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THE IMPACT OF SELECTED FINANCIAL FACTORS ON BUSINESS ETHICS IN THE SMES SEGMENT IN THE V4 COUNTRIES

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ABSTRACT. This paper aimed to quantify the impact of selected financial management factors on business ethics in the segment of small and medium-sized enterprises (SMEs) in the Visegrad Four countries (Czech Republic, Slovakia, Poland, and Hungary). The empirical research, which was aimed at ascertaining the attitudes of SMEs, was conducted in June 2022 in the Visegrad Four countries. The selection of respondents was carried out by random sampling using the CAWI method. In the Czech Republic, the total number of respondents was 347, in the Slovak Republic, the total number of respondents was 322, in Poland, the total number of respondents was 381 and in Hungary, the total number of respondents was 348. The scientific hypotheses were verified through regression and correlation analysis. The empirical research yielded a number of interesting and stimulating scientific findings. The results showed that the selected factors in the financial management of SMEs have a significant impact on the formation of entrepreneurs' attitudes in the field of business ethics. Knowledge of the most important aspects of the firm's financial management represents the most significant factor influencing the implementation of ethical aspects in the management process of SMEs and positive perceptions of business ethics in the context of financial performance. Other financial factors, namely entrepreneurs' belief that they can appropriately manage financial risks in the firm, a correct understanding of financial risk, and belief in the firm's survival in the medium term, have also shown a significant impact on business ethics. A surprising finding was that a positive assessment of a firm's current financial performance does not have any impact on the formation of attitudes towards business ethics. The representation and intensity of the effect of financial management factors on business ethics varies across the V4 countries. While the attitudes of SMEs in the Czech Republic, Slovakia and Poland have similar characteristics, Hungarian SMEs differ significantly from them.

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Introduction

The enterprise that has implemented the principles of business ethics in its daily operations applies the principles of ethics in its business activities directed either inwardly or outwardly and strives to do the right things in the right way (Fernandez & Camacho, 2016; Stankevičiūtė & Wereda, 2020; van Wyk & Venter, 2022; Mumcu, 2024; Çera et al., 2022).

“The application of the concept of business ethics is a characteristic element of business, especially in the world of large companies field, which has a major impact on the development of the socio-economic system in the developed countries of the world” (Fernandez & Camacho, 2016). Many signals in the theoretical field and business activity of small and medium-sized enterprises (SMEs) point to the fact that these firms also pay attention to business ethics (Hao et al., 2020; León-Gómez et al., 2022). There must be reasons why SMEs also pay attention to this area. The most important reasons for applying the concept of business ethics in the SME segment include the desire to stabilise the firm's employees, to stabilise and gradually expand its customer portfolio, and to have good relations with the community in which it operates. This is a very important factor, as SMEs are tied to the region where they operate more closely than large firms (Mura et al., 2021). In this context, Khan et al. (2023) state that in the current economic situation, it is imperative to understand the SMEs' perception toward significant aspects of the firms' sustainability, which are strongly correlated with business ethics.

Given the inherent specific features of SMEs, it can be assumed that the application of the business ethics concept is primarily determined by the personal characteristics of the company's owner or manager. It can also be assumed that the financial aspects of the business may be a motive for applying business ethics.

This research is aimed at investigating the influence of the significant factors of financial management of SMEs on the formation of SMEs' attitudes towards business ethics in the Visegrad Four countries (Czech Republic, Slovakia, Poland, and Hungary). The research is original and excellent because it is based on the attitudes of SME owners or managers and quantifies the impact of different financial management factors on the formation of their attitudes towards business ethics through regression and correlation analysis.

The article structure is as follows: In the first section, the conclusions of foreign studies in the financial management of SMEs are presented. The next section defines the research objective, methodology, and data description of the empirical research. The third chapter presents the research results and a brief discussion. Finally, the main conclusions of the research and its limitations are presented.

1. Literature review

It is generally accepted in the academic field that SMEs have difficult access to external financial resources, they do not manage risks well, their financial performance is highly turbulent, and they are more at risk of bankruptcy (Karas & Režňáková, 2021; Belas & Rahman, 2023; Czapińska, 2013; Mishchuk et al., 2021).

An important factor influencing SMEs' access to bank credit is the current state of the economy as measured by macroeconomic indicators, which determines the focus of bank regulation. Cehajic & Košak (2021) examined the impact of macroprudential policies on SMEs' access to bank financing. According to the authors, there is a need to increase the banking sector's resilience, which could result in easier access for SMEs to bank financing. Restrictive macroprudential policies are associated with a lower likelihood of SMEs gaining access to bank financing and vice versa. Therefore, increasing banking sector regulation should be cautious and judicious, and policymakers should anticipate the banks' reaction to implementing these measures. In this context, Ruiz-Palomo et al. (2022) examined access to bank financing and its impact on SMEs' innovation. According to the authors, easing financial constraints helps SMEs undertake both technological and managerial innovations, which represent a real prerequisite for SMEs' growth and survival in the market.

To improve access to bank financing, SMEs need to be aware of commercial banks' lending terms (Adaskou & El Bettioui, 2022; Ključnikov & Belás, 2016; Mardika et al., 2018; Rahman & Zbrankova, 2019), build exclusive relationships with banks, offer banks suitable collateral (Rahman et al., 2017), and demonstrate the existence of appropriate financial risk management tools, as this risk has a significant impact on SMEs' performance and their sustainability in the market (Valaskova et al., 2023; Kot, 2023).

