The Nexus Between Financial Standing and Sustainable Entrepreneurship: Insights from Poland

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Abstract— **This paper analyses the relationship between financial standing and sustainable entrepreneurship in Poland from 2008–2022. In a broad economic context, understanding how financial stability influences sustainable business development is crucial for fostering long-term economic resilience. To quantify these concepts, synthetic indicators of financial standing and sustainable entrepreneurship are constructed using a variable normalization method. The econometric analysis employs Ordinary Least Squares (OLS) and Seemingly Unrelated Regression (SUR) models to capture the general effect and potential interdependencies across different sustainability dimensions. The OLS results indicate a statistically significant (<0.05) positive relationship between financial standing and sustainable entrepreneurship, suggesting that improved financial conditions support sustainable business practices. However, the SUR model reveals a more complex structure, with varying effects across different sustainability pillars, indicating that financial standing does not uniformly influence all aspects of sustainable entrepreneurship. These findings highlight the necessity of a differentiated policy approach to financial support mechanisms, recognizing that the impact of financial stability is not homogenous. Policymakers should consider tailored financial instruments to enhance sustainable entrepreneurship while addressing specific sectoral needs. Further research could extend this framework to other EU countries, examining cross-country differences and dynamic interactions in broader macroeconomic conditions.**

Keywords— sustainable entrepreneurship, financial standing, the OLS method, the SUR estimation

I. INTRODUCTION

Sustainable entrepreneurship is a compelling and significant research topic, highly relevant to modern economies' stable and long-term economic prosperity. It is widely recognized that sustainable entrepreneurship is defined and measured in diverse ways, depending on the research perspective and the specific socio-economic context. In this paper, we define sustainable entrepreneurship as business activity spanning various economic sectors, where entrepreneurs not only generate profits but also create added value for employees and society while implementing environmentally friendly techniques, tools, and innovations. This approach aligns with the broader understanding of sustainability, emphasizing entrepreneurship's economic, social, and environmental dimensions.

Despite the growing interest in sustainable entrepreneurship, limited research has explored the impact of financial standing on its development. This study aims to address this gap by investigating the role of financial stability in fostering sustainable entrepreneurial activities. The novelty of this research lies in its comprehensive approach, incorporating both single-equation and multi-equation models to capture the complexity of this relationship. The single-equation models are estimated using the Ordinary Least Squares (OLS) method, while the multi-equation models—decomposing sustainable entrepreneurship into its economic, social, and environmental pillars—are estimated using the Seemingly Unrelated Regression (SUR) method.

The analysis relies on annual data from Statistics Poland (GUS) covering 2008–2022. All models meet the necessary assumptions for applying these econometric methods, including linearity, homogeneity of regressors, no perfect multicollinearity, homoscedasticity in OLS, and the consideration of cross-equation error correlations in SUR.

The findings reveal that financial standing plays a significant role in shaping sustainable entrepreneurship, but its impact is not uniform across its three key dimensions. The OLS results indicate a statistically significant (<0.05) positive relationship between financial standing and overall sustainable

entrepreneurship, suggesting that improved financial conditions support developing businesses that incorporate sustainability principles. However, the SUR model provides deeper insights, showing that financial standing affects sustainable entrepreneurship's economic, social, and environmental pillars in different ways. While stronger financial stability tends to enhance economic performance and social responsibility initiatives, its effect on environmentally friendly innovations and practices is more variable. In some cases, financial constraints may limit investments in green technologies, while in others, financial standing enables firms to adopt sustainability-driven innovations more effectively.

These findings highlight the need for policymakers to tailor financial support mechanisms for sustainable entrepreneurship. Policies should account for the varying effects of financial standing on sustainability dimensions, offering targeted incentives for environmentally responsible practices while strengthening social and economic sustainability. Integrating financial stability indicators into sustainability assessments can enhance evaluations of business resilience. Future research could extend this analysis to other EU countries to explore cross-country differences and the role of macroeconomic conditions in shaping financial sustainability.

II. THEORETICAL BACKGROUND

Sustainable entrepreneurship constitutes a fundamental pillar of sustainable development. Due to its broad scope and multidimensional character, the concept is subject to various definitions. As a relatively recent term, its complexity necessitates an analytical approach that adequately captures contemporary socio-economic realities (Matera et al., 2023; Kowalska et al., 2024).

Sustainable entrepreneurship is a business activity model founded on three interdependent pillars: economic, social, and environmental. The role of an entrepreneur extends beyond the pursuit of financial gains, wealth accumulation, or enterprise value maximization. It also encompasses improving working conditions, employee development, support for local communities, and implementing measures aimed at minimizing the adverse environmental impact of business operations (Bajdor, 2019; Bakry, 2022).

