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Article

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CORPORATE SOCIAL RESPONSIBILITY, BUSINESS ETHICS, HUMAN RESOURCES MANAGEMENT, AND THE SUSTAINABILITY OF SMALL AND MEDIUM-SIZED ENTERPRISES. GENDER APPROACH

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Abstract

This study aims to analyse and illustrate causal relationships affecting the sustainability (SD) of small and medium-sized enterprises (SMEs). The research focuses on the impact of Corporate Social Responsibility (CSR), Business Ethics (BE), and Human Resources Management (HRM). Additionally, it examines significant gender-based differences in how these factors are perceived by business owners and managers. This objective was achieved through empirical research. The quantitative research was conducted in the region of V4 countries: Slovak Republic, Poland, Hungary, and the Czech Republic through an online questionnaire in March 2024, with 1.056 respondents. The empirical data collection was managed by the European Centre for Economic and Social Research (ECESR) in collaboration with the MSF Company. Quantitative research led to the following interesting findings. The results of the comparison of respondents' attitudes by gender indicate that there are statistically significant relationships between CSR, BE, HRM and SD in the SME segment in the V4 countries. The gender-based conceptual models were statistically validated, revealing significant perception differences between male and female respondents regarding these factors. CSR has a positive impact on the sustainable development of SMEs

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according to both groups of respondents. The Gender Diversity Index showed only small differences between the attitudes of women and men. BE has a positive and strongest impact on the sustainable development of SMEs in the V4 countries. The Gender Diversity Index showed large differences. Women entrepreneurs perceive the impact of BE on SD 73.0% higher compared to male entrepreneurs. HRM has a statistically significant positive impact on the sustainable development of SMEs. Female entrepreneurs perceived the impact of HRM on SD more intensively compared to male entrepreneurs.

Keywords: small and medium-sized enterprises, sustainability, Corporate Social Responsibility, business ethics, Human Resources Management, gender of entrepreneurs

JEL Classification: M14, M12, O15

Introduction

Recently, small and medium-sized enterprises (SMEs) have to face increasing competition, which has necessitated the adoption of strategic options that are essential for their success (Al-Hakimi et al., 2022). Mazharul Islam and Alharthi (2020) emphasise that SMEs must also actively engage in the addressing of ethical and social issues.

The area of the sustainable development of SMEs is gradually gaining considerable importance in the theoretical environment and practical development of these enterprises. SMEs differ from large firms in other characteristics in addition to size: limited resources, lack of knowledge, informal organisation of the firm, the irreplaceable role of the owner in managing the firm, and other factors (Savur, 2017). In view of the specific features of the development of SMEs compared to large enterprises, it is necessary to study this area separately, taking into account the position and importance of these enterprises in the national economic system of each country.

There are many diverse factors that determine and promote the sustainability of firms. Given the diversity of these firms and the variety of determinants of sustainable development, the field can be seen as complex, dynamic, and perspective. The approach to exploring these attributes can also be diverse. This study is based on the attitudes of SME owners/managers in the Visegrad Four (V4 countries).

This paper aims to demonstrate the impact of important management areas on the sustainability of firms. In this context, a model of SMEs' sustainability (SD) dependence on their attitudes towards the concepts of Corporate Social Responsibility (CSR), Business Ethics (BE), and Human Resource Management (HRM) will be presented. At the same time, differences in the attitudes of male and female entrepreneurs will be assessed. This focus of the paper highlights its originality and excellence.

The scientific paper is structured as follows. The theoretical section provides a critical and systematic review of the factors influencing the sustainable development of SMEs within the studied areas. The next section outlines the research aim, data collection, and empirical data utilised for model construction. The subsequent section presents the research findings, followed by a discussion of these results. Finally, the paper concludes with the key findings of the study, limitations, and future research of researchers.

1. Theoretical background

A widely explored research area focuses on the functioning, challenges, and success factors of SMEs. The majority of studies have focused on the impact of technology, digitalisation, CSR, innovation, culture, business ethics, etc. (Canet-Giner et al., 2020; Dvorsky et al., 2023; Zvarikova et al., 2023a; Lorincova et al., 2024) as a determinant of successful sustainability of SMEs. A systematic literature review by Martins et al. (2022) identified four clusters representing the main lines of research in the field: sustainability and SME performance, green and environmental management issues, social and cultural issues and their impact on SMEs, values, skills, and competences. Less is said about the interrelationship between critical factors CSR, HRM, BE and the assessment of their combined impact, which may be influenced by gender issues and the potential threat of corruption (Heyler et al., 2016; Belas et al., 2024). The level of sustainability of SMEs depends on the size of the company, its area of activity, and its business model (Runtuk et al., 2023). In addition to the existence of these characteristics, they have practices that support the achievement of sustainability goals (Cannon et al., 2020).