Stoilkovic et al. (2021) investigated the impact of leverage on the financial performance of SMEs. The authors report that one of the most common problems for SMEs is the difficulty of accessing external sources of finance. According to the authors, capital structure decisions are one of the most important decisions of a firm's top management as they determine its competitiveness and market survival, which is also declared in the study by Cerkovskis et al. (2022). The authors stress the importance of internal sources of financing, as excessive indebtedness increases the risk of default, which may ultimately threaten the firm's existence. The similar findings on working capital management are obtained by Czerwonka & Jaworski (2023).

Durst & Gerstlberger (2021) emphasise the need for governments to have financial support programmes for responsible SMEs. This is especially important for responsible SMEs with essential societal impact, including social enterprises (Samoliuk et al., 2023). According to the authors, Europe is paying the most attention to this activity (Androniceanu et al., 2022). Saci & Mansour (2023) report that several governments use credit guarantee schemes to facilitate SMEs' access to external finance. In this way, they want to promote their growth and survival in the market, as the critical drivers of SME growth (e.g., profitability, risk, leverage, and equity multiplier) are significantly improved, and risk diversification mitigates the reluctance of financial intermediaries to finance SMEs due to better credit risk management. This approach is very important because SMEs have innovative ideas but do not have enough money to finance their projects.

According to Owusu et al. (2021), SMEs generate internal sources of financing for their activities through retained earnings, personal savings, or savings from family and friends, and external sources through credit from suppliers and bank credit. In this context, the authors stress the importance of SMEs' attention to building their financial resource base. According to them, however, firms' approaches vary considerably. This approach is confirmed in the study by Vevere et al. (2022), claiming the relevance of earnings and earnings management in SMEs.

Krüger & Meyer (2021) highlight that risk is inevitable in business and must be dealt with. Unlike large enterprises, risk in SMEs is not formalised and structured through norms, which increases their vulnerability to risk and harms their sustainability. Thus, personnel risks management directly affects the SMEs performance (Petrankova et al., 2023). Moreover, Kotaskova et al. (2020) point out that personnel risk was the most negatively affecting SMEs'

business activities in the Czech Republic and Slovakia. According to Potkany et al. (2022), eliminating risk, especially in times of crises and changes in the market, is connected to the effective use of early warning through a management system based on control. Chakabva et al. (2021) report that there is a general perception that SMEs adopt inadequate and ineffective risk management practices. The authors investigated the factors that hinder effective risk management in SMEs. These factors are numerous and varied and include a lack of intangible resources such as knowledge and firms' tangible resources (cash). Other factors included the absence of risk management frameworks relevant to SMEs, inadequate record-keeping for risk management purposes, and employees' rejection of these practices. In this context, owners or managers need to focus on concentrating those resources that lead to effective risk management in the firm.

Therefore, the success of SMEs significantly depends on their ability to manage risk effectively. Risk management requires differentiated strategies that reflect the internal and external environment of the firm and allow for the proper identification, measurement, and evaluation of these risks (Virglerova et al., 2021). SMEs need to use material and organisational resources to prevent them as well as to eliminate their consequences (Tomášková & Kaňovská, 2022; Setyaningsih & Kelle, 2021). The correct perception of financial risk significantly impacts the future business performance of SMEs (Dvorsky et al., 2021) and their overall financial standing (Krasteva & Nagy, 2022).

Al-Nimer et al. (2021) investigated the impact of enterprise risk management on business performance by the mediating role of business model innovation. The authors report that risk management has a significant impact on the innovation of efficient business models, which enhances the firm's financial performance.

Syrova & Spicka (2023) investigated the link between risk management and the financial performance of SMEs. According to the authors, organisational culture and strategic risk management are positive mediators between enterprise risk management and financial performance. However, they caution that implementing enterprise risk management cannot be "pretend" but must be underpinned by an appropriate organisational culture and monitoring of strategic risks in the context of financial performance. At the same time, the authors state that SMEs have relatively little adoption of enterprise risk management approaches. This viewpoint is consistent with the position expressed by Dias (2020).

Buljubasic Musanovic & Halilbegovic (2021) analysed the financial situation of failing firms before bankruptcy compared to non-failing comparable firms in Bosnia and Herzegovina. Their research results suggest a significant difference between failing and non-failing SMEs, especially in the areas of accruals, asset quality, financial leverage, profitability and liquidity. The authors stress the importance of the indicators of working capital productivity, debt ratio, accounts receivable turnover, return on assets and return on equity, which can detect failing firms. The authors also highlight a typical problem in transition economies, namely the tendency for firms to under-report profits to avoid paying taxes. This can be in the form of "creative accounting" or falsification of financial statements.

Wall (2021) examined the impact of business strategy and innovation on the financial performance of SMEs in Thailand. The results of his study show that differentiated business strategies and a comprehensive innovation process mediate the increase in the financial performance of SMEs in the new digital context (Androniceanu, 2023; Straková et al., 2022). The author highlights the need for SMEs to mobilise internal resources. On the same note, Onea's (2020) findings reveal a positive correlation between firm investments and employment impact and the overall summary innovation index from the European Innovation Scoreboard. The use of appropriate strategic tools (Gallo et al., 2023), as well as product and process innovation (Machova et al., 2023), significantly impact the financial stability of SMEs.

The impact of financial factors on forming ethical attitudes in SMEs has not been extensively studied in the academic literature. Based on this observation, the following research question is formulated:

RQ: What is the impact of financial risk management and financial performance on the formation of ethical attitudes of SMEs in the V4 countries?

2. Aim, Methodology, and Data

This paper aims to quantify the impact of selected financial management factors on business ethics in the SME segment in the V4 countries.

The empirical research, which aimed at identifying the attitudes of SMEs, was conducted in June 2022 in the Visegrad Four countries (Czech Republic, Slovakia, Poland, and Hungary). These countries represent an important European political and economic region and are also important business partners. Several studies have shown that, on the one hand, these countries follow the same trends in the field of SMEs; on the other hand, there are differences between them.