The essence of sustainable entrepreneurship lies in establishing and managing business entities to ensure economic viability while maintaining social cohesion and environmental integrity. This requires identifying and utilizing opportunities, risk mitigation, and the effective allocation of resources (Gregori & Holzmann, 2020). Sustainable entrepreneurship development necessitates the implementation of dedicated support programs, socio-economic policy initiatives, financial instruments, and strategies for environmental protection (Hägg & Kurczewska, 2021)

From an analytical perspective, sustainable entrepreneurship may be examined through a quantitative framework wherein economic, social, and environmental outcomes are dependent variables. Applying the Triple Bottom Line approach enables

identifying key dimensions such as economic value, ecological sustainability, social responsibility, innovation, business development, and strategic decision-making, all of which contribute to a more balanced and forward-looking economic model (Gu et al., 2021; Sahoo & Upadhyay, 2024].

The conditions under which businesses operate—including macroeconomic stability, environmental regulations, knowledge transfer, and scientific research advancements—play an instrumental role in shaping their capacity for sustainable development (Rosário & Raimundo, 2024). Financial standing is a fundamental construct among these determinants, encapsulating a firm's financial and asset position. The concept of financial standing is inherently multifaceted, with its definitional scope varying across contexts and scholarly perspectives. In financial practice, it is frequently employed in banking and investment decision-making to indicate a company's creditworthiness and investment potential (Boratyńska, 2024).

Financial standing reflects a firm's ability to finance its current operations and long-term strategic objectives using available assets. This encompasses the capacity to cover labour and operational expenditures, service debt obligations, distribute dividends, and fulfil financial commitments. Such financing may derive from either internally generated funds or external capital sources. The assessment of financial standing is traditionally conducted through a set of key financial indicators about liquidity, leverage, operational efficiency, and profitability (Faulkner, 2015; Abdi et al., 2022).

A sophisticated framework for evaluating corporate financial standing distinguishes four principal subsystems: financial liquidity, profitability, operational efficiency, and financial structure. These dimensions reveal two fundamental characteristics of financial standing. First, they encapsulate short-term and long-term determinants of a firm's financial condition. Second, they are integral to the enterprise's and its stakeholders' financial standing. These two analytical dimensions form interdependent structures that encapsulate current and prospective business performance and incorporate the social and environmental determinants underpinning corporate existence and growth (Roszkowska, 2021; Mateev & Poutziouris, 2019).

To examine the relationship between financial standing and sustainable development, a refined conceptualization of financial standing may be articulated as follows: it represents the financial condition of an enterprise, determined by the extent and nature of profit generation, retention, and allocation, to sustain and advance economic, social, and environmental systems. This definition underscores the instrumental role of profit management in corporate strategy and highlights the pivotal function of sustainable development in realizing corporate objectives and missions (Pazdzior et al., 2021; Araya et al., 2024).

The effective management of financial standing necessitates establishing a system that integrates, coordinates and synchronizes various operational domains, extending beyond financial outcomes alone. Non-financial determinants also profoundly influence a firm's long-term sustainability and

competitiveness, encompassing macroeconomic, environmental, and social factors. From an asset-based perspective, profit is a critical mechanism for acquiring, accumulating, and strategically deploying resources to achieve immediate and long-term objectives (Sherwani et al., 2024). A firm is deemed to have generated profit when its asset value at the close of an accounting period surpasses that recorded at the beginning, excluding any owner-contributed or withdrawn funds (Jefri et al., 2024; Soana, 2024).

Financial standing, thus conceptualized as the financial and asset position of an enterprise, determines its capacity to sustain and advance economic, social, and environmental systems (Bajic & Yurtoglu, 2018; Sierpińska & Szczepankowski, 2024). Its evaluation necessitates a comprehensive set of financial indicators, the selection of which is contingent upon the specific research perspective adopted. Conducting sectoral analyses of financial standing presents a distinctive methodological challenge, primarily due to constraints in accessing granular financial data, particularly cash flow statements, which constitute a significant limitation in empirical research (Ahlström & Monciardini, 2021; Li et al., 2024).

Financial standing, encompassing its constituent dimensions, exerts a tangible impact on sustainable development, necessitating an evaluation of the magnitude and direction of this relationship. Business expansion, particularly in the context of sustainability-oriented investments, is often constrained or rendered unfeasible in the absence of external financial support, given that a significant proportion of ecological investments are realized through the participation of financial institutions.