CSR emphasises not only the social responsibility of companies, but also how they contribute to the sustainability of society and the environment (Yu et al., 2017; Betakova et al., 2023). CSR and gender equality are intertwined and are becoming increasingly important in corporate strategies and activities. Ensuring gender equality in the workplace and supporting female managers and employees are of particular importance (Amadi et al., 2023). Social investment, for example, should take gender into account by supporting initiatives that promote women's economic empowerment and education (Velasco-Balmaseda et al., 2024). All of this emphasises workplace culture, supply chain and supplier relations, social investment, and initiatives. Promoting gender equality is not only a moral obligation but can also be an economic benefit (Lu et al., 2020). Companies that commit to gender equality gain access to a broader talent base, improve their performance, and contribute to sustainable development.

1.1. The role of business ethics in sustainability

McKinsey & Company (2020) shows that a higher representation of women in boardrooms and senior management is often associated with higher business performance. Women leaders and a diverse workforce contribute to innovation, creativity, and business effectiveness (Alhosani and Nobanee, 2023).

BE is closely related to sustainability, as ethical business practices play an important role in corporate activities and decision-making and can contribute to long-term sustainability (Hasnas, 2020; Zvarikova et al., 2023a). BE implies that companies should take responsibility for the consequences of their actions and decisions and base their operations on moral values (Zeni et al., 2016). For SMEs, ethical behaviour is particularly important as it can help build and maintain trust with customers and communities, which can provide a competitive advantage in the long term (Heyler et al., 2016). The results by Metzker et al. (2023) show that there is no significant difference between the V4 countries' business ethics practices, with high levels of business ethics across these countries. Zvarikova et al. (2023b) found similar results in their research. The importance of gender equality in BE lies in the need to treat all employees fairly and equally (Kum-Lung and Teck-Chai, 2010). Ethical conduct should ensure that there is no discrimination based on gender (Chen et al., 2016). The link between BE and gender equality is, therefore, about companies taking responsibility

for fair and ethical business practices and actively seeking to promote social justice and inclusiveness in their organisations and in the wider society (Wang and Calvano, 2015).

1.2. HRM for sustainability

HRM plays a key role in ensuring the sustainability of companies (Garcia et al., 2023). HRM functions include recruitment, selection, training, development, and performance appraisal, and these processes should be designed and managed to support gender equality and an inclusive workplace environment (Bibi et al., 2022). SMEs should pay particular attention to employee well-being and development, as well as human resource diversity and inclusiveness (Madero-Gómez et al., 2023). Gender equality in HRM is the key for SMEs (Saks, 2022). It is important to ensure equal opportunities for women in recruitment, training, and career development (Roh and Kim, 2016; Martini et al., 2023). Flexible workplace policies, such as part-time opportunities or flexible working hours, can help women achieve work-life balance, which can contribute to long-term employment and performance (Duthler and Dhanesh, 2018).

Support the development and advancement of women managers within the company. This can include mentoring programmes, leadership training, and career development opportunities for female employees (Canet-Giner et al., 2020). HRM should actively combat gender discrimination and harassment in the workplace, including developing and implementing rigorous policies, as well as education and sensitisation (Memon et al., 2020). Gender diversity influences creativity and innovation (Bibi et al., 2022), with women's participation improving the creative performance of groups. Gender diversity has a positive impact on firm performance (Hunt et al., 2015), especially in leadership positions (Bouteska et al., 2024; Saeed et al., 2024; Bukalska et al., 2024).

As the above shows, in an integrated approach to CSR, BE and HRM, gender equality fosters innovation and creativity and contributes to sustainability. Ensuring this is not only an ethical duty, but also a business value that enhances performance and social acceptance. Corporate governance and management systems that are flexible, and sustainable and emphasise social responsibility, ethics, and diversity are most conducive to these characteristics (Runtuk et al., 2023). This can be associated with a leadership style that is based on empathy, flexibility, and participation (Alonso-Almeida et al., 2017).

