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ASSESSING THE IMPACT OF THE FINANCIAL CONDITION ON THE COMPONENTS OF SUSTAINABLE DEVELOPMENT OF TRANSPORT ENTERPRISES IN POLAND IN 2008-2019

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Abstract: The sustainable development of an enterprise includes the implementation of the economic, social, and environmental goals. In business practice, this means taking actions to maximize profits while implementing social and ecological tasks. The article's primary goal is to assess the impact of the financial condition on the components of sustainable development of transport companies in Poland in 2008-2019. A company's sustainable development is understood here as achieving the intended economic, social, and environmental results. The primary method used in the study is the Ordinary Least Squares (OLS) method, which allowed for the estimation of three equations in which the endogenous variables are economic (E_D), social (S_D) and environmental development (Env_D). According to the estimation results, the individual components are interdependent. The financial condition (F_C) for the current period and the previous one impact on economic and social development, while environmental development depends on its financial situation.

Keywords: financial condition, sustainable development, transport enterprises, the OLS model.

1. Introduction

Progressive economic development and globalization have contributed to an increase in the scale of environmental pollution. Thus it became necessary to create rules and standards for nature protection and to take decisive measures to counteract climate

change. The increase in public awareness and the development of technologies and ecological innovations have contributed to creating sustainable growth.

Sustainable development is a socio-economic development based on environmental protection. The goal is to preserve nature's resources for future generations. Implementing the concept requires involving all sides of social and economic life, including countries, international institutions, and enterprises. An enterprise's sustainable development means achieving a specific balance in the economic, social, and environmental dimensions. In business practice, this requires foregoing part of the profits to benefit investments in human capital, employee health protection, and the natural environment.

This paper aims to assess the impact of the financial condition (Fc) on the components of sustainable development of transport enterprises in Poland in 2008-2019. The central research hypothesis is as follows: "The financial condition has a statistically significant impact on the economic, social and environmental development of transport enterprises in Poland in 2008-2019". To verify the hypothesis, the author used the Ordinary Least Squares (OLS) method. The research covered the transport enterprises sector due to their high emission of harmful substances and its vital role in developing other economic sectors. The data used in the research come from the GUS.

2. Sustainable development of enterprises – selected theoretical problems

An enterprise's sustainable development means implementing economic, social, and environmental goals (Ikram, Zhou, Shah, & Liu, 2019, pp. 628-641; Mao, Li, Pei, & Xu, 2018; Misztal & Kowalska, 2020, pp. 160-173; Witek-Crabb, 2005). Sustainable development is a holistic concept that applies to the functioning of all economic entities (Kapecki, 2020; Karagülle, 2012, pp. 456-460; Piontek, 2002; Schroeder & Robinson, 2010; Trojanowski, 2015; Yemelyanov et al., 2020). Achieving sustainability goals requires commitment from owners and employees alike.

In business practice, this is the sum of choices and the partial shift from current economic profits, in favour of activities supporting social and ecological development (Adamkiewicz-Drwiłło & Kruk, 2010, pp. 16-24; Czyż, 2000; Leśniewski, 2017, pp. 17-34; Ożelienė, 2017). Maintaining appropriate relations between strictly economic categories such as economic value, added value or net profit, and social and ecological investments, is crucial in building a competitive advantage (Kang & Na, 2020; Koszel & Weinert, 2013, p. 155; Ricart, Rodríguez, & Sánchez, 2002; Srivastava, Franklin, & Martinette, 2013, pp. 47-60).

The theory of sustainable development is related to the view of corporate social responsibility (CSR), in fact they are similar and complementary. Some researchers

emphasize that CSR is a form of the corporate concept of sustainable development (Behringer & Szegedi, 2016, pp. 10-25; Bembenek, 2015; Carroll, 2015, pp. 87-96).

Sustainable development requires applying principles and rules aimed at the practical and rational use of natural resources and reducing harmful substance emissions (McIntyre, Ivanaj, & Ivanaj, 2009). Limiting the natural environment's negative impact requires undertaking ecological investments, implementing eco-innovations and environmentally friendly technologies (Drljača, 2012; Sarkar, 2013, pp. 171-224; Yurdakul & Kazan, 2020). In addition to ecological initiatives, it is also necessary to improve and protect employees' health and support for local communities (Kokić, Mišić, Radojković, & Prlinčević, 2016).

