

AN ANALYSIS OF THE FINANCIAL SUSTAINABILITY AND RESILIENCE OF FOOTWEAR MANUFACTURERS IN THE CURRENT ECONOMIC CLIMATE

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Abstract

Given the current economic instability, maintaining companies' financial stability is crucial for business resilience and enhancing their ability to adapt to change. The study aims to identify the factors influencing the financial stability of footwear manufacturers in Romania and to formulate solutions to strengthen it. The analysis was based on data collected between 2015 and 2024, processed using SPSS software, by constructing a multiple linear regression econometric model. The results highlight the indicators with a significant impact on the financial sustainability of Romanian footwear manufacturers, providing useful information for more effective risk management and for maintaining long-term financial stability.

Keywords: *financial sustainability, business sustainability, resilience, risks.*

JEL Classification: M41

I. INTRODUCTION

Ensuring the financial sustainability of firms has become a pressing necessity in the context of today's challenging, unstable and uncertain economy, caused by the energy crisis, military conflicts and the health crisis. Under these circumstances, firms have had to adapt to economic changes and implement strategies that support not only profit-making but also the sustainable development of the business, with responsibility towards the environment, resources and society. In this context, a company with solid economic stability has the financial resources necessary to invest in social and environmental initiatives that support long-term projects aimed at reducing environmental impact and improving social conditions. Thus, financial sustainability provides the foundation for achieving a balance between economic, social and environmental aspects. Furthermore, numerous studies show that there is indeed a strong and positive relationship between business sustainability and financial performance (Deephouse et al., 2016; Danso et al., 2019; Yilmaz, 2021).

The main aim of the research is to identify the determinants of increased financial sustainability among footwear manufacturing firms in Romania. To achieve this aim, the following objectives have been established: 1 - To identify the factors influencing the financial sustainability of the firms in question; 2 - To assess financial sustainability in the current economic context; 3 - To propose measures to strengthen financial sustainability and increase the resilience of businesses in the sector under analysis.

To achieve the aim and objectives, data collected between 2015 and 2024 from the footwear manufacturing sector in Romania were analysed using SPSS software, thereby developing a multiple linear regression econometric model serving as an indicator of financial sustainability. The results highlight the indicators that have a significant impact on the financial sustainability of Romanian footwear companies. These are useful to manufacturers in this sector, who can carry out more detailed analyses regarding effective risk management to ensure their financial sustainability.

II. LITERATURE REVIEW

Financial performance is essential for sustaining business sustainability and resilience. Integrating sustainable ESG practices can improve margins, reduce costs and operational risks, and strengthen reputation, generating competitive advantages. Most recent literature indicates a positive relationship between sustainability and financial indicators (ROA, ROE, ROS, EBITDA), although there are mixed results and effects that depend on sectoral

materiality, time horizon and the quality of governance. The relationship is often bidirectional: strong financial performance facilitates sustainable investment, and well-integrated sustainability strengthens performance and the ability to absorb shocks. To clarify the key factors, we present a meta-analysis of representative studies on the importance of financial performance in the context of ensuring business sustainability and resilience.

Table 1. Meta-analysis of factors influencing financial performance in the context of business sustainability