2. Research methodology

The aim of the article is to verify and visualise models of causal relationships in the sustainability of SMEs based on selected factors of CSR, BE, and HRM, and to quantify significant differences in the perception of these selected factors within the created models with respect to the gender of the owner/top manager. The quantitative research was conducted in the region of V4 countries (Slovak Republic - SR, Poland - PL, Hungary - HU, and Czech Republic - CR). The respondent was defined as the owner or top manager of small and medium-sized enterprise (SME) operating in one or more of the V4 countries (hereafter referred to as "respondents"). Their subjective opinions were collected through an online questionnaire.

Data collection took place in March 2024, with 1.056 respondents (N – total number of SMEs) participating. Structure of respondents according to the country of doing business: 252 (23.9%) – SR, 271 (25.7%) – PL, 256 (24.2%) – HU, and 277 (26.2%) – CR. The empirical data

collection was managed by the European Centre for Economic and Social Research (ECESR) in collaboration with the MSF Company. Respondents who met the specified criteria were randomly selected from an internal database maintained by an external agency.

The questionnaire contains 21 questions. The questionnaire included the following sections: A. demographic characteristics of the enterprise and respondent; B. questions about the understanding of the term ESG (Environmental, Social, Corporate Governance); C. statements on the level of implementation of CSR (Corporate Social Responsibility); D. statements on the human resource management (HRM); E. statements on the business ethics (BE); and F. perception of sustainable development of SME.

Respondents answered non-demographic questions using a Likert scale with options ranging from 1 to 5: 1 – completely agree, 2 – agree, 3 – no opinion, 4 – disagree, and 5 – completely disagree. The respondents completed the questionnaire in their national language to ensure the clarity of the questions. The questionnaire was protected against automated responses, with questions randomly arranged and included a control question. The questionnaire contains without demographic characteristics of the respondent the following statements:

- CSR – statements: CSR1: I am familiar with the concept of Corporate Social Responsibility (CSR) and follow it in my business. CSR2: CSR enables our company to gain competitive advantages in the market. CSR3: Thanks to CSR, we have happy employees working in our company. CSR4: I believe that the application of CSR has a positive impact on the long-term performance of the company.

- BE – statements: BE1: I consider the application of the principles of business ethics to be the right approach to business. BE2: The company has developed a code of ethical conduct for employees, a policy to prevent unethical practices, and produces business ethics reports. BE3: The firm has developed an anticorruption document, applies anticorruption practices in business activities, procedures are in place for reporting and investigating corrupt practices, and top management is regularly briefed on the results of the firm's anti-corruption policy. BE4: The firm's management promotes ethical decision-making and moral integrity of employees. BE5: Our firm conducts itself ethically.

- HRM – statements: HRM1: We apply a participative management system in the company. We have developed a good system of employee appraisal and material involvement. HRM2: We have plans to upskill our employees and ensure their career growth in the company. HRM3: We provide our employees with various company benefits (e.g., recreational opportunities, social insurance premiums, organising company events, sports activities, cultural events, etc.). HRM4: We make sure that our employees are happy in the company and do not leave. Turnover in the company is less than 10% per year.

- SD – statement: Sustainable growth should not only pursue the economic interests of the companies, but also have a positive impact on the social system and environmental aspects. We apply this view in our day-to-day business activities.

H1: CSR has a statistically significant effect on the SD of SMEs according to the women-entrepreneurs (H1A) and man-entrepreneurs (H1B). The gender of owners and managers is a statistically significant demographic factor (H1C).

H2: HRM has a statistically significant effect on the SD of SMEs according to the women-entrepreneurs (H2A) and man-entrepreneurs (H2B). The gender of owners and managers is a statistically significant demographic factor (H2C).

H3: BE has a statistically significant effect on the SD of SMEs according to the women-entrepreneurs (H3A) and man-entrepreneurs (H3B). The gender of owners and managers is a statistically significant demographic factor (H3C).

Structural equation modelling (SEM) was used for the identification, quantification, and verification of causal relationships between factors, as is CSR, BE, HRM, and sustainable development of SMEs (SD). SEM method is a good approach on the evaluation of quantitative research form, which is the research questionnaire.