The questionnaire was compiled in financial management, CSR, business ethics, human resources, and environmental issues. The selection of respondents was done by random sampling using the CAWI method. Only owners or top managers of the enterprises could answer the questions. The questionnaire was distributed in each country in the respondents' national language. Control questions were used to establish the consistency of the answers for each study area (a question asked in a different way - synonymously, but with the same meaning as the previous one).

In the Czech Republic, the total number of respondents was 347; in the Slovak Republic, the total number of respondents was 322; in Poland, the total number of respondents was 381; and in Hungary, the total number of respondents was 348. The total number of respondents from the V4 countries was 1,398. The structure of respondents by nationality: 347 (24.8%) CR, 381 (27.3%) PL, 322 (23.0%) SR, and 348 (24.9%) HU. The largest number of firms did business in services 368 (26.3%) and trade 264 (18.9%), followed by the following areas: 226 (16.2%) manufacturing, 226 (16.2%) tourism, 112 (8.0%) construction, 54 (3.8%) transport, 46 (3.3%) agriculture, and 102 (7.3%) of respondents indicated other business sectors. Of the total respondents from V4 countries, 48.5% were male and 51.5% were female.

Respondents expressed their attitude to the following statements using a 5-point Likert scale with the following wording: 1 - strongly agree, 2 - agree, 3 - neither agree nor disagree (N/A), 4 - disagree, 5 - strongly disagree.

The dependent variables and independent variables were formulated based on the results of León-Gómez et al. (2022), Karas & Režňáková (2021), Stoiljkovic et al. (2021). The statements to which the respondents expressed their attitude are as follows:

Dependent variables:

- y1 - In managing a company, I consider the ethical implications of my decisions.
- y2 - Ethical behaviour has a positive effect on the company's performance.

Independent variables:

- x1 - I understand the most critical aspects of the firm financial management.
- x2 - I consider financial risk a part of the company's daily life.
- x3 - I can appropriately manage financial risks in our firm.
- x4 - I examine the financial performance of our firm positively.

x5 - Our firm will survive on the market in the next five years.

In the research, ten scientific hypotheses were defined for each of the V4 countries:

H1a: Knowledge of the most important aspects of financial management impacts acceptance of the ethical implications of business decisions.

H1b: Knowledge of the most critical aspects of financial management impacts the positive influence of ethical business on the company's performance.

H2a: Considering financial risk as part of the company's daily life has an impact on acceptance of the ethical implications of business decisions.

H2b: Considering financial risk as part of the company's everyday life has an impact on the positive impact of ethical business on the company's performance.

H3a: The ability to appropriately manage financial risks in the firm impacts acceptance of the ethical implications of business decisions.

H3b: The ability to appropriately manage financial risks in a firm impacts the positive impact of ethical business on the company's performance.

H4a: Positive evaluation of a company's financial performance impacts acceptance of the ethical implications of business decisions.

H4b: A positive evaluation of a company's financial performance impacts the positive impact of ethical business decisions on the company's performance.

H5a: The perception of sustainable business in a 5-year horizon impacts acceptance of the ethical implications of business decisions.

H5b: The perception of sustainable business in a 5-year horizon impacts the positive impact of ethical business on the company's performance.

A correlation analysis was used to evaluate the statistical hypotheses. To verify the significance and determine the magnitude of the effect of financial management on the perception of selected attitudes of entrepreneurs towards ethics, linear regression modelling (LRM) was used. The regression analysis method was used to test the scientific hypotheses at the significance level $\alpha = 5\%$. Linear regression modelling (LRM) was used to scale the responses in quantitative research linearly (Likert scale with values of 1 - 5). Positive responses to the independent variables ($x_1 - x_5$) should lead to positive perceptions of the dependent variable (y) - verifying the dependence of y_1 and y_2 (dependent variable: y) on x_1 - x_5 statements (independent variables: x_1 - x_5) among SME owners and top managers in every single V4 country.

3. Results and discussion

The following tables present the results of statistical calculations of the dependence of selected areas of business ethics on the defined financial factors of SMEs in V4 countries.

Czech Republic

Table 1. Regression and correlation analysis for y1 in the Czech Republic

<i>Descriptive</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.8098	1.9395	2.0000	2.0692	2.1124	2.0086
Standard Error	0.0371	0.0424	0.0436	0.0415	0.0457	0.0479
Standard Deviation	0.6915	0.7896	0.8118	0.7722	0.8511	0.8915
Kurtosis	-0.4772	0.2191	0.6309	0.2544	0.3499	0.6250
Skewness	0.3762	0.6037	0.7173	0.4865	0.6885	0.7955
<i>Correlation</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y1</i>	1					
<i>x1</i>	0.4288	1				
<i>x2</i>	0.3553	0.5952	1			
<i>x3</i>	0.3873	0.6847	0.5348	1		
<i>x4</i>	0.3851	0.5047	0.4518	0.6038	1	
<i>x5</i>	0.4106	0.4688	0.4753	0.5365	0.7111	1
<i>Regression statistics</i>		Multiple R	R Square	Adj. R Square	F	p-value
		0.4981	0.2481	0.2371	22.5012	0.000*
<i>Coefficients</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
	0.7912	0.1998	0.0595	0.0408	0.0591	0.1506
<i>Standard Deviaton</i>	0.6915	0.7896	0.8118	0.7722	0.8511	0.8915
<i>t Stat</i>	7.4896	3.2722	1.1383	0.6365	1.0065	2.7998
<i>p-value</i>	0.0000	0.0012	0.2558	0.5249	0.3149	0.0054
<i>VIF</i>		2.2057	1.7103	2.3290	2.3685	2.1812

* < 0.0001 α = 0.05

Source: own calculation

Based on the calculated values of kurtosis and skewness (see Table 1), it can be concluded that the conditions for a normal distribution were met. The results of the correlation analysis at the significance level α = 0.05 confirmed that the acceptance of ethical implications of business decisions (y1) is weakly positively dependent on factors x2 to x4 (0.3553 - 0.3873) and moderately positively dependent on factors x1 and x5 (0.4288 and 0.4106).