Authors	Title	Main Objective	Study Results	Own Observations
Kılıç et al. (2022)	The Impact of Sustainability Performance on Financial Performance: Does Firm Size Matter? Evidence from Turkey and South Korea	This study aims to investigate the impact of sustainability performance on financial performance in both developed and developing countries, using the BIST and Dow Jones Sustainability Korea indices as sustainability measures, and ROE, ROA, ROS and MV/BV as financial performance measures.	Using regression models, this research finds that the sustainability variable has a significant impact on a single variable for Turkey, namely ROA, whilst for South Korea the sustainability variable has a high impact on the ROE and ROA variables.	A representative study analysing the relationship between sustainability and financial performance, which offers important insights into the factors that decisively influence the financial sustainability of firms.
Dincer et al. (2023)	Nexus between Sustainability Reporting and Firm Performance: Considering Industry Groups, Accounting, and Market Measures	This study aimed to clarify the relationship between sustainability reporting and firm performance in a developing country, using ROA and Tobin Q as dependent variables.	The study's results confirm the existence of a positive link between sustainability reporting at the level of high-impact firms and their short-term financial performance. This positive relationship is explained by the fact that ROA is an accounting-oriented indicator that reflects a firm's short-term financial performance.	It provides a comprehensive overview of the relationship between sustainability reporting and a firm's financial performance, analysing various factors that influence the dependent variables ROA and Tobin Q across nine sectors of activity.
Siminica et al. (2019)	Well-Governed Sustainability and Financial Performance: A New-Integrative Approach	The objective of this study is to investigate the links between the three components of social responsibility (economic, social and environmental), financial performance, measured by the ROA and ROE indicators, and corporate governance.	The study's results are mixed, reflecting the heterogeneous nature of the social responsibility components in relation to the financial performance indicators.	A comprehensive study demonstrating that the economic component of social responsibility has a high positive impact on the ROA indicator, whilst in the case of ROE, the greatest impact comes from the economic and social components.
Güler & Küçükbay (2022)	Does Inclusion in the Sustainability	This research aims to investigate the impact of financial performance	Analysing two developing countries, the results show that	A comprehensive study providing an overview of the level

	Index Contribute to the Financial Performance of Companies: Evidence from Developing Countries	inclusion in the sustainability index, using the ROA index in relation to other sustainability indicators.	there is a strong positive relationship between a firm's profitability and its inclusion in the sustainability index.	of awareness regarding sustainability within two countries.
Velte (2019)	Does CEO Power Moderate the Link between ESG Performance and Financial Performance?: A Focus on the German Two-Tier System	This paper examines the role of company management in the relationship between ESG performance-considering its three component dimensions-and the firm's financial performance, as reflected by the ROA ratio.	The research findings show that ESG performance has a significant positive influence on the firm's financial performance, and that management incentives contribute positively to the relationship between the two elements.	Using a regression model, this study provides an important theoretical framework regarding the potential for improving financial performance.
López-Toro et al., (2021)	Influence of ESGC Indicators on the Financial Performance of Listed Pharmaceutical Companies	The objective of the research is to investigate the relationships between environmental and social indicators and financial performance, as reflected by return on assets (ROA), return on equity (ROE) and Tobin's Q.	The research results confirm a positive relationship between the ESG indicator and the financial performance measures used in this study. This reflects the fact that pharmaceutical companies invest in enhancing sustainability with a view to creating value.	A comprehensive analysis utilising structural equation modelling expressed via the partial least squares method. Therefore, I consider that investments in sustainable practices are beneficial to firms and represent a profitable strategy in any sector of activity.
Hamad & Cek (2023)	The Moderating Effects of Corporate Social Responsibility on Corporate Financial Performance: Evidence from OECD Countries	The paper aims to determine the nature and extent of changes in financial performance resulting from corporate social responsibility activities, using a range of indicators such as ROA, ROE, EPS, ESG and social responsibility indicators.	The study's findings show that corporate social responsibility has a positive influence on financial performance across OECD countries, with the exception of France, where it has a negative impact on ROA and ROE, explained by the country's distinct cultural and operational norms.	Extensive research demonstrates that companies which prioritise CSR practices and corporate governance tend to achieve higher financial performance, recording higher ROA and ROE figures.

Source: Author's own creation based on the specialist literature

These studies make a significant contribution to the specialist literature on the importance of a firm's financial performance in the context of ensuring sustainability. The most commonly used financial variables within this field are ROA and ROE, and in the present research we have added indicators such as liquidity, debt ratio, net profit, turnover and ROS. Finally, we can observe that numerous studies have examined the impact of implementing sustainable

practices on financial performance from various perspectives and across multiple sectors, thus providing an overall picture that these practices clearly influence financial performance. Therefore, business sustainability in the current context must also take into account social and environmental practices to ensure business continuity.