An essential element of sustainable development is making decisions considering their shared value (Porter & Kramer, 2007). This means the capability of an enterprise to last over time, which requires achieving a satisfactory level of productivity and financial performance, and also beneficial social and environmental effects (Giovannoni & Fabietti, 2013). The sustainable development of an enterprise consists of three components (pillars) (Miształ, 2019):

- economic development, which can be equated with an increase in assets, an increase in the company's value or net profit,
- social development, which is manifested in the improvement of working conditions, taking actions for the development of human capital, safety and health protection of employees, support for the development of local communities,
- ecological development, the effect of activities should be to reduce the emission of harmful substances.

Sustainable development is the sum of the economic, social, and environmental effects. The components of sustainable development are very often not correlated with each other. Moreover, very often, economic growth occurs at the expense of social and environmental action (Pieloch, Miształ, & Kowalska, 2020).

Sustainable development requires a change in the approach to management, introducing environmental management and focusing on providing value-added to customers (Adamczyk, 2001; Firlej, 2005, pp. 263-269).

Sustainable development determinants can be divided into two groups (Moya-Clemente, 2020; Yeasmin, 2016, pp. 129-159):

- exogenous, related to the environment, including the macroeconomic situation, economic situation, social awareness, legal regulations,
- endogenous, corresponding to the company's financial condition, sector of activity, management approach, and owners and employees' ecological attitude.

The financial condition influences sustainable development, although the analysis in this area is insufficient and requires further research. The financial condition (financial and property situation) is the basis for assessing an enterprise's competitive position in the market (Janas, 2019, pp. 176-194). An excellent financial condition is

achieved when the company has financial liquidity, high profitability, low level of indebtedness, and operational efficiency, which is of crucial importance in terms of its investment ability (Masztalerz, 2019, pp. 99-118; Skoczylas & Waśniewski, 2014, pp. 243-252). The relationship between financial liquidity and sustainability is the subject of research, which emphasizes the fact that financial liquidity is essential for creditworthiness (Gorczyńska, 2013, pp. 99-110; Lagoarde-Segot, 2020); on the other hand, sustainable development can increase profitability in the long run (Seelos & Mair, 2005; Osmanagić Bedenik, 2018).

The selection of transport enterprises for the research sample is related to their significant negative impact on the natural environment. Moreover, transport enterprises play a vital role in the development of other economic sectors, currently producing 5.8% of Poland's GDP (the share of the transport sector in generating GDP in Poland is much higher than in most European countries), being the third most crucial branch of the economy after industry and trade (Comporek, Misztal, & Kowalska, 2021).

3. Methodology of the research

The research aims to assess the impact of the financial condition (F_c) on the components of sustainable development of transport enterprises in Poland in 2008-2019. The study covers the period of economic slowdown and the slow recovery from it. This research focuses on transport enterprises due to their crucial role in developing other sectors of the economy. It is also not without significance that these companies contribute to the natural environment's degradation due to harmful substances. The central research hypothesis (H) is as follows: "The financial condition has a statistically significant impact on the economic (E_p), social (S_p) and environmental development (Env_p) of transport enterprises in Poland in 2008-2019". The justification for such a research hypothesis is that the property condition (the enterprise's financial and property situation) significantly influences enterprises' investment decisions.

The sub-hypotheses are as follows:

- H_1 : "In the period 2008-2019, there was a growing trend of economic, social and environmental development indicators".

Justification: slow recovery from the economic crisis, economic recovery, development of transport services, improvement of consumer mood,

- H_2 : "In 2008-2019, the financial condition of transport enterprises in Poland improved".

Justification: good economic situation, investments, credit availability,

- H_3 : "Economic development was statistically important for the social and environmental development of transport enterprises in Poland in 2008-2019"

Justification: enterprises are primarily interested in economic issues (profit maximization, enterprise value) and only then, having stable economic foundations, implement social and environmental investments,

- H_4 : “The components of the sustainable development of transport enterprises depend on each other and the financial condition”.

Justification: Economic development as the foundation of social and environmental development.

The Pearson Correlation Coefficient and the Ordinary Least Squares (OLS) method are one of the most common methods of estimating linear models to verify the research hypothesis. This research consists of three stages.

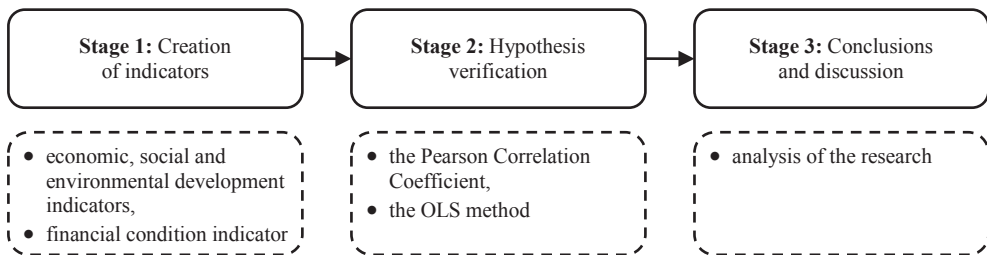


Fig. 1. Stages of the research

Source: own study.