The LRM results showed that the acceptance of ethical implications of business decisions (y1) is 23.7% (Adjusted R square 0.2371) influenced by factors x1 (C = 0.1998, p-value = 0.0012) and x5 (C = 0.1506, p-value = 0.0054) in the Czech Republic. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), it can be concluded that the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{ICR} = 0.7912 + \mathbf{0.1998} x_1 + 0.0595 x_2 + 0.0408 x_3 + 0.0591 x_4 + \mathbf{0.1506} x_5$$

Table 2. Regression and correlation analysis for y2 in the Czech Republic

<i>Descriptive</i>	y2	x1	x2	x3	x4	x5
Mean	1.9308	1.9395	2.0000	2.0692	2.1124	2.0086
Standard Error Standard Deviation	0.0428	0.0424	0.0436	0.0415	0.0457	0.0479
Kurtosis	0.7980	0.7896	0.8118	0.7722	0.8511	0.8915
Skewness	0.5144	0.2191	0.6309	0.2544	0.3499	0.6250
	0.6740	0.6037	0.7173	0.4865	0.6885	0.7955
<i>Correlation</i>	y2	x1	x2	x3	x4	x5
y2	1					
x1	0.4153	1				
x2	0.3034	0.5952	1			
x3	0.4064	0.6847	0.5348	1		
x4	0.3945	0.5047	0.4518	0.6038	1	
x5	0.4106	0.4688	0.4753	0.5365	0.7111	1
<i>Regression</i>	statistics	Multiple R	R Square	Adj. R Square	F	p-value
		0.4909	0.2410	0.2898	21.6517	0.000*
<i>Coefficients</i>	y2	x1	x2	x3	x4	x5
Standard Deviaton	0.7828	0.2146	-0.0124	0.1164	0.0908	0.1613
t Stat	0.7980	0.7896	0.8118	0.7722	0.8511	0.8915
p-value	6.3904	3.0306	-0.2050	1.5644	1.3341	2.5860
VIF	0.0000	0.0026	0.8377	0.1187	0.1831	0.0101
		2.2057	1.7103	2.3290	2.3685	2.1812

*<0.0001 α = 0.05

Source: own calculation

The kurtosis and skewness values confirmed that the conditions for a normal distribution are met (Table 2). The results of the correlation analysis at the significance level α = 0.05 confirmed that the positive effect of ethical entrepreneurship on firm performance (y2) is weakly positively dependent on factors x2 and x4 (0.3034 and 0.3945) and moderately positively dependent on factors x1, x3 and x5 (0.4153, 0.4064 and 0.4106).

The LRM results showed that the positive effect of ethical business on firm performance (y2) is 29% (adjusted R square 0.2898), influenced by factors x1 (C = 0.2146, p-value = 0.0026) and x5 (C = 0.1613, p-value = 0.0101) in the Czech Republic. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{2CR} = 0.7828 + 0.2146 x1 - 0.0124 x2 + 0.1164 x3 + 0.0908 x4 + 0.1613 x5$$

Slovak Republic

Table 3. Regression and correlation analysis for y1 in the Slovak Republic

<i>Descriptive</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.7081	1.7329	1.8137	1.9596	2.0559	1.9534
Standard Error	0.0353	0.0390	0.0409	0.0422	0.0458	0.0466
Standard Deviation	0.6328	0.6994	0.7337	0.7581	0.8222	0.8359
Kurtosis	0.0786	0.3181	2.5784	1.3270	1.0593	0.5236
Skewness	0.4774	0.6959	1.0688	0.8013	0.8435	0.6997
<i>Correlation</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y1</i>	1					
<i>x1</i>	0.3582	1				
<i>x2</i>	0.2582	0.4612	1			
<i>x3</i>	0.3195	0.6259	0.5745	1		
<i>x4</i>	0.3069	0.3836	0.4511	0.5784	1	
<i>x5</i>	0.2981	0.3463	0.3159	0.4444	0.5976	1
Regression	statistics	Multiple R	R Square	Adj. R Square	F	p-value
		0.4184	0.1751	0.1620	13.4107	0.000*
<i>Coefficients</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>Standard Deviaton</i>	0.8679	0.2122	0.0398	0.0253	0.0787	0.0967
<i>t Stat</i>	0.6328	0.6994	0.7337	0.7581	0.8222	0.8359
<i>p-value</i>	7.8704	3.5178	0.7184	0.3880	1.4247	1.9731
<i>VIF</i>	0.0000	0.0005	0.4730	0.6983	0.1552	0.0494
		1.7018	1.5801	2.3450	1.9717	1.6058

* < 0.0001 α = 0.05

Source: own calculation

Based on the calculated values of kurtosis and skewness, it can be stated that the conditions for a normal distribution have been met. The results of the correlation analysis confirmed that acceptance of the ethical implications of business decisions (y1) is weakly positively related to factors x1 to x5 (0.2582 - 0.3582).