III. RESEARCH METHODOLOGY

This research aims to assess the impact of financial standing on sustainable entrepreneurship (SEnt) in Poland between 2008 and 2022. The analysis is based on annual data from the Statistics Poland (GUS) database and employs synthetic indicators representing sustainable entrepreneurship, encompassing three fundamental pillars: economic, social, and environmental. The study aims to determine the extent to which financial standing influences sustainable entrepreneurship development and identify potential disparities among its key dimensions.

The central hypothesis (H) is as follows: Financial standing is a key determinant of sustainable entrepreneurship in Poland, shaping its economic, social, and environmental dimensions over time. We also introduce several key research questions to guide our analysis:

-What is the dynamic relationship between sustainable entrepreneurship and financial standing in Poland from 2008–2022?

-How does financial standing influence the three pillars of sustainable entrepreneurship (economic, social, and environmental) in Poland?

We conducted our research in stages. First, I form the indicator of SEnt. We use the following formula:

$$SEnt_i = \frac{E_i + S_i + Env_i}{k} = \quad (1)$$

$$\frac{\frac{1}{n}\sum_{j=1}^{n} E_i + \frac{1}{n}\sum_{j=1}^{n} S_i + \frac{1}{n}\sum_{j=1}^{n} Env_i}{k} ; \ (i = 1, 2, \dots, n)$$

where SEi stands for the synthetic indicator in the i-year; n is the number of metrics Eu – economic entrepreneurship in the i-year; Si - social entrepreneurship in the i-year; Envi – environmental entrepreneurship in the i-year; k- the number of entities in the national economy registered in the REGON database per 10,000 inhabitants.

Next, we standardize the explanatory variables to ensure consistent measurement scales by applying the following formulas:

$$z_{ij} = \frac{y_{ij}}{\max_i\{y_{ij}\}}, z_{ij} \in [0; 1]; \quad (2)$$

for the destimulants:

$$z_{ij} = \frac{\min_i\{y_{ij}\}}{y_{ij}}, z_{ij} \in [0; 1]. \quad (3)$$

where zij stands for the normalized value of the j-th variable in the i-th year; yij is the value of the j-th variable in the i-th year; $\min_i\{y_{ij}\}$ is the lowest value of the j-th variable in the i-th year; $\max_i\{y_{ij}\}$ is the highest value of the j-th variable in the i-th year.

We normalised the SEnt and its pillars (E, S, Env) indicators based on diagnostic variables divided into stimulants and destimulants.

Economic pillar (E) includes variables that reflect the country's overall economic activity and performance. Key indicators include the total number of companies in the country, turnover or gross premiums, production value, value added at factor cost, and gross operating surplus. Other important variables include total purchases of goods and services, gross investment in tangible goods, and investment rate (investment relative to value added at factor cost). Additionally, the share of personnel costs in production and average personnel costs are considered destimulants, as they may hinder economic performance when they increase beyond optimal levels.

Social pillar (S) is captured by variables that measure employment, wages, and social standing costs. This includes the total number of employees, turnover per person employed, and labour productivity. Gross value added per employee, growth rate, and the number of persons employed per enterprise are also important indicators. Investment per person employed is another stimulant, while personnel costs are considered a destimulant as they represent an ongoing expense that may limit social development if not properly managed.

Environmental pillar (Env) focuses on the negative impacts of industrial activities on the environment. The key variables in this category include emissions of carbon dioxide, methane, nitrous oxide, sulfur oxides, ammonia, carbon monoxide, and nitrogen oxides, all of which are considered destimulants due to their detrimental effects on the environment. Total waste generation is another destimulant, as waste accumulation can contribute to environmental degradation.

To create the financial standing indicator we use the following formula:

$$FS = Fl + P + E + D = \quad (4)$$

$$\sum_{i=1}^{n} \frac{Fl_{ij}}{n} + \sum_{i=1}^{n} \frac{P}{n} + \sum_{i=1}^{n} \frac{E_{ij}}{n} + \sum_{i=1}^{n} \frac{D_{ij}}{n}; FS \in [0;1]$$

where: Flij; Pij; Eij ; Dij stands for the normalized value of the j-th variable in the i-th year; Fl- current liquidity; P-profitability; E- efficiency of operations; D-debts.

In the subsequent step, we conduct a regression analysis to examine the relationships between SE and FS. The simple linear regression is specified using the following formulas (5) and (6):

$$SEnt_i = \beta_0 + \beta_1 FS_i + \beta_2 FS_{(i-1)} + \varepsilon_i \qquad (5)$$

where β0 is the intercept, β1 is the slope; εi denotes the i-th residual; i is an observation index.