The SEM method defines the direction and strength of causal relationships between factors (CSR, HRM, BE, and SD). The Gender Diversity Index (IG) was calculated as a ratio of the standardised path coefficient for women (S_W) divided by the standardised path coefficient for men (S_M). If IG is less than 1, it means that male entrepreneurs perceive the effect of the factor (BE, HRM, CSR) on SD as stronger than women entrepreneurs do.

The total number of respondents is 1.056 respondents (N = 1.056). The structure of respondents according to the gender presents Table no. 1.

Table no. 1. Structure of respondents according to the gender

WOMEN (N = 534)						MEN (N = 522)					
DCH1	N	%	DCH2	N	%	DCH1	N	%	DCH2	N	%
1	278	52.0	1	234	43.8	1	253	48.5	1	202	38.7
2	145	27.2	2	186	34.8	2	146	28.0	2	232	44.4
3	111	20.8	3	41	7.7	3	123	23.5	3	38	7.3
SUM	534	100.0	4	73	13.7	SUM	522	100.0	4	50	9.6
DCH3	N	%	SUME	534	100.0	DCH2	N	%	SUM	522	100.0
1	54	10.1	DCH4	N	%	1	93	17.8	DCH4	N	%
2	119	22.3	1	198	37.1	2	88	16.9	1	147	28.2
3	218	40.8	2	153	28.7	3	170	32.6	2	164	31.4
4	35	6.6	3	183	34.2	4	91	17.4	3	211	40.4
5	14	2.6	SUM	534	100.0	5	24	4.6	SUM	522	100.0
6	9	1.7	DCH5	N	%	6	8	1.5	DCH5	N	%
7	19	3.5	1	280	52.4	7	9	1.7	1	281	53.8
8	66	12.4	2	254	47.6	8	39	7.5	2	241	46.2
SUM	534	100.0	SUM	534	100.0	SUM	522	100.0	SUM	522	100.0

Notes: DCH – Demographic characteristic; N – Number of respondents; % - Percentage; DCH1: Size of enterprise: 1 – microenterprise, 2 – small enterprise, 3 – medium-sized enterprise; DCH2: Legal form: 1 – Sole trader, 2 – Limited liability company, 3 – Join-stock company, 4 – another form of business; DCH3: Type of business sector: 1 – Manufacturing, 2 – Retailing, 3 – Services, 4 – Construction, 5 – Transportation, 6 – Agriculture, 7 – Tourism, 8 – Another area; DCH4: Time period of doing business: 1 – less than 5 years, 2 – 5 – 10 years, 3 – more than 10 years; DCH5: Position in business: 1 – owner, 2 – top manager.

3. Results

The empirical analysis of descriptive statistics for the selected statements related to CSR, HRM, BE, and SD reveals key insights, as presented in Table no. 2.

**Table no. 2. Descriptive characteristics of owners/
top manager opinions according to the gender**

WOMEN						MEN					
DCHs	CSR1	CSR2	CSR3	CSR4	BE1	DCHs	CSR1	CSR2	CSR3	CSR4	BE1
ME	2.232	2.367	2.316	2.292	1.742	ME	2.331	2.469	2.416	2.397	1.814
SD	0.996	0.980	0.991	1.005	0.785	SD	1.058	1.024	0.990	1.015	0.839
K	0.421	-0.170	-0.001	0.058	2.143	K	0.129	-0.327	-0.102	-0.032	1.488
SKE	0.744	0.375	0.470	0.525	1.168	SKE	0.682	0.299	0.378	0.449	1.066
DCHs	BE2	BE3	BE4	BE5	HRM1	DCHs	BE2	BE3	BE4	BE5	HRM1
ME	2.094	2.199	1.993	1.830	2.067	ME	2.264	2.347	2.071	1.845	2.159
SD	0.964	1.042	0.943	0.861	0.941	SD	1.036	1.072	0.892	0.894	0.989
K	0.689	0.147	0.915	1.253	0.415	K	0.020	-0.236	0.839	1.534	0.302
SKE	0.871	0.744	0.958	1.078	0.748	SKE	0.659	0.543	0.806	1.151	0.740
DCHs	HRM2	HRM3	HRM4	SD		DCHs	HRM2	HRM3	HRM4	SD	
ME	2.051	2.176	2.052	1.976		ME	2.071	2.255	2.105	2.080	
SD	0.933	1.004	0.965	0.867		SD	0.940	1.038	0.991	0.934	
K	0.943	0.428	0.643	0.960		K	0.626	-0.035	0.522	0.580	
SKE	0.902	0.791	0.875	0.862		SKE	0.819	0.644	0.846	0.804	