In the first step the author calculated the sustainable development indicator (SI), which consists of three components: economic (E_D), social (S_D) and environmental (Env_D), and the financial condition indicator (F_C) using the following formulas (Szandula, 2014):

- for the stimulants:

$$z_{ij} = \frac{x_{ij} - \min_i \{x_{ij}\}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}}, z_{ij} \in [0; 1];$$

- for the destimulants:

$$z_{ij} = \frac{\max_i \{x_{ij}\} - x_{ij}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}}, z_{ij} \in [0; 1].$$

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

To calculate the indicator of sustainable development of transport enterprises (SI), the following formula was used:

$$SI_i = \frac{1}{n} \sum_{z=1}^n z_{ij}, \quad (i = 1, 2, \dots, n)$$

where: SI_i stands for the indicator in the i -year; n is the number of metrics; others as above.

The diagnostic variables used in the model are presented in Table 1.

Table 1. Diagnostic variables used in the creation of economic (E_D), social (S_D) and environmental (Env_D), and the financial condition indicator (F_C)

Indicator	Diagnostic variable	Description of the variable	Stimulant	Destimulant
E_D	x_1	Transport enterprises – number	x	
	x_2	Turnover or gross premiums [million euro]	x	
	x_3	Production value [million euro]	x	
	x_4	Value added at factor cost [million euro]	x	
	x_5	Gross operating surplus [million euro]	x	
	x_6	Total purchases of goods and services [million euro]	x	
	x_7	Gross investment in tangible goods [million euro]	x	
	x_8	Investment rate (investment/value added at factors cost) [percentage]	x	
S_D	x_9	Personnel costs [million euro]		x
	x_{10}	Wages and Salaries [million euro]	x	
	x_{11}	Social security costs [million euro]	x	
	x_{12}	Employee – number	x	
	x_{13}	Turnover per person employed [thousand euro]	x	
	x_{14}	Apparent labour productivity [thousand euro]	x	
	x_{15}	Gross value added per employee [thousand euro]	x	
	x_{16}	Share of personnel costs in production – percentage		x
	x_{17}	Growth rate of employment [%]	x	
	x_{18}	Investment per person employed [thousands euro]	x	
Env_D	x_{19}	Carbon dioxide emission [tons]		x
	x_{20}	Methane emission [tons]		x
	x_{21}	Nitrous oxide emission [tons]		x
	x_{22}	Sulphur oxides emission [tons]		x
	x_{23}	Carbon monoxide emission [tons]		x
	x_{24}	Nitrogen oxides emission [tons]		x
	x_{25}	Amonia emissions [tons]		x
F_C	x_{26}	Financial liquidity ratio	x	
	x_{27}	Return on sales (ROS)	x	
	x_{28}	Return on assets (ROA)	x	
	x_{29}	Return on equity (ROE)	x	
	x_{30}	Equity ratio in financing assets	x	
	x_{31}	Assets structure ratio	x	
	x_{32}	Inventory/stock turnover ratio (in days)		x
	x_{33}	Receivables turnover ratio (in days)		x
	x_{34}	Debt ratio		x

Source: own study based on (GUS, n.d.).

In the next step the author measured the strength of a linear relationship between the indicators with the Pearson's Correlation Coefficient given by the formulas (Ahlgren, Jarneving, & Rousseau, 2003)

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}, \quad r_{xy} \in [-1; 1]$$

where: r_{xy} stands for the Pearson's correlation coefficient; n is the sample size; x_i, y_i are the individual sample points indexed with i ; \bar{x}, \bar{y} are the sample means.

Then, the structural equation model was used to assess the impact of financial condition (F_C) on the economic (E_D), social (S_D) and environmental (Env_D) development. The model is based on the formula:

$$\begin{cases} E_D = const + S_D + S_{D(t-1)} + Env_{Dt} + Env_{D(t-1)} + F_{Ct} + F_{C(t-1)} + E_{D(t-1)} \\ S_D = const + E_D + E_{D(t-1)} + Env_{Dt} + Env_{D(t-1)} + F_{Ct} + F_{C(t-1)} + S_{D(t-1)} \\ Env_D = const + E_D + E_{D(t-1)} + S_D + S_{D(t-1)} + F_{Ct} + F_{C(t-1)} + Env_{D(t-1)} \end{cases}$$