III. RESEARCH METHODOLOGY

To fulfil the stated aim and objectives, we constructed a sample comprising 50 leather footwear manufacturers (NACE code 1520) in Romania, ranked in descending order of turnover for the year 2024. The data were collected from the companies’ annual financial statements for the period 2015-2024. Excel and SPSS were used for data processing, with the latter being used to develop a multiple linear regression econometric model as a financial sustainability indicator. Based on the specialist literature, including the meta-analysis presented in Table 2, the following variables were established for use in the econometric modelling:

Table 2. Presentation of the variables of the econometric model

Independent variables					
Activity indicators		Risk indicators		Performance indicators	
ROA	Return on Assets	DR	Debt Ratio	TN	Turnover
ROE	Return on Equity	LQ	Liquidities	NP	Net profit
ROS	Return on Sales				
Dependent variable					
FINANCIAL SUSTAINABILITY		Solvency Ratio			

Source: Own processing

The outcome of this stage was the development of an econometric model to analyse the influence of activity, risk and performance indicators on the financial sustainability of footwear manufacturers in the context of unstable and post-crisis economic conditions (2022).

IV. RESULTS AND DISCUSSION

Following the development of the econometric models, the best results were obtained using the multiple linear regression model, as follows:

$$FS = \alpha + \beta_1 * \text{Activity indicators} + \beta_2 * \text{Risk indicators} + \beta_3 * \text{Performance indicators} + \varepsilon \quad (1)$$

where: Financial sustainability (FS) - is the dependent variable of the model, Activity, risk and performance indicators - are the independent variables, α , β_1 , β_2 , β_3 - are the parameters of the regression model, ε is the error random variable.

Table 3 shows how the correlation coefficient for the developed econometric model is determined.

Table 3. Summary of the model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.655a	.430	.426	2.067	.533

a. Predictors: (Constant), Performance indicators, Risk indicators, Activity indicators

b. Dependent Variable: Financial sustainability (FS)

Source: Own processing in SPSS

Table 3 shows that the specific value of the correlation coefficient is 0.655, which demonstrates that there is a moderate to strong relationship between the variables selected for the model.

The coefficient of determination confirms that the variation in the independent variables influences the variation in the dependent variable FS by 43%. Performance and risk indicators are essential in the current context, particularly given the economic impact of the COVID-19 pandemic and the energy crisis. At the same time, footwear manufacturers that have managed to maintain a high level of activity and optimise their operations are in a stronger financial position. Firms should develop and implement adaptation strategies to cope with market volatility and manage financial resources effectively during periods of uncertainty.

Table 4. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	1596.614	3	532.205	124.516	.000 ^b
	Residual	2119.999	496	4.274		
	Total	3716.613	499			

a. Dependent Variable: Financial sustainability

b. Predictors: (Constant), Performance indicators, Risk indicators, Activity indicators

Source: Own processing in SPSS 26

According to Table 4, the components of variation have the following values: estimated explained variation: 1596.614; estimated residual variation: 2119.999; estimated total variation: 3716.613. In the ANOVA table, the Fisher's F-value is $F = 124.516$, and the p-value for the F-test is less than 0.05; therefore, the constructed model explains the significant relationship between financial sustainability and the independent variables through a multiple linear relationship. From a statistical perspective, if the Sig. value is less than 0.05, the multiple linear model is validated at a 95% confidence level.