Notes: DCHs – Descriptive characteristics; ME – Mean; SD – Standard Deviation; K – Kurtosis; SKE – Skewness

Partial results of the descriptive characteristics of the selected statements (Table no. 4) indicate that the attitudes of owners/top managers towards statements of socially responsible business are the least agreeable. However, the results of the comparison (using a non-parametric approach) show significant differences in the perception of selected factors (or statements related to factor) between male and female entrepreneurs (e.g., CSR1: W – ME = 2.232, M – ME = 2.331; ...; SD: W – ME = 1.976, M – ME = 2.080) at a significance level (α) of 0.01. The above results indicate that female entrepreneurs tend to perceive the selected statements related to the factors HRM, CSR, SD, and BE more positively compared to male entrepreneurs.

The results of the reliability and validity analysis for the selected factors and their corresponding items (CSR, HRM, and BE) are presented in Table no. 3.

Table no. 3. Reliability and validity of factors according to the gender

WOMEN					MEN				
CSR	CA = 0.932; KMO = 0.859; BTS:CHS = 1786.3; DF = 6; SIG = 0.000; TVE = 83.1%				CSR	CA = 0.911; KMO = 0.848; BTS:CHS = 1451.7; DF = 6; SIG = 0.000; TVE = 79.2%			
	I	CI-TC	FL	COMU		I	CI-TC	FL	COMU
	CSR1	0.794	0.882	0.777		CSR1	0.729	0.841	0.708
	CSR2	0.840	0.911	0.831		CSR2	0.812	0.898	0.807
	CSR3	0.878	0.935	0.873		CSR3	0.837	0.914	0.835
	CSR4	0.851	0.919	0.844		CSR4	0.821	0.905	0.819
BE	CA = 0.888; KMO = 0.811; BTS:CHS = 1598.6; DF = 10; SIG = 0.000; TVE = 69.3%				BE	CA = 0.856; KMO = 0.777; BTS:CHS = 1345.9; DF = 10; SIG = 0.000; TVE = 64.4%			
	I	CI-TC	FL	COMU		I	CI-TC	FL	COMU
	BE1	0.665	0.784	0.714		BE1	0.609	0.751	0.664
	BE2	0.755	0.846	0.716		BE2	0.707	0.814	0.663
	BE3	0.747	0.841	0.708		BE3	0.690	0.804	0.646
	BE4	0.803	0.885	0.784		BE4	0.760	0.864	0.746
HRM	CA = 0.905; KMO = 0.831; BTS: CHS = 1411.8; DF = 6; SIG = 0.000; TVE = 80.0%				HRM	CA = 0.886; KMO = 0.830; BTS: CHS = 1181.7; DF = 6; SIG = 0.000; TVE = 74.8%			
	I	CI-TC	FL	COMU		I	CI-TC	FL	COMU
	HRM1	0.777	0.878	0.771		HRM1	0.757	0.870	0.756
	HRM2	0.825	0.907	0.824		HRM2	0.811	0.902	0.813
	HRM3	0.818	0.902	0.814		HRM3	0.770	0.877	0.768
	HRM4	0.731	0.843	0.711		HRM4	0.675	0.809	0.655

Notes: I – Item; CI-TC – Corrected Item-Total Correlation; FL – Factor loading; COMU – Communality; CA – Cronbach Alpha; KMO – Kaiser-Meyer-Olkin test; BTS – Bartlett's Test of Sphericity; CHS – Chi-Square test; DF – Degree of Freedom; SIG – Significance.

From the results of the verification of the questionnaire's reliability and validity (Table no. 3), strong connections are evident between the selected statements and the defined factors. All examined statements are significant and are part of the selected factor. The connections between the CSR factor and its statements (CSR1, ..., CSR4) are the strongest in both respondent samples according to gender.

The results of the factor rotation (Table no. 4) using Varimax with Kaiser Normalisation and the extraction method – Principal Component Analysis (PCA) were achieved with the rotation converging in 6 iterations.