The LRM results showed that the acceptance of ethical implications of business decisions (y1) is 16% (adjusted R square 0.1620) influenced by factors x1 (C = 0.2122, p-value = 0.0005) and x5 (C = 0.0967, p-value = 0.0494) in the Slovak Republic. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{ISR} = 0.8679 + \mathbf{0.2122} x1 + 0.0398 x2 + 0.0253 x3 + 0.0787 x4 + \mathbf{0.0967} x5$$

Table 4. Regression and correlation analysis for y2 in the Slovak Republic

<i>Descriptive</i>	<i>y2</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.7671	1.7329	1.8137	1.9596	2.0559	1.9534
Standard Error	0.0390	0.0390	0.0409	0.0422	0.0458	0.0466
Standard Deviation	0.7005	0.6994	0.7337	0.7581	0.8222	0.8359
Kurtosis	0.4614	0.3181	2.5784	1.3270	1.0593	0.5236
Skewness	0.6852	0.6959	1.0688	0.8013	0.8435	0.6997
<i>Correlation</i>	<i>y2</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y2</i>	1					
<i>x1</i>	0.3876	1				
<i>x2</i>	0.3274	0.4612	1			
<i>x3</i>	0.3518	0.6259	0.5745	1		
<i>x4</i>	0.3797	0.3836	0.4511	0.5784	1	
<i>x5</i>	0.3219	0.3463	0.3159	0.4444	0.5976	1
<i>Regression</i>	<i>statistics</i>	Multiple R	R Square	Adj. R Square	F	p-value
		0.4762	0.2267	0.2145	18.5322	0.000*
<i>Coefficients</i>	<i>y2</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>Standard Deviaton</i>	0.6970	0.2399	0.1037	-0.0116	0.1596	0.0823
<i>t Stat</i>	0.7005	0.6994	0.7337	0.7581	0.8222	0.8359
<i>p-value</i>	5.8975	3.7114	1.7469	-0.1651	2.6965	1.5674
<i>VIF</i>	0.0000	0.0002	0.0816	0.8690	0.0074	0.1180
		1.7018	1.5801	2.3450	1.9717	1.6058

* < 0.0001 α = 0.05

Source: own calculation

Based on the calculated kurtosis and skewness values, it can be argued that the conditions for a normal distribution have been met. The results of the correlation analysis confirmed that the positive effect of ethical business on firm performance (y2) is weakly positively dependent on factors x1 and x5 (0.3219 - 0.3876).

The LRM results showed that the positive impact of ethical entrepreneurship on firm performance (y2) is 21.5% (Adjusted R square 0.2145), influenced by factors x1 (C = 0.2399, p-value = 0.0002) and x4 (C = 0.1596, p-value = 0.0074) in the Slovak Republic. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (Variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{2SR} = 0.6970 + \mathbf{0.2399} x1 + 0.1037 x2 - 0.0116 x3 + \mathbf{0.1596} x4 + 0.0823 x5$$

Poland

Table 5. Regression and correlation analysis for y1 in Poland

<i>Descriptive</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.6982	1.5669	1.7244	1.8215	1.8031	1.8058
Standard Error	0.0399	0.0369	0.0383	0.0414	0.0404	0.0443
Standard Deviation	0.7785	0.7210	0.7470	0.8076	0.7885	0.8639
Kurtosis	2.9754	3.2203	0.9013	1.4641	1.9050	1.3056
Skewness	1.3570	1.4582	0.9157	0.9987	1.0763	1.1243
<i>Correlation</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y1</i>	1					
<i>x1</i>	0.4510	1				
<i>x2</i>	0.4222	0.5693	1			
<i>x3</i>	0.5168	0.5629	0.5507	1		
<i>x4</i>	0.4046	0.4514	0.4974	0.6348	1	
<i>x5</i>	0.3274	0.4180	0.4388	0.5650	0.7164	1
Regression	statistics	Multiple R	R Square	Adj. R Square	F	p-value
		0.5643	0.3185	0.3094	35.0456	0.000*
<i>Coefficients</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
	0.5294	0.1980	0.1220	0.3023	0.0985	-0.0445
<i>Standard Deviaton</i>	0.7785	0.7210	0.7470	0.8076	0.7885	0.8639
<i>t Stat</i>	5.3485	3.2819	2.0842	5.0377	1.4785	-0.7875
<i>p-value</i>	0.0000	0.0011	0.0378	<0.0001	0.1401	0.4315
<i>VIF</i>		1.7181	1.7375	2.1327	2.5058	2.1615

*<0.0001 α = 0.05

Source: own calculation

Based on the kurtosis and skewness values, it can be concluded that the conditions for a normal distribution were met. The results of the correlation analysis confirmed that the acceptance of ethical implications of business decisions (y1) is moderately positively dependent on factors x1 to x4 (0.4046 - 0.5168) and weakly positively dependent on factor x5 (0.3274).

LRM results showed that acceptance of ethical implications of business decisions (y1) is 31% (adjusted R square 0.3094) influenced by factors x1 (C = 0.1980, p-value = 0.0011), x2 (C = 0.1220, p-value = 0.0378) and x3 (C = 0.3032, p-value = <0.0001) in Poland. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{IPL} = 0.5294 + 0.1980 x X1 + 0.1220 x X2 + 0.3023 x X3 + 0.0985 x X4 - 0.0445 x X5$$