The residual for each observation is as follows:

$$\begin{aligned} e_i &= SEnt_i - \widehat{SEnt_i} \\ &= SEnt_i - (\hat{\beta}_0 + \hat{\beta}_1 FS_i \\ &\quad + \hat{\beta}_2 FS_{(i-1)} + e_i) \end{aligned} \qquad (6)$$

To assess the impact of FS on the economic (E), social (S), and environmental (Env) pillars are based on the following formulas:

$$\begin{aligned} E_i &= \beta_0 + \beta_1 FS_i + \beta_2 FS_{(i-1)} + \varepsilon_i \\ S_i &= \beta_0 + \beta_1 FS_i + \beta_2 FS_{(i-1)} + \varepsilon_i \\ Env_i &= \beta_0 + \beta_1 FS + \beta_2 FS_{(i-1)} + \varepsilon_i \end{aligned} \qquad (7)$$

The formula for the SUR estimator is as follows:

$$\sqrt{R}(\hat{\beta} - \beta) \xrightarrow{d} \mathbb{N}\left(0, \left(\tfrac{1}{R}X^T\left(\textstyle\sum^{-1} \otimes I_R\right)X\right)^{-1}\right) \qquad (8)$$

IV. RESEARCH RESULTS

Table 1 presents Poland's synthetic financial standing index (2008-2022) and its components: liquidity, profitability, operational efficiency, and debt indexes, along with basic descriptive statistics. The liquidity index shows high stability (average 0.94, standard deviation 0.03), ranging from 0.87 (2008) to 1.00 (2011, 2021). The profitability index has the highest volatility (standard deviation 0.14), with values between 0.54 (2015) and 0.98 (2011, 2021), reflecting macroeconomic impact. The operational efficiency index remains stable (average 0.94, standard deviation 0.03), fluctuating between 0.89 (2021) and 0.98 (2012). The debt index averaged 0.86, with a downward trend post-2011, peaking at 0.98 in 2008 and dipping to 0.77 in 2020 and 2021, likely due to fiscal policies and the pandemic. Overall, the synthetic financial standing index averaged 0.87, indicating a generally good economic situation despite periods of decline, such as in 2020 due to COVID-19. The index reached its highest value of 0.92 in 2012 and 2022, reflecting improved economic conditions.

TABLE 1.: SYNTHETIC FINANCIAL STANDING INDEX IN POLAND IN 2008-2022 AND ITS COMPONENTS – BASIC DESCRIPTIVE STATISTICS

Indicator	Year														
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fl	0,87	0,92	0,95	1,00	0,92	0,92	0,95	0,94	0,95	0,95	0,92	0,92	0,96	1,00	0,99
P	0,61	0,70	0,77	0,98	0,63	0,64	0,63	0,54	0,69	0,76	0,67	0,62	0,60	0,98	0,97
E	0,96	0,96	0,96	0,89	0,98	0,96	0,96	0,95	0,92	0,93	0,93	0,93	0,90	0,89	0,94
D	0,98	0,97	0,96	0,77	0,92	0,91	0,86	0,85	0,83	0,86	0,87	0,83	0,78	0,77	0,78
FS	0,86	0,89	0,91	0,91	0,86	0,86	0,85	0,82	0,85	0,87	0,85	0,83	0,81	0,91	0,92

Indicator	Basic descriptive statistics				
	Mean	Standard deviation	Median	Max	Min
Fl	0,94	0,03	0,95	1,00	0,87
P	0,72	0,14	0,67	0,98	0,54
E	0,94	0,03	0,94	0,98	0,89
D	0,86	0,07	0,86	0,98	0,77
FS	0,87	0,03	0,86	0,92	0,81

