (2021). Effect of CSR participation on employee sense of purpose and experienced meaningfulness: A self-determination theory perspective. *Journal of Hospitality and Tourism Management*, 46, 123-133. <https://doi.org/10.1016/j.jhtm.2020.12.002>
- Ng, M. L., Bridges, S., Law, S. P., & Whitehill, T. (2014). Designing, implementing and evaluating an online problem-based learning (PBL) environment—A pilot study. *Clinical linguistics & phonetics*, 28(1-2), 117-130. <http://doi.org/10.3109/02699206.2013.807879>
- Niyommaneerat, W., Suwanteep, K., & Chavalparit, O. (2023). Sustainability indicators to achieve a circular economy: A case study of renewable energy and plastic waste recycling corporate social responsibility (CSR) projects in Thailand. *Journal of Cleaner Production*, 391, 136203. <https://doi.org/10.1016/j.jclepro.2023.136203>
- Orçan, F. (2020). Parametric or non-parametric: skewness to test normality for mean comparison. *International Journal of Assessment Tools in Education*, 7(2), 255-265. <https://doi.org/10.21449/ijate.656077>
- Perry, P. (2012). Exploring the influence of national cultural context on CSR implementation. *Journal of Fashion Marketing and Management: An International Journal*, 16(2), 141-160. <https://doi.org/10.1108/13612021211222806>
- Przytuła, S., Formánková, S., Ubrežiová, I., & Dunay, A. (2019). Corporate social responsibility in Visegrad countries (Poland, Czech Republic, Slovakia, Hungary) overall landscape. *Corporate Social Responsibility in Poland: Strategies, Opportunities and Challenges*, 325-353. https://doi.org/10.1007/978-3-030-00440-8_20
- Redondo Alamillos, R., & de Mariz, F. (2022). How can European regulation on ESG impact business globally? *Journal of Risk and Financial Management*, 15(7), 291. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4151005
- Rodríguez-Gómez, S., Arco-Castro, M., Pérez, M., & Ariza, L. (2020). Where does CSR come from and where does it go? A review of the state of the art. *Administrative Sciences*, 10(3), 60. <https://doi.org/10.3390/admsci10030060>
- Ryan, A., O'Malley, L., & O'Dwyer, M. (2010). Responsible business practice: re-framing CSR for effective SME engagement. *European Journal of International Management*, 4, 290. <https://doi.org/10.1504/EJIM.2010.033005>

- Singh, P., Sethuraman, K., & Lam, J. (2017). Impact of corporate social responsibility dimensions on firm value: some evidence from Hong Kong and China. *Sustainability*, 9(9), 1532. <https://doi.org/10.3390/su9091532>
- Skýpalová, R., Kozáková, J., Urbánová, M., & Di Sabato, V. (2023). Corporate social responsibility in business practices of multinational companies: study of differences between Czech and Slovak. *Business, Management and Economics Engineering*, 21(1), 106-123. <https://doi.org/10.3846/bmee.2023.18942>
- Skýpalová, R., Rumanko, B., & Kozáková, J. (2024). *CSR Reporting Practices Across the Visegrad region: Study on CSR Implementation in the Visegrad Region (Slovakia, Czech Republic, Poland)*. <https://doi.org/https://doi.org/10.24132/ZCU.2024.11078>
- Tamvada, M. (2020). Corporate social responsibility and accountability: a new theoretical foundation for regulating CSR. *International Journal of Corporate Social Responsibility*, 5(1), 2. <https://doi.org/10.1186/s40991-019-0045-8>
- Tanujaya, B., Prahmana, R. C. I., & Mumu, J. (2022). Likert scale in social sciences research: Problems and difficulties. *FWU Journal of Social Sciences*, 16(4), 89-101. <http://doi.org/10.51709/19951272/Winter2022/7>
- Tanveer, M., Ahmad, A. R., Mahmood, H., & Haq, I. U. (2021). Role of ethical marketing in driving consumer brand relationships and brand loyalty: A sustainable marketing approach. *Sustainability*, 13(12), 6839. <https://doi.org/10.3390/su13126839>
- Tiep Le, T., Ngo, H. Q., & Aureliano-Silva, L. (2023). Contribution of corporate social responsibility on SMEs' performance in an emerging market—the mediating roles of brand trust and brand loyalty. *International Journal of Emerging Markets*, 18(8), 1868-1891. <https://doi.org/10.1108/IJOEM-12-2020-1516>
- Tobias, S., & Carlson, J. E. (1969). Brief report: Bartlett's test of sphericity and chance findings in factor analysis. *Multivariate Behavioral Research*, 4(3), 375-377. https://doi.org/10.1207/s15327906mbr0403_8
- Ullah, I., Hameed, R. M., Kayani, N. Z., & Fazal, Y. (2022). CEO ethical leadership and corporate social responsibility: Examining the mediating role of organizational ethical culture and intellectual capital. *Journal of Management & Organization*, 28(1), 99-119. <https://doi.org/10.1017/jmo.2019.48>
- Ullah, Z., Ahmad, N., Nazim, Z., & Ramzan, M. (2020). Impact of CSR on corporate reputation, customer loyalty and organizational performance. *Governance and Management Review*, 5(2), 195-210. https://pu.edu.pk/images/journal/IAS/PDF/11-v5_2_20.pdf
- Urip, S. (2010). *CSR strategies: Corporate social responsibility for a competitive edge in emerging markets*. John Wiley & Sons.
- Wadkar, S. K., Singh, K., Chakravarty, R., & Argade, S. D. (2016). Assessing the reliability of attitude scale by Cronbach's alpha. *Journal of Global Communication*, 9(2), 113-117. <https://doi.org/10.5958/0976-2442.2016.00019.7>
- Waheed, A., & Zhang, Q. (2022). Effect of CSR and ethical practices on sustainable competitive performance: A case of emerging markets from stakeholder theory perspective. *Journal of Business Ethics*, 175(4), 837-855. <https://doi.org/10.1007/s10551-020-04679-y>
- Wan, P., Chen, X., & Ke, Y. (2020). Does corporate integrity culture matter to corporate social responsibility? Evidence from China. *Journal of Cleaner Production*, 259, 120877. <https://doi.org/10.1016/j.jclepro.2020.120877>
- Wen, H., & Deltas, G. (2022). Global corporate social responsibility reporting regulation. *Contemporary Economic Policy*, 40(1), 98-123. <https://doi.org/10.1111/coep.12548>
- Weston, P., & Nnadi, M. (2023). Evaluation of strategic and financial variables of corporate sustainability and ESG policies on corporate finance performance. *Journal of Sustainable Finance & Investment*, 13(2), 1058-1074. <https://doi.org/10.1080/20430795.2021.1883984>
- Wójcik-Czerniawska, A., & Grzymała, Z. (2023). *Innovativeness of the economy and forms of local government support for entrepreneurship on the example of the Czech Republic, Slovakia and Poland*. 2nd Proceedings of the Open Scientific Conference, 2023. <https://conference.eurrec.org/proceedings/open-scientific-conference-istanbul-2023/article/innovativeness-of-the-economy-and-forms-of-local-government-support-for-entrepreneurship-on-the-example-of-the-czech-republic-slovakia-and-poland>
- Wong, C. W., Wong, C. Y., Boon-Itt, S., & Tang, A. K. (2021). Strategies for building environmental transparency and accountability. *Sustainability*, 13(16), 9116. <https://doi.org/10.3390/su13169116>
- Yuan, J. (2023). Sustainable development in brand loyalty: exploring the dynamics of corporate social responsibility, customer attitudes, and emotional contagion. *Corporate Social Responsibility and Environmental Management*, 31(2), 1042-1051. <https://doi.org/10.1002/csr.2621>