Table 6. Regression and correlation analysis for y2 in Poland

<i>Descriptive</i>	<i>y2</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.6850	1.5669	1.7244	1.8215	1.8031	1.8058
Standard Error	0.0419	0.0369	0.0383	0.0414	0.0404	0.0443
Standard Deviation	0.8179	0.7210	0.7470	0.8076	0.7885	0.8639
Kurtosis	2.0496	3.2203	0.9013	1.4641	1.9050	1.3056
Skewness	1.3059	1.4582	0.9157	0.9987	1.0763	1.1243
<i>Correlation</i>	<i>y2</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y2</i>	1					
<i>x1</i>	0.4955	1				
<i>x2</i>	0.3959	0.5693	1			
<i>x3</i>	0.4883	0.5629	0.5507	1		
<i>x4</i>	0.3729	0.4514	0.4974	0.6348	1	
<i>x5</i>	0.3452	0.4180	0.4388	0.5650	0.7164	1
<i>Regression</i>	<i>statistics</i>	Multiple R	R Square	Adj. R Square	F	p-value
		0.5608	0.3145	0.3053	34.4057	0.000*
	<i>y2</i>					
<i>Coefficients</i>	0.4750	0.3298	0.0687	0.2590	0.0236	0.0335
<i>Standard Deviaton</i>	0.8179	0.7210	0.7470	0.8076	0.7885	0.8639
<i>t Stat</i>	4.5542	5.1884	1.1132	4.0953	0.3363	0.5625
<i>p-value</i>	0.0000	<0.0001	0.2663	0.0001	0.7369	0.5741
<i>VIF</i>		1.7181	1.7375	2.1327	2.5058	2.1615

*<0.0001 $\alpha = 0.05$

Source: *own calculation*

The kurtosis and skewness values confirmed that the conditions for a normal distribution were met. The results of the correlation analysis confirmed that the positive effect of ethical entrepreneurship on firm performance (*y2*) is weakly positively dependent on factors *x2*, *x4* and *x5* (0.3452 - 0.3959) and moderately positively dependent on factors *x1* and *x3* (0.4955 and 0.4883).

The LRM results showed that the positive effect of ethical business on firm performance in Poland is 30.5% (adjusted R square 0.3053), influenced by factors *x1* ($C = 0.3298$, p-value = <0.0001) and *x3* ($C = 0.2590$, p-value = 0.0001). The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (*x*) are moderately correlated (in the interval $1 < VIF < 5$).

The given regression model is constructed from the following variables:

$$y_{2PL} = 0.4750 + \mathbf{0.3298} \mathbf{x1} + 0.0687 \mathbf{x2} + \mathbf{0.2590} \mathbf{x3} + 0.0236 \mathbf{x4} + 0.0335 \mathbf{x5}$$

Hungary

Table 7. Regression and correlation analysis for y1 in Hungary

<i>Descriptive</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
Mean	1.5230	1.5661	1.6983	1.6667	1.7615	1.7098
Standard Error	0.0319	0.0386	0.0398	0.0383	0.0451	0.0444
Standard Deviation	0.5949	0.7192	0.7425	0.7149	0.8406	0.8276
Kurtosis	0.0269	2.6427	1.0814	1.4247	0.9396	1.1400
Skewness	0.7368	1.3797	0.9752	1.0173	1.0597	1.1374
<i>Correlation</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
<i>y1</i>	1					
<i>x1</i>	0.2558	1				
<i>x2</i>	0.3648	0.5204	1			
<i>x3</i>	0.3569	0.6035	0.6135	1		
<i>x4</i>	0.2674	0.4099	0.5446	0.6250	1	
<i>x5</i>	0.2623	0.4947	0.5136	0.6543	0.6582	1
Regression	statistics	Multiple R	R Square	Adj. R Square	F	p-value
		0.4020	0.1616	0.1493	13.1825	0.000*
<i>Coefficients</i>	<i>y1</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
	0.9030	0.0075	0.1832	0.1700	0.0088	-0.0011
<i>Standard Deviaton</i>	0.5949	0.7192	0.7425	0.7149	0.8406	0.8276
<i>t Stat</i>	10.5106	0.1405	3.4187	2.5862	0.1737	-0.0200
<i>p-value</i>	0.0000	0.8884	0.0007	0.0101	0.8622	0.9841
<i>VIF</i>		1.7023	1.8254	2.5448	2.0936	2.1892

* < 0.0001 α = 0.05

Source: own calculation

Based on the calculated values of kurtosis and skewness, it can be concluded that the conditions for a normal distribution were met. The results of the correlation analysis confirmed that the acceptance of ethical implications of business decisions (y1) is weakly positively dependent on factors x1 to x5 (0.2558 - 0.3648).

The LRM results showed that the acceptance of ethical implications of business decisions (y1) is influenced by factors x2 (C = 0.1832, p-value = 0.0007) and x3 (C = 0.1700, p-value = 0.0101) from almost 15% (adjusted R square 0.1493) in Hungary. The other factors examined are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{1HU} = 0.9030 + 0.0075 x1 + \mathbf{0.1832 x2} + \mathbf{0.1700 x3} + 0.0088 x4 - 0.0011 x5$$

Table 8. Regression and correlation analysis for y2 in Hungary

<i>Descriptive</i>	y2	x1	x2	x3	x4	x5
Mean	1.4770	1.5661	1.6983	1.6667	1.7615	1.7098
Standard Error	0.0356	0.0386	0.0398	0.0383	0.0451	0.0444
Standard Deviation	0.6636	0.7192	0.7425	0.7149	0.8406	0.8276
Kurtosis	2.5293	2.6427	1.0814	1.4247	0.9396	1.1400
Skewness	1.4236	1.3797	0.9752	1.0173	1.0597	1.1374
<i>Correlation</i>	y2	x1	x2	x3	x4	x5
y2	1					
x1	0.2598	1				
x2	0.3280	0.5204	1			
x3	0.2389	0.6035	0.6135	1		
x4	0.2252	0.4099	0.5446	0.6250	1	
x5	0.2318	0.4947	0.5136	0.6543	0.6582	1
<i>Regression statistics</i>	Multiple R	R Square	Adj R Square	F	p-value	
	0.3481	0.1212	0.1083	9.4303	0.000*	
<i>Coefficients</i>	y2	x1	x2	x3	x4	x5
<i>Standard Deviaton</i>	0.8773	0.1055	0.2198	-0.0315	0.0262	0.0395
<i>t Stat</i>	0.6636	0.7192	0.7425	0.7149	0.8406	0.8276
<i>p-value</i>	8.9415	1.7282	3.5913	-0.4193	0.4517	0.6575
<i>VIF</i>	0.0000	0.0849	0.0004	0.6752	0.6518	0.5113
		1.7023	1.8254	2.5448	2.0936	2.1892