Table 5. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	4.483	.160	27.981	4.483	.000
	Activity indicators	.002	.001	.075	2,219	.027
	Risk indicators	-1.754	.093	-.643	-18.953	.000
	Performance indicators	.285	.093	.104	3.079	.002

a. Dependent Variable: Financial Sustainability

Source: Own processing in SPSS

Table 5 highlights the impact of the independent variables on the dependent variable, as well as the order of their influence. Determining the regression parameters of the model leads to the estimation of the equation in the following form:

$$FS = 4.483 + 0.002 * \text{Activity indicators} - 1.754 * \text{Risk indicators} + 0.285 * \text{Performance indicators} \quad (2)$$

From an econometric perspective, the model provides important insights into how the financial sustainability indicator is influenced by various factors: Thus, if activity indicators (ROA, ROE, ROS) increase by 1%, and the other variables remain constant, then financial sustainability will increase by an average of 0.002%. In this context, even if the impact of activity on financial sustainability is small, maintaining a constant level of activity through continued production and efficient inventory management is important for long-term financial stability (Barbosa et al., 2023). Our results are consistent with those obtained by Velte (2019) and Kılıç et al. (2022) who demonstrated that high values of ROA, ROE or ROS contribute to improving firms' financial sustainability, especially when firms adopt sustainable practices, including those related to the environment or the social dimension of business. Therefore, the firms analysed

should adopt environmental and social strategies involving new production technologies, which, although initially entailing additional costs, can help reduce operational costs and optimise internal processes.

On the other hand, if the Risk Indicators increase by 1% and the other variables remain constant, then Financial Sustainability will decrease by an average of 1.754%.

The economic crisis caused by the health pandemic, military conflict or energy crisis has exacerbated operational and financial risks, which explains the significant negative coefficient for the risk indicators. Therefore, financial risk management is very important for footwear manufacturers to maintain their financial sustainability. A high level of indebtedness may suggest a dependence of firms on loans, which negatively affects financial sustainability (Parvin et al., 2020) unless it occurs in the context of an increase in business opportunities, and implicitly, an increase in demand for the products offered, as argued by Macovei & Andrioaia (2022).

Finally, if performance indicators increase by 1% and the other variables remain constant, then financial sustainability will increase by an average of 0.285%. Thus, firms with a higher turnover demonstrate greater sustainability, with a positive correlation between the financial sustainability indicator and the performance indicator. This is also consistent with the results obtained by Hurduzeu et al. (2022) and Brinzaru et al. (2023) according to, which show that the appropriate application of ESG policies influences the financial sustainability of companies in the energy sector in conditions of increasing turnover or profit.

Analysing the model obtained, financial sustainability is most strongly influenced by risk indicators, followed by performance indicators, and least by activity indicators. Therefore, the financial sustainability of footwear manufacturers in Romania is strongly influenced by the ability to manage and minimise risks (for example, price fluctuations in leather or other materials, including access to them under difficult conditions such as the COVID-19 pandemic), to improve operational performance (through efficiency and innovation, as well as high adaptability to customer requirements) and, to a lesser extent, by the level of production activity itself. The COVID-19 pandemic introduced new and unpredictable risks for the footwear industry, such as disruptions in supply chains, temporary closures of physical shops, sudden changes in consumer behaviour and fluctuations in demand. Thus, the negative impact of risk indicators could be amplified during an economic crisis. On the other hand, production levels and sales have been significantly affected by pandemic-related restrictions, such as temporary closures of factories or physical shops. These restrictions have led to a decline in demand but have forced firms to adapt to more flexible business models, such as online sales and digital marketing strategies.