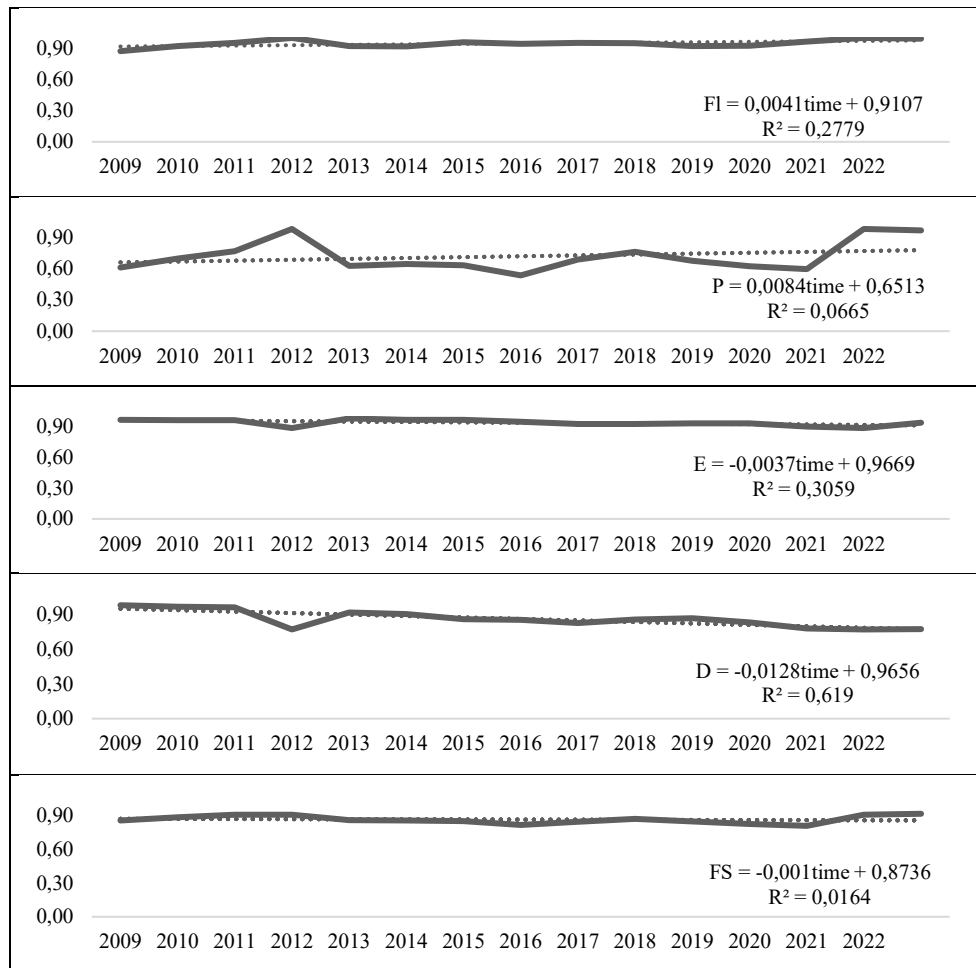Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025.

Chart 1 presents the trend lines of the synthetic financial standing index in Poland in 2008-2022 and its components (synthetic liquidity, profitability, operational efficiency, and debt indexes).

The synthetic financial liquidity index slightly increases, suggesting further financial management optimization is needed. The synthetic profitability index is also rising, but the changes are marginal, indicating the necessity of intensifying efforts to improve profitability. The synthetic operational efficiency index is declining, which may point to challenges in resource optimization, requiring investments in technology and automation. Meanwhile, the synthetic debt index shows a clear downward trend, signalling an improvement in financial stability.

The synthetic financial standing index does not exhibit significant changes, suggesting that businesses are achieving relative financial equilibrium. Table 2 presents Poland's synthetic sustainable entrepreneurship index (2008-2022) and its components: economic, social, and environmental entrepreneurship indices, along with basic descriptive statistics. The economic entrepreneurship index shows stability (average 0.80, standard deviation 0.08), ranging from 0.69 (2009) to 0.92 (2019), indicating improved economic efficiency despite global crises. The social entrepreneurship index is stable (average 0.76, standard deviation 0.06), with values between 0.68 (2010) and 0.87 (2018), reflecting the growing importance of corporate social responsibility. The environmental entrepreneurship index is highly stable (average 0.84, standard deviation 0.02), fluctuating between 0.81 (2022) and 0.87 (2010), indicating consistent pro-environmental efforts. The overall synthetic sustainable entrepreneurship index remains stable (average 0.80, standard deviation 0.04), ranging from 0.74 (2008) to 0.87 (2018), suggesting ongoing development of sustainable practices.

CHART 1. SYNTHETIC FINANCIAL STANDING INDEX IN POLAND IN 2008-2022 AND ITS COMPONENTS – TREND LINES

Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025.

TABLE 2.: SYNTHETIC SUSTAINABLE ENTREPRENEURSHIP INDEX IN POLAND IN 2008-2022 AND ITS COMPONENTS – BASIC DESCRIPTIVE STATISTICS

Indicator	Year														
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
E	0,76	0,69	0,71	0,74	0,72	0,73	0,76	0,76	0,76	0,81	0,88	0,92	0,91	0,92	0,88
S	0,70	0,69	0,68	0,70	0,70	0,71	0,74	0,75	0,76	0,77	0,87	0,85	0,82	0,83	0,79
Env	0,82	0,87	0,84	0,84	0,86	0,86	0,87	0,87	0,85	0,81	0,81	0,84	0,84	0,81	0,85
SEnt	0,76	0,75	0,74	0,76	0,76	0,77	0,79	0,79	0,79	0,80	0,85	0,87	0,86	0,85	0,84

Indicator	Basic descriptive statistics				
	Mean	Standard deviation	Median	Max	Min
E	0,80	0,08	0,76	0,92	0,69
S	0,76	0,06	0,75	0,87	0,68
Env	0,84	0,02	0,84	0,87	0,81
SEnt	0,80	0,04	0,79	0,87	0,74

Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025

Chart 2 presents the trend lines for the synthetic sustainable entrepreneurship index in Poland in 2008-2022 and its components (economic, social, and environmental entrepreneurship indexes).