The exogenous variables include: $F_C, F_{C(t-1)}$. The analytical record presented, after conversion to the matrix record, gives a model in the form of:

$$\begin{bmatrix} E_{Dt} \\ S_{Dt} \\ Env_{Dt} \end{bmatrix} = \begin{bmatrix} \beta_{10} & \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} & \beta_{16} & \beta_{17} & 0 \\ \beta_{20} & 0 & \beta_{22} & \beta_{23} & \beta_{24} & \beta_{25} & \beta_{26} & \beta_{27} & \beta_{28} \\ \beta_{30} & \beta_{31} & \beta_{32} & 0 & \beta_{34} & \beta_{35} & \beta_{36} & \beta_{37} & \beta_{38} \end{bmatrix} \begin{bmatrix} 1 \\ S_{Dt} \\ S_{D(t-1)} \\ Env_{Dt} \\ Env_{D(t-1)} \\ F_{Ct} \\ F_{C(t-1)} \\ E_{D(t-1)} \\ E_D \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \end{bmatrix}$$

To assess the links between the components of sustainable development of enterprises and financial condition indicator, the OLS method is used, based on the formulas:

$$\begin{aligned} E_{Di} &= \hat{\beta}_0 + \hat{\beta}_1 S_{Di} + \hat{\beta}_2 S_{D(t-1)i} + \hat{\beta}_3 Env_{Dti} + \hat{\beta}_4 Env_{D(t-1)i} + \hat{\beta}_5 F_{Ci} + \hat{\beta}_6 F_{C(t-1)i} + \hat{\beta}_7 E_{D(t-1)i} \\ &\quad + e_i = \hat{E}D_i + e_{Di} \\ S_{Di} &= \hat{\beta}_0 + \hat{\beta}_1 E_{Di} + \hat{\beta}_2 E_{D(t-1)i} + \hat{\beta}_3 Env_{Dti} + \hat{\beta}_4 Env_{D(t-1)i} + \hat{\beta}_5 F_{Ci} + \hat{\beta}_6 F_{C(t-1)i} + \hat{\beta}_7 S_{D(t-1)i} \\ &\quad + e_i = \hat{S}D_i + e_{Si} \\ Env_{Di} &= \hat{\beta}_0 + \hat{\beta}_1 E_{Di} + \hat{\beta}_2 E_{D(t-1)i} + \hat{\beta}_3 S_{Di} + \hat{\beta}_4 S_{D(t-1)i} + \hat{\beta}_5 F_{Ci} + \hat{\beta}_6 F_{C(t-1)i} + \hat{\beta}_7 Env_{D(t-1)i} \\ &\quad + e_i = \hat{E}nvD_i + e_{Envi} \end{aligned}$$

The OLS procedure minimizes the sum of squared residuals (Raykov & Marcoulides, 2013):

$$s(\hat{\beta}_0, \dots, \hat{\beta}_7) = \sum_{i=1}^n e_i^2 = \sum_{i=1}^n (E_{Di} - \hat{E}D_i)^2$$

$$= \sum_{i=1}^n (y_i - \hat{\beta}_0 - \hat{\beta}_1 S_{Di} - \hat{\beta}_2 S_{D(t-1)i} - \hat{\beta}_3 Env_{Dti} - \hat{\beta}_4 Env_{D(t-1)i} - \hat{\beta}_5 F_{Ci} - \hat{\beta}_6 F_{C(t-1)i} - \hat{\beta}_7 E_{D(t-1)i})^2 \rightarrow \min$$

$$s(\hat{\beta}_0, \dots, \hat{\beta}_7) = \sum_{i=1}^n e_i^2 = \sum_{i=1}^n (S_{Di} - \hat{S}D_i)^2$$

$$= \sum_{i=1}^n (y_i - \hat{\beta}_0 - \hat{\beta}_1 E_{Di} - \hat{\beta}_2 E_{D(t-1)i} - \hat{\beta}_3 Env_{Dti} - \hat{\beta}_4 Env_{D(t-1)i} - \hat{\beta}_5 F_{Ci} - \hat{\beta}_6 F_{C(t-1)i} - \hat{\beta}_7 S_{D(t-1)i})^2 \rightarrow \min$$

$$s(\hat{\beta}_0, \dots, \hat{\beta}_7) = \sum_{i=1}^n e_i^2 = \sum_{i=1}^n (Env_{Di} - \hat{E}nv_{Di})^2$$

$$= \sum_{i=1}^n (y_i - \hat{\beta}_0 - \hat{\beta}_1 E_{Di} - \hat{\beta}_2 E_{D(t-1)i} - \hat{\beta}_3 S_{Dti} - \hat{\beta}_4 S_{D(t-1)i} - \hat{\beta}_5 F_{Ci} - \hat{\beta}_6 F_{C(t-1)i} - \hat{\beta}_7 Env_{D(t-1)i})^2 \rightarrow \min$$

In the last stage of the study, the results are presented, together with a discussion and final conclusions.