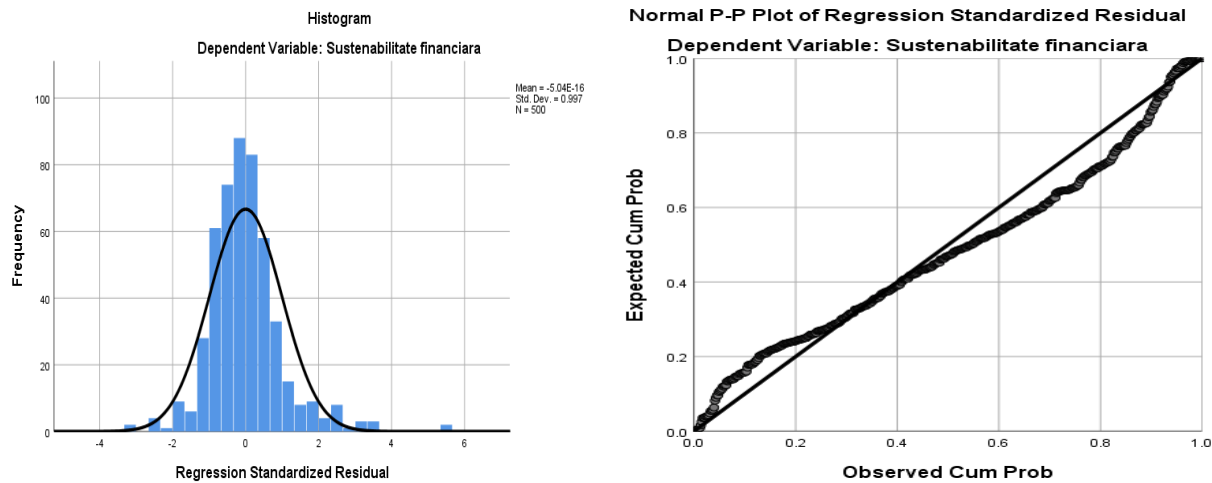


Figure 1. Histogram of errors and P-P Plot Diagram

Source: Own processing in SPSS 26

The histogram is not perfectly symmetrical, with deviations towards the right, and the P-P plot shows shifts from the specific theoretical distribution represented by Henry's line. At the same time, econometric modelling has shown that manufacturing firms with the highest turnover figures are not always the most financially sustainable. Thus, in the current economic climate, risk indicators are very important, as their effective management contributes to

business resilience. Firms that have demonstrated high financial sustainability do not record the highest TN values and even show fluctuating performance over the analysed period, but they have stable trends in profitability indicators (ROA, ROE, ROS), as well as consistent overall liquidity and a low debt ratio.

Firms that do not fit the model and face problems in ensuring financial sustainability exhibit a high debt ratio and low values for the general liquidity ratio, which has the greatest influence on ensuring financial sustainability in this area.

V. CONCLUSION

In practice, various methods are used to assess financial sustainability, offering different approaches to it. The research results have led to the development of an econometric model that highlights the economic indicators having a significant influence on the financial sustainability of footwear manufacturing companies in Romania. The correlations revealed that risk indicators, represented by debt ratio and overall liquidity, as well as performance indicators, have a significant influence on financial sustainability. Therefore, we can state that those firms which manage risk indicators most effectively tend to become more financially sustainable. On the other hand, performance indicators (ROA, ROE, ROS) have a lesser influence on business sustainability, which demonstrates that an increase in firms' activity leads to an increase in financial sustainability, in the context of adopting sustainable environmental and social practices.

Based on the results obtained, we have put forward a series of proposals aimed at contributing to the improvement of the financial sustainability of footwear manufacturers in Romania, as follows: Investments in modern and energy-efficient technologies that can reduce production costs and resource consumption; Adopting business digitalization strategies, particularly the expansion of online trade in natural leather footwear; Promoting sustainability in the supply chain, which can reduce risks associated with supply instability, particularly in times of crisis, and can enhance the transparency and efficiency of operations; Investing in continuous staff training, which can boost productivity and innovation within the company; Accessing non-repayable grants for environmental and social initiatives, which can support the implementation of sustainable projects without straining the company's financial resources.

In conclusion, a financially sustainable business can more easily attract resources and funding for environmental and social projects, demonstrating its long-term commitment and ability to generate the steady income needed to support such initiatives. Furthermore, financial sustainability enables the business to withstand economic fluctuations and cope with the risks associated with environmental and social projects, helping to build a solid reputation and increase the confidence of investors and the wider community. Thus, integrating financial sustainability into the business strategy becomes essential for ensuring the business's resilience.

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