The synthetic economic entrepreneurship index is growing at a moderate pace, indicating a positive trend in the economic efficiency of businesses, although further improvement is still required. The synthetic social entrepreneurship index also shows an increase, but the changes are modest, suggesting the need to intensify efforts to boost businesses' involvement in social issues. The synthetic environmental entrepreneurship index remains relatively stable, with a slight decline, indicating the insufficiency of pro-environmental actions requiring more attention.

The synthetic sustainable entrepreneurship index is growing stable, providing a positive signal indicating the development of sustainable practices in businesses. Table 3 presents the Ordinary Least Squares (OLS) regression model. The model examines the impact of the synthetic financial standing index in Poland in 2008-2022 (with one- and two-period lags) on the synthetic sustainable entrepreneurship index in Poland in 2008-2022.

The results meet the conditions for OLS estimation, including the absence of multicollinearity, homoscedasticity,

normality of variable distributions, and autocorrelation.

Considering the possible occurrence of autocorrelation (based on the Durbin-Watson test), an LM test was conducted, indicating no evidence of autocorrelation in this case.

The model shows that the independent variables – FS(t-1) and FS(t-2) – have a significant negative impact on the dependent variable SEnt. The model is statistically significant and well-fitted to the data. Regarding practical economic implications, placing too much emphasis on improving financial standing in the short and medium term (e.g., through aggressive cost-cutting policies, increasing debt, or excessive focus on financial results) may harm long-term sustainable entrepreneurship. In economic development, businesses may focus on short-term profits, neglecting aspects such as environmental care, innovation, community involvement, or long-term stability.

CHART 2. SYNTHETIC SUSTAINABLE ENTREPRENEURSHIP INDEX IN POLAND IN 2008-2022 AND ITS COMPONENTS – TREND LINES
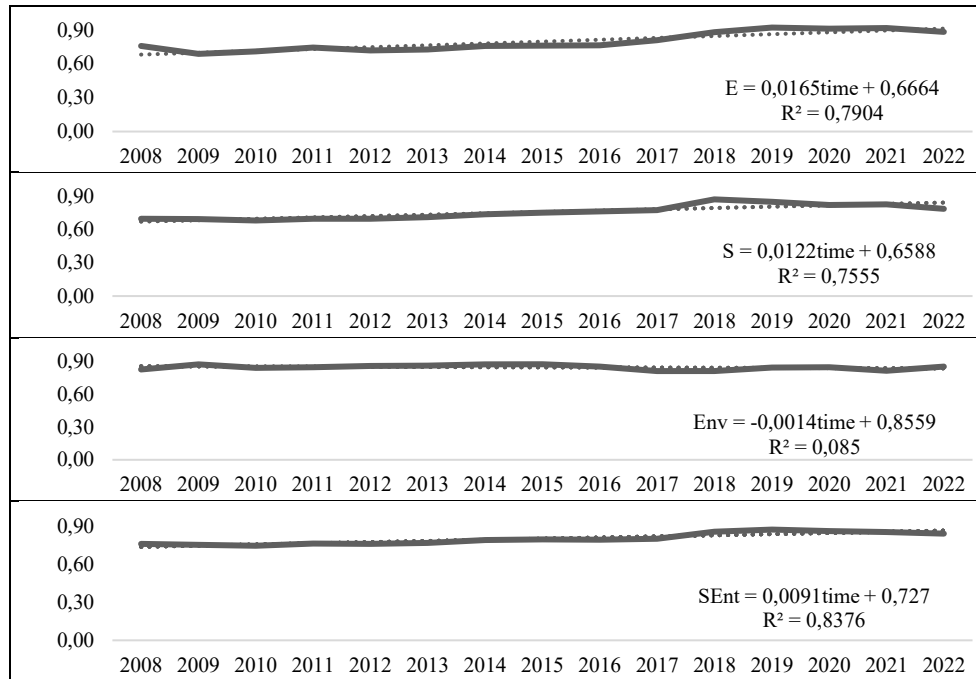
Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025

TABLE 3.: LINEAR REGRESSION MODEL, ORDINARY LEAST SQUARES (POLAND, 2008-2022)