*<0.0001 α = 0.05

Source: *own calculation*

Based on the kurtosis and skewness values, it can be argued that the conditions for a normal distribution have been met. The results of the correlation analysis confirmed that the positive impact of ethical business on firm performance (y2) is weakly positively dependent on factors x1 to x5 (0.2252 - 0.3280).

The LRM results showed that the positive impact of ethical entrepreneurship on firm performance (y2) is only 10.8% (adjusted R square 0.1083) influenced by factor x2 in Hungary (C = 0.2198, p-value = 0.0004). The other examined factors are not statistically significant.

This regression model is statistically significant (p-value < 0.0001).

Based on the results of the VIF calculation to identify multicollinearity (variance inflation factor), the independent variables (x) are moderately correlated (in the interval 1 < VIF < 5).

The given regression model is constructed from the following variables:

$$y_{2HU} = 0.8773 + 0.1055 x1 + \mathbf{0.2198 x2} - 0.0315 x3 + 0.0262 x4 + 0.0395 x5$$

Table 9. Summarization of regression analyses for y1

Country	Regression models for y1
CR	$y1_{CR} = 0.7912 + \mathbf{0.1998 x1} + 0.0595 x2 + 0.0408 x3 + 0.0591 x4 + \mathbf{0.1506 x5}$
SR	$y1_{SR} = 0.8679 + \mathbf{0.2122 x1} + 0.0398 x2 + 0.0253 x3 + 0.0787 x4 + \mathbf{0.0967 x5}$
PL	$y1_{PL} = 0.5294 + \mathbf{0.1980 x1} + \mathbf{0.1220 x2} + \mathbf{0.3023 x3} + 0.0985 x4 - 0.0445 x5$
HU	$y1_{HU} = 0.9030 + 0.0075 x1 + \mathbf{0.1832 x2} + \mathbf{0.1700 x3} + 0.0088 x4 - 0.0011 x5$

The results in Table 9 present the frequency of occurrence of each financial management factor in the implementation of business ethics in the business activities of SMEs.

Knowledge of financial management (x1) is the most frequent factor that determines the implementation of business ethics in the management decisions of SMEs in the V4 countries (occurring in the Czech Republic, Slovakia, and Hungary). This is followed by factors x2

(occurring in Poland and Hungary), x3 (occurring in Poland and Hungary), and x5 (occurring in the Czech Republic and Slovakia), which means that a proper understanding of financial risk in business, SMEs' entrepreneurial optimism (belief in the ability to manage financial risks and belief in the firm's survival in the medium term) are the second most frequently occurring factors for the implementation of business ethics in the SME segment. The x4 factor did not emerge as a significant factor influencing the implementation of business ethics in any V4 country. A positive evaluation of the financial performance of the firm did not have an impact on the implementation of business ethics in the management decisions of SMEs, which is largely surprising.

Table 10. Summarization of regression analyses for Y2

Country	Regression models for y2
CR	$y_{2CR} = 0.7828 + 0.2146 x1 - 0.0124 x2 + 0.1164 x3 + 0.0908 x4 + 0.1613 x5$
SR	$y_{2SR} = 0.6970 + 0.2399 x1 + 0.1037 x2 - 0.0116 x3 + 0.1596 x4 + 0.0823 x5$
PL	$y_{2PL} = 0.4750 + 0.3298 x1 + 0.0687 x2 + 0.2590 x3 + 0.0236 x4 + 0.0335 x5$
HU	$y_{2HU} = 0.8773 + 0.1055 x1 + 0.2198 x2 - 0.0315 x3 + 0.0262 x4 + 0.0395 x5$

Source: *own calculation*

Table 10 shows the frequencies of the occurrence of each factor in each V4 country.

Knowledge of the financial management of the company most often influences the attitude of entrepreneurs that ethical behaviour has a positive impact on firm performance (y2). This trend was found in the Czech Republic, Slovakia, and Poland. The second most frequently occurring factor was x3, which can be interpreted that the ability to manage financial risks positively influences the application of business ethics in SMEs in the V4 countries. Factors x2, x4 and x5 occur only sporadically.

Table 11 shows the results of testing the defined scientific hypotheses by V4 countries.

Table 11. Hypotheses overview

	H1a	H1b	H2a	H2b	H3a	H3b	H4a	H4b	H5a	H5b
CZ	C	C	R	R	R	R	R	R	C	C
SK	C	C	R	R	R	R	R	C	C	R
PL	C	C	C	R	C	C	R	R	R	R
HU	R	R	C	C	C	R	R	R	R	R

C – confirmed R – rejected

Source: *own calculation*

Based on the results of Table 9, it can be argued that H1-5a have been confirmed. Of the five factors defined, four are present in the regression models in the V4 countries.

Based on the results of Table 10, it can be argued that H1-5b have been partially confirmed. Of the five defined factors, all occur in the regression models in the V4 countries, but with lower frequencies than is the case for H1-5a.