Table no. 4. Rotated components matrix according to the gender

WOMEN					MEN				
KMO = 0.938; BTS: CHS = 1598.6; DF = 10; SIG = 0.000					KMO = 0.938; BTS: CHS = 5383.8; DF = 91; SIG = 0.000				
I/F	CSR	BE	HRM	SD	I/F	CSR	HRM	BE	SD
CSR1	0.756	0.379			CSR1	0.772			
CSR2	0.831				CSR2	0.815			
CSR3	0.834				CSR3	0.794	0.304		
CSR4	0.841				CSR4	0.804			
BE1			0.765	0.335	BE1			0.746	
BE2	0.352	0.378	0.686		BE2	0.350	0.351	0.743	
BE3	0.382	0.418	0.628	0.316	BE3	0.372		0.775	
BE4			0.724	0.438	BE4			0.718	0.401
BE5			0.827	0.322	BE5			0.849	
HRM1	0.343	0.760		0.353	HRM1	0.405	0.693		
HRM2	0.319	0.745		0.304	HRM2	0.336	0.769		
HRM3	0.374	0.720	0.349		HRM3		0.771		0.327
HRM4		0.679	0.458		HRM4		0.727	0.457	
SD	0.322	0.476	0.352	0.862	SD	0.33	0.374	0.383	0.891

Notes: I – Item; F – Factor; The table contains factor loadings with values greater than 0.3.

The result (Table no. 4) of the factor rotation is the identification of exactly 4 factors (CSR, BE, HRM, and SD). The factor loadings between the statements and the defined factors are the strongest regardless of the respondent's gender. The value of the total variance explained (TVE) is 80.7% for the female model and 77.7% for the male model. The TVE values indicate good connections between the defined statements and factors. The remaining 19.3% (female model) and 22.3% (male model) of variability are characteristics that were not examined in the selected factors.

The graphical visualisation of the relationships between the selected factors according to the respondents' gender is shown in figure no. 1.

Figure no. 1 illustrates both distinct differences and shared characteristics in the perception models of the analysed factors between female and male entrepreneurs. These findings require further validation through quantitative analysis and statistical hypothesis testing, as presented in Table no. 5.

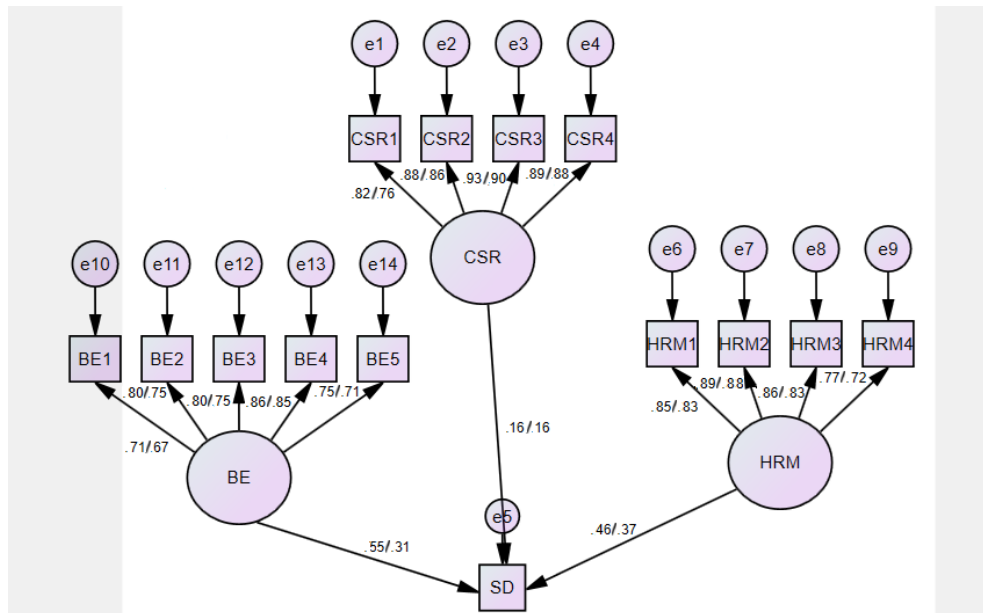


Figure no. 1. SEM models with standardised path coefficients (woman/men)

Table no. 5. Quantification and verification of hypotheses according to the gender