Model 1: OLS, using observations 2008-2022 (T = 15)				
Dependent variable: SE				
Poland	Coefficient	Std. Error	t-ratio	p-value
const	2,065	0,373	5,537	0,0004 ***
FS(t-1)	−0,534	0,267	−2,002	0,0763 *
FS(t-2)	−0,920	0,325	−2,827	0,0198 **
Mean dependent var	0,812		S. D. dependent var	0,041
Sum squared resid	0,008		S. E. of regression	0,030
R-squared	0,558		Adjusted R-squared	0,460
F (2, 9)	5,688		P-value (F)	0,025
Log-likelihood	26,606		Akaike criterion	−47,212
Schwarz criterion	−45,758		Hannan-Quinn	−47,751
rho	0,494		Durbin-Watson	0,915
LM test for autocorrelation up to order 1				
Null hypothesis: no autocorrelation				
Test statistic: LMF = 2,905				

Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025. Table 4 presents a model estimated using the Seemingly Unrelated Regressions (SUR) method, analyzing the interrelationships between economic, social, and environmental entrepreneurship in Poland (2008-2022) and the synthetic financial standing index, along with one-period lagged synthetic entrepreneurship indices. The SUR method accounts for interdependence between equations and avoids heteroscedastic residuals.

The model meets classical estimation assumptions without issues of multicollinearity, homoscedasticity, or residual distribution. The Breusch-Pagan test confirmed residual interdependence, justifying the SUR model, and the Hansen-Sargan test indicated correct model specification. Results show that financial standing positively impacts economic entrepreneurship while negatively affecting social and environmental entrepreneurship. Social entrepreneurship strongly supports economic entrepreneurship, but economic entrepreneurship negatively impacts environmental entrepreneurship, though this effect is partially balanced over time.

TABLE 4.: SEEMINGLY UNRELATED REGRESSIONS METHOD (SUR) (POLAND, 2008-2022)

Equation system, Seemingly Unrelated Regressions				
Equation 1: SUR, using observations 2008-2022 (T = 15)				
Dependent variable: E				
Poland	Coefficient	Std. Error	t-ratio	p-value
const	-0,622	0,143	-4,357	0,0014 ***
FS	0,393	0,131	3,01	0,013 **
S	0,936	0,123	7,637	1,76e-05 ***
S(t-1)	0,49	0,116	4,216	0,0018 ***
Mean dependent var	0,8001		S. D. dependent var	0,085
Sum squared resid	0,004		S. E. of regression	0,017
R-squared	0,956		Adjusted R-squared	0,943
Equation 2: SUR, using observations 2008-2022 (T = 15)				

Equation system, Seemingly Unrelated Regressions				
Equation 1: SUR, using observations 2008-2022 (T = 15)				
Dependent variable: E				
Dependent variable: S				
Poland	Coefficient	Std. Error	t-ratio	p-value
const	0,494	0,147	3,353	0,0064 ***
FS	-0,326	0,15	-2,177	0,0521 *
E	0,685	0,062	11,05	2,70e-07 ***
Mean dependent var	0,761		S. D. dependent var	0,063
Sum squared resid	0,005		S. E. of regression	0,019
R-squared	0,903		Adjusted R-squared	0,885
Equation 3: SUR, using observations 2008-2022 (T = 15)				
Dependent variable: Env				
Poland	Coefficient	Std. Error	t-ratio	p-value
const	1,165	0,091	12,83	1,56e-07 ***
FS	-0,239	0,093	-2,571	0,0279 **
E	-0,401	0,087	-4,599	0,0010 ***
E(t-1)	0,264	0,088	2,993	0,0135 **
Mean dependent var	0,846		S. D. dependent var	0,021
Sum squared resid	0,002		S. E. of regression	0,012
R-squared	0,678		Adjusted R-squared	0,581
Cross-equation VCV for residuals (correlations above the diagonal)				
	0,00029757	(-0,858)	(0.307)	
	-0,00028067	0,00035951	(-0.362)	
	6,19E-05	-8,01E-05	0,00013635	
log determinant = -26,424				
Breusch-Pagan test for diagonal covariance matrix:				
Chi-square(3) = 13,465 [0,003]				
Hansen-Sargan over-identification test:				
Chi-square(1) = 1,790 [0,181]				

Source: own study on the basis of Eurostat https ://ec.europ a.eu/Eurostat, access: 11.02.2025.The findings suggest that financial standing plays a key role in shaping sustainable entrepreneurship in Poland; however, its impact on various economic, social, and environmental areas is varied.