A more detailed evaluation of the statistical hypotheses by V4 country is as follows (Table 11):

H1a is valid for the Czech Republic, Slovakia and Poland. H1b is valid for the Czech Republic, Slovakia and Poland. H2a is valid for Poland and Hungary. H2b is valid only in Hungary. H3a is valid in Poland and Hungary. H3b is valid only in Poland. H4a is not valid for any V4 country. H4b is valid only in Slovakia. H5a is valid in the Czech Republic and Slovakia. H5b is valid only in the Czech Republic.

Discussion

The results of the research can be summarised in a few points.

First of all, the research results confirmed a relatively strong relationship between financial management factors and business ethics implementation. The defined factors of financial management have shown an influence on the formation of SMEs' approach to business ethics.

The most important financial factor determining SMEs' attitudes toward business ethics is the entrepreneurs' belief that they understand the most important aspects of the company's financial management. This indicates a significant trend that knowledge of the company's laws and pitfalls of financial management positively influences the formation of attitudes toward business ethics. Entrepreneurs who are confident in this area are more likely to apply the principles of good business conduct.

The second most frequently occurring financial factor that determines the formation of entrepreneurs' positive attitudes in business ethics is entrepreneurs' beliefs that they can appropriately manage financial risks in the company.

Factors x2 and x5 ranked third in the frequency of occurrence. This can be interpreted so that the correct understanding of financial risk and belief in the firm's survival in the medium term determine the formation of positive business ethics attitudes.

A surprising finding is that a positive evaluation of the firm's current financial performance does not affect the formation of business ethics attitudes. At the beginning of the research, we hypothesised that this factor would significantly impact the formation of positive business ethics attitudes. In a simplified form, it can be said that if I have enough money, it is easier to behave ethically. However, this is not what our research has shown.

The results of the empirical research confirm the conclusions of Krüger & Meyer (2021), who emphasise that risk is inevitable in business and needs to be dealt with. The authors assume that risk management in SMEs is not formalised and structured through standards, which was not the focus of this research; the results confirmed that SMEs demonstrated a clear belief that they can properly manage risk in the firm, which may be somewhat contradictory to the findings of Chakabva et al. (2021). On the other hand, the research results follow the findings of Syrova & Spicka (2023) and Al-Nimer et al. (2021).

The results of the research confirmed that financial aspects have a significant impact on ethical aspects in the business of SMEs in the V4 countries. In contrast, the intensity of the impact of the defined factors of financial management varies across the V4 countries, which has also been confirmed by previous studies (Metzker et al., 2021; Zvarikova et al., 2023).

In the case of entrepreneurs in the Czech Republic, two significant factors are found to determine the application of ethical motives in business, and these are entrepreneurs' knowledge of the firm financial management (x1) and entrepreneurs' belief that their firm will survive the next five years (x5). Similar results were observed in Slovakia. The ethical behaviour of entrepreneurs is determined by factors x1 and x5. The attitudes of Polish SMEs showed that the acceptance of ethical implications in business activities is determined by factors x1 (knowledge of financial management), x2 (correct understanding of financial risk in business) and x3 (ability to manage financial risks in the firm appropriately). The attitudes of Hungarian SMEs differ significantly from those of the rest of the V4 countries. Business ethics is determined only by factors x2 (correct understanding of financial risk) and x3 (ability to manage financial risks appropriately in the company).

The research results complement the scientific knowledge formulated by other authors in their studies in the context of the financial management of SMEs. The knowledge of financial management gives firms better access to external financing (Stoiljkovic et al., 2021; Ključnikov

& Belas, 2016). In this context, Kotaskova et al. (2020), Valaskova et al. (2023), Potkany et al. (2021), and Dvorsky et al. (2021) emphasise the need to have appropriate financial risk management tools, with the authors highlighting the fact that professional failure to manage this risk negatively affects the sustainability of SMEs in the market (similar results are presented by Buljubasic Musanovic & Halilbegovic, 2021).

This research proves that knowledge of the basic aspects of financial management and appropriate financial risk management also strengthens the ethical attitudes of SMEs.

Conclusion

The paper aimed to quantify the impact of selected financial management factors on business ethics in the SME segment in the V4 countries.

The empirical research pointed out several interesting scientific findings. The results show that the selected financial management factors of SMEs significantly impact the formation of entrepreneurs' attitudes towards business ethics. Knowledge of the most important aspects of the firm financial management represents the most significant factor influencing the application of ethical aspects in the management process of SMEs and their positive perception of business ethics in the context of financial performance. Other financial factors, namely entrepreneurs' belief that they can appropriately manage financial risks in the company, correct understanding of financial risk and belief in the firm's survival in the medium term, have also significantly impacted business ethics. A surprising finding is that a positive assessment of a firm's current financial performance does not impact the formation of attitudes in business ethics.

The intensity of the impact of financial management factors on business ethics varies across the V4 countries. While the attitudes of SMEs in the Czech Republic, Slovakia, and Poland have similar characteristics, Hungarian SMEs differ significantly from them.

The scientific findings from this research confirmed that the financial aspects of SMEs' business determine their attitudes towards business ethics. These attributes are not only crucial for the survival of firms, but also positively shape business ethics. The research results can be a valuable inspiration for policymakers concerning SMEs but also for these enterprises.

This study has several limitations. First of all, it should be noted that the empirical research was carried out on a representative sample of SMEs in the V4 countries only. Similar research may show different results in other areas of the world. Another limitation may be the period in which the research was carried out. The turbulent political and economic environment (the war in Ukraine, the reverberations of the COVID pandemic, the enormous inflation in European countries, the rise in energy prices, and other factors) may also have influenced the attitudes of SMEs in the countries surveyed.

Our future research will focus on quantifying financial factors' impact on business ethics in a "calm and stable" economic environment and comparing the results with the intention of verifying or modifying the obtained scientific knowledge.

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