Gender	H	CR	Path coefficient		Standard Error	Critical ratio	Sig. P-value	Partial conclusion
			UNS	S				
Woman	H1A	CSR >> SD	0.138	0.158	0.031	4.507	0.000***	A
	H2A	BE >> SD	0.646	0.550	0.053	12.100	0.000***	A
	H3A	HRM >> SD	0.484	0.458	0.039	10.709	0.000***	A
Men	H1B	CSR >> SD	0.162	0.164	0.038	4.325	0.000***	A
	H2B	BE >> SD	0.401	0.318	0.061	9.027	0.000***	A
	H3B	HRM >> SD	0.357	0.365	0.033	10.709	0.000***	A
Comparison Gender diversity	H	Comparison	Path coefficient		IG	Relative differences	Partial conclusion	
			S_W	S_M				
	H1C	CSR >> SD	0.158	0.164	0.9634	- 3.7%	Small difference – R	
	H2C	BE >> SD	0.550	0.318	1.7296	73.0%	Large difference – A	
	H3C	HRM >> SD	0.458	0.365	1.2548	25.5%	Medium difference - A	

Notes: H – Hypothesis; CR – Causal relationship; β – Path coefficient; UNS – Unstandardised; S – Standardised; A – Accepted; IG – Gender diversity Index; R – Rejected.

The results confirmed the statistical significance of the formulated hypotheses for both the female entrepreneurs' model and the male entrepreneurs' model. The factors CSR, BE, and HRM are accepted and positively determine the factor SD.

The analysis comparing the impact of men and women indicates that gender diversity plays a statistically significant role in how business ethics and human resource management influence the sustainable development of SMEs. As a result, hypotheses H2C and H3C were accepted. However, no statistically significant differences were found between men and women in their perception of the impact of corporate social responsibility on the sustainable development of SMEs. Hypothesis H1C was rejected.

The structure of variables in the final models (Figure no. 1) is as follows: Number of variables in the final model = 31; Number of observed variables = 14; Number of unobserved variables = 17; Number of exogenous variables = 17; Number of endogenous variables = 14; Number of distinct sample moments = 105; Number of distinct parameters to be estimated = 30; Degrees of Freedom = 75. Table no. 6 provides the validation results of the final model based on key fit indices, assessing its overall goodness of fit and statistical robustness.

Table no. 6. Verification of final SEM model according to the gender

SUMMARY	DF	CMIN	CMIN/DF	RMSA	CFI	NFI	GFI
Model WOMAN	75	147.113	1.961	0.071	0.971	0.934	0.974
SEM Model MEN	75	132.703	1.769	0.064	0.974	0.926	0.968
Accepted value of the SFCH			<-2.0; 2.0>	<0.0; 0.08>	> 0.95	> 0.90	> 0.95

Notes: Iteration = 8; Estimation method = Maximum Likelihood; Convergence criteria: Crit. = 1E-05; Crit.2 = 0.001; Iteration limit = 50; DF – Degree of Freedom.

The final models of causal relationships between the defined factors (CSR, BE, HRM, and SD) presented in Figure no. 1 are statistically significant based on the Fit summary characteristics of the models. This is because the values of the Fit summary characteristics fall within the acceptance range.

4. Discussions

The empirical results yielded several notable findings. A comparison of respondents' attitudes by gender reveals statistically significant relationships regarding CSR, BE, HRM on the SD of SMEs within the business environment of the V4 countries. Both gender-specific conceptual models (W/M) were statistically validated, highlighting significant differences in the perception of intensity of these factors.

Corporate social responsibility has a positive effect on the sustainable development of SMEs according to both groups of respondents according to gender (women/men). Empirical results also indicate that CSR has the least impact on the SD of SMEs among the examined factors (CSR, BE, and HRM), both for women entrepreneurs ($\beta(S) = 0.158$) and male entrepreneurs ($\beta(S) = 0.164$). The Gender Diversity Index showed only small differences – women entrepreneurs perceive the impact of CSR on SD as 3.7% lower compared to male entrepreneurs. The differences in the effect of CSR on SD between these groups of respondents were not confirmed.

Business ethics also has a positive effect on the sustainable development of SMEs according to the demographic characteristic of the respondent, which is gender. The results show that

BE has the strongest effect on the SD of SMEs among the examined factors (CSR, BE, and HRM), both for women entrepreneurs (β (S) = 0.550) and male entrepreneurs (β (S) = 0.318). The Gender Diversity Index showed very large differences – women entrepreneurs perceive the impact of BE on SD as 73.0% higher compared to male entrepreneurs. The differences in the effect of BE on SD between these groups of respondents were confirmed.