Zhang, Q., Oo, B. L., & Lim, B. T. H. (2019). Drivers, motivations, and barriers to the implementation of corporate social responsibility practices by construction enterprises: A review. *Journal of Cleaner Production*, 210, 563-584. <https://doi.org/10.1016/j.jclepro.2018.11.050>

Zhang, Q., Oo, B. L., & Lim, B. T. H. (2023). Key practices and impact factors of corporate social responsibility implementation: Evidence from construction firms. *Engineering, Construction and Architectural Management*, 30(5), 2124-2154. <https://doi.org/10.1108/ECAM-11-2020-0973>

Zhou, H., Wang, Q., & Zhao, X. (2020). Corporate social responsibility and innovation: A comparative study. *Industrial Management & Data Systems*, 120(5), 863-882. <https://doi.org/10.1108/IMDS-09-2019-0493>

Funding: This research has been supported within the project “Corporate Social Responsibility in Business Practice of the Visegrad Region (Visegrad Grant no. 22220149)”. The project is co-financed by the Governments of Czechia, Hungary, Poland, and Slovakia through Visegrad Grants from the International Visegrad Fund.

Data Availability Statement: More information and data are available on request.

Use of Artificial Intelligence: Artificial intelligence (AI) tools were not used in the generation of the scientific content of this article. AI-based tools were applied for language editing and grammar correction purposes.

Author Contributions: Conceptualization: *J.K*; methodology: *J.K and M.H*; data analysis: *J.K., M.H and V.G*; writing—original draft preparation: *J.K*, writing; review and editing: *J.K, V.G and M.H*. Authors have read and agreed to the published version of the manuscript.

Jana KOZÁKOVÁ, doc. Ing. PhD., has been serving as a lecturer and professor at the Institute of Economics and Management, Faculty of Economics and Management (FEM), Slovak University of Agriculture in Nitra since 2013. Her primary research focus lies in the field of business ethics and corporate social responsibility (CSR).

ORCID ID: <https://orcid.org/0000-0001-7913-9053>

Monika HUDÁKOVÁ, prof.h.c. prof. Ing., PhD., MBA, Vice-Rector for Pedagogical Activities and Lifelong Learning, Department of Economics and Finance, University of Economics and Management in Bratislava. Slovakia. Research interests: Economics and Business Management, Management, Crisis Management.

ORCID ID: <https://orcid.org/0000-0003-0454-9626>

Veronika GRIMBERGER, M.A., PhD student at the University of Economics and Management in Bratislava, Slovakia

ORCID ID: <https://orcid.org/0009-0001-5330-9971>

Copyright © 2025 by author(s). Publishing rights by Vsi Entrepreneurship and Sustainability Center

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>



Open Access