V. DISCUSSION

The findings of our research confirm that financial standing plays a pivotal role in shaping sustainable entrepreneurship in Poland. However, its impact is not uniform across economic, social, and environmental dimensions, highlighting the complexity of financial determinants in fostering sustainable business practices. A nuanced understanding of these interconnections is essential for policymakers and business leaders aiming to balance economic stability with broader sustainability objectives.

The results of the OLS model indicate a statistically significant positive relationship between financial standing and overall sustainable entrepreneurship, aligning with the conclusions of Matera et al. (2023) and Kowalska and Misztal (2024), who underscore the importance of financial stability for long-term business development. This suggests that firms with more substantial financial health are more likely to engage in sustainable practices, leveraging their financial resources to invest in innovation, employee welfare, and environmentally

friendly technologies. These findings reinforce existing theoretical perspectives on the role of financial standing in enabling companies to adopt responsible business strategies that contribute to economic resilience.

Nevertheless, the SUR models reveal a more intricate dynamic, suggesting that improved financial standing fosters economic entrepreneurship while potentially undermining social and environmental initiatives. This outcome implies that businesses when experiencing financial growth, may prioritize profit-maximization strategies that primarily benefit their economic performance while overlooking social and environmental considerations. This finding contrasts the conclusions drawn by Gu et al. (2021) and Hägg and Kurczewska (2021), who contend that strong financial standing facilitates the implementation of sustainable development strategies across all three dimensions. Instead, our findings suggest a potential trade-off between economic growth and corporate social responsibility, with firms allocating financial resources predominantly to areas that yield immediate monetary returns.

This divergence in empirical results underscores the need for precise and targeted policy interventions. Policymakers should design financial incentives that encourage businesses to strengthen their economic foundations and integrate sustainability-driven initiatives within their corporate strategies. Additionally, further research should explore sector-specific variations to determine whether specific industries exhibit a more substantial alignment between financial standing and sustainability efforts than others. Addressing these gaps can contribute to a more comprehensive understanding of how financial stability interacts with sustainable entrepreneurship in diverse economic contexts..

The primary research hypothesis, which posits that financial standing is a key determinant of sustainable entrepreneurship in Poland, has been partially validated. The findings indicate that the influence of financial standing on sustainable entrepreneurship is heterogeneous and contingent upon the specific dimension under analysis. The study demonstrates that financial standing significantly affects sustainable entrepreneurship, though its nature has evolved. The most pronounced fluctuations were observed during economic crises, highlighting the crucial role of macroeconomic stability in ensuring long-term sustainable entrepreneurship. While financial standing positively affects economic entrepreneurship, it has a detrimental impact on social and environmental aspects. This phenomenon may stem from businesses prioritizing economic expansion over social and ecological initiatives when financial conditions improve.

This study contributes to the existing literature on sustainable entrepreneurship by providing empirical evidence of the asymmetric impact of financial standing on its various dimensions. The findings challenge the conventional notion of a uniform relationship between financial stability and sustainable entrepreneurship, emphasizing the necessity for a differentiated approach based on economic, social, and environmental considerations. The empirical results offer valuable insights for policymakers, serving as a foundation for

developing targeted policy strategies that support sustainable entrepreneurship, mainly through financial instruments tailored to sector-specific needs.

Despite its contributions, this study has several limitations. The geographical scope is confined to Poland, limiting the generalizability of the findings to other EU countries. Furthermore, the reliance on synthetic indicators entails a trade-off in capturing sector-specific factors. Although the analysis spans multiple years, it does not fully account for long-term effects, such as the enduring impact of the COVID-19 pandemic on sustainable entrepreneurship.

VI. CONCLUSIONS

This paper comprehensively analyses the relationship between financial standing and sustainable entrepreneurship in Poland, revealing its multifaceted nature. The findings confirm that financial stability is crucial in fostering entrepreneurship and highlight its uneven economic, social, and environmental effects. While improved financial standing strengthens economic performance, it may simultaneously weaken social and ecological initiatives, suggesting a trade-off that policymakers and business leaders must address.

The results emphasize the necessity of well-designed financial and regulatory frameworks holistically supporting sustainable entrepreneurship. Monetary policies should be tailored to ensure that economic growth does not come at the expense of social responsibility and environmental sustainability. Firms must integrate sustainability strategies that balance profitability with long-term sustainable objectives, fostering innovation, responsible governance, and resilience to economic shocks.

Future research should explore the implications of financial standing in a broader international context, examining cross-country differences in economic structures, institutional settings, and regulatory approaches. A sector-specific analysis furthers our understanding of how financial stability influences various industries. Investigating the long-term impact of financial crises, external shocks, and policy interventions on sustainable entrepreneurship would provide valuable insights into the evolving dynamics of economic sustainability and business resilience.

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