Both groups of respondents (women/men) think that human resource management has a statistically significant positive effect on the sustainable development of SMEs. The results show that HRM has a medium effect on the SD of SMEs among the examined factors (CSR, BE, and HRM), for both women entrepreneurs (β (S) = 0.458) and male entrepreneurs (β (S) = 0.365). The Gender Diversity Index showed medium differences – women entrepreneurs perceive the impact of HRM on SD as 25.5% higher compared to male entrepreneurs. The differences in the effect of HRM on SD between these groups of respondents were confirmed.

Ethical principles include approaches that aim to improve the well-being of society (Armstrong, 2020). The research findings follow the conclusions of studies that highlight the necessity of promoting gender equality (Wang and Calvano, 2015), as it has a positive impact on BE, which is a mediating variable in firm performance.

Human capital is a set of knowledge, experience, and professional skills that provide a firm with the desired competitive advantage in the market (AlQershi et al., 2020). The entrepreneurial success of SMEs is determined by the skills and appropriate motivation of employees (Dar and Mishra, 2021). In this context, Kramar (2022) prefers sustainable HRM, which he perceives as the link between HRM and sustainability. Sustainable HRM aims to achieve positive economic, social, human, and environmental outcomes simultaneously, both in the short and long term.

Gender equality in HRM is a key factor for SMEs (Saks, 2022), influencing creativity and innovation (Bibi et al., 2022), while women's participation in leadership positions enhances employee creativity and performance (Bouteska et al., 2024; Saeed et al., 2024; Bukalska et al., 2024). In this context, this research supports the conclusions presented.

The research findings build on and confirm the significance of the presented studies. Gender diversity and a higher percentage of women in management improves corporate CSR (Albitar et al., 2023), earnings quality, and affects business and financial performance (Rossi et al., 2021; McKinsey & Company, 2020). It is important to highlight that CSR activities represent a competitive advantage for SMEs that contributes to business success and sustainability (Helfaya et al., 2023).

Conclusions

The aim of the article was to verify and visualise models of causal relationships in the sustainability of SMEs based on selected factors of CSR, BE, and HRM, and to quantify significant differences in the perception of these selected factors with respect to the gender of the respondents.

The research findings confirm that the specified areas-corporate social responsibility (CSR), business ethics (BE), and human resource management (HRM)-significantly influence the development of positive attitudes among respondents toward sustainable development.

The results of the comparison of respondents' attitudes by gender indicate that there are statistically significant relationships in the attitudes toward CSR, BE, HRM, and SD of SMEs in the V4 countries. Both conceptual models by gender were statistically validated, and there are significant differences between men and women in their perceptions of these factors. Women demonstrated more appropriate attitudes in all areas studied.

BE has the strongest influence on the SD of SMEs among the factors examined, for both female and male entrepreneurs. The Gender Diversity Index showed large differences in the perceptions of these defined groups of respondents. Women entrepreneurs perceive the impact of the application of BE principles on positively shaping SD more strongly compared to male entrepreneurs.

The impact of human resource management (HRM) on shaping positive attitudes toward SMEs in the V4 countries is of moderate intensity. Both male and female respondents confirmed that HRM has a statistically significant positive effect on the sustainable development of SMEs. The Gender Diversity Index indicated moderate differences, with female entrepreneurs perceiving the influence of HRM on sustainable development 25.5% more strongly than their male counterparts.

Both male and female respondents identified corporate social responsibility (CSR) as having the weakest positive impact on the sustainable development of SMEs. The Gender Diversity Index showed only small differences. Women entrepreneurs perceive the impact of CSR on SD similarly to men. Thus, no significant differences in the perception of the impact of the CSR concept on SD between these groups of respondents were confirmed.

This research has a regional limitation because it was conducted in the V4 countries. The research methodology allows for similar research to be conducted in any country or region. It can be assumed that the presented research has enriched the debate on sustainable SME entrepreneurship.

Our further research will focus on exploring the impact of other factors of SMEs sustainability in the context of perception and application of the ESG (Environmental, Social, and Governance) concept, which represents an important challenge for SMEs in the coming years.

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