4. Results of the research

The indicators of economic (E_D), social (S_D), environmental (Env_D), sustainable (SI) development and the indicator of the financial condition (F_C) of transport enterprises in 2008-2019 are presented in Table 2. The economic development indicator (E_D)

Table 2. Indicators of economic (E_D), social (S_D) and environmental (Env_D), sustainable development (Si) and the financial condition indicator (F_C)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
E _D	0.43	0.01	0.21	0.44	0.41	0.44	0.63	0.75	0.66	0.86	0.87	0.88
S _D	0.43	0.11	0.38	0.49	0.49	0.46	0.62	0.7	0.67	0.83	0.84	0.89
Env _D	0.51	0.68	0.44	0.61	0.74	0.87	0.95	0.86	0.61	0.23	0.25	0.24
SI _D	0.46	0.27	0.34	0.51	0.55	0.59	0.73	0.77	0.65	0.64	0.65	0.67
F _C	0.35	0.41	0.63	0.60	0.61	0.60	0.58	0.65	0.52	0.47	0.45	0.56

Source: own calculation based on (GUS, n.d.).

increased from 0.43 in 2008 to 0.88 in 2019. The social indicator (S_D) increased from 0.43 in 2018 to 0.89. On the other hand, the environmental development indicator (Env_D) decreased from 0.51 to 0.24, while the financial condition of enterprises improved. The indicator increased from 0.35 in 2008 to 0.56 in 2019.

Table 3 presents selected descriptive statistics for the designated indicators. The highest average value (0.58) is for social and environmental development indicators and the lowest for the financial condition (0.54). The highest level of the median occurred in the case of the sustainable development index (0.62). The highest maximum value was achieved by the ecological development index (0.95), the lowest by economic development (0.01).

Table 3. Descriptive statistics of economic (E_D), social (S_D) and environmental (Env_D), sustainable development (SI) and the financial condition indicator (F_C)

Indicator	Mean	Mediana	SD	Max	Min	Trend line	R ²
E_D	0.55	0.54	0.26	0.88	0.01	$E_D = 0.0684x + 0.1048$	0.80
S_D	0.58	0.56	0.22	0.89	0.11	$S_D = 0.0576x + 0.2015$	0.84
Env_D	0.58	0.61	0.24	0.95	0.23	$Env_D = -0.0275x + 0.7614$	0.15
SI	0.57	0.62	0.15	0.77	0.27	$SI_D = 0.0326x + 0.3571$	0.60
F_C	0.54	0.57	0.09	0.65	0.35	$F_C = 0.0044x + 0.5074$	0.03

Source: own calculation based on (GUS, n.d.).

The economic, social, sustainable development and financial condition of transport enterprises increased in the analysed period. The highest upward trend is in the economic development indicator (0.0684). The environmental development indicator has a negative slope (-0.0275).

The Pearson correlation coefficients are shown in Table 4. The highest level of statistically significant dependence is between economic (E_D) and social development (S_D) (0.9865). There is a negative correlation between environmental development and economic (-0.3818) and social development (-0.4555). The highest level of dependence in the case of financial condition occurs in regard of environmental development (0.4254).

Table 4. The Pearson Correlation Coefficients, critical value (with two-sided 5% critical area) = 0.5760 for $n = 12$

E_D	S_D	Env_D	F_C	
1.0000	0.9865	-0.3818	0.0542	E_D
	1.0000	-0.4555	0.1193	S_D
		1.0000	0.4254	Env_D
			1.0000	F_C

Source: own calculation based on (GUS, n.d.).

Table 5 presents the results of the SUR estimation. The multi-equation model consists of three equations, where the dependent variables are the indicators of economic (E_D), social (S_D) and environmental development (Env_D). The explanatory variables include the relationships between the dependent variables from period t and period $(t-1)$ and the impact of the exogenous variable financial condition (F_C).

Table 5. The OLS estimation, explained variables: indicators of economic (E_D), social (S_D) and environmental (Env_D) development

Dependent variable	Explanatory variable	Coefficient	SD	t -Student	p -value	R^2
E_D	const	-0.181995	0.0518735	-3.508	0.0392	0.999
	S_D	1.27991	0.0551674	23.20	0.0002	
	$S_{D(t-1)}$	1.28855	0.280905	4.587	0.0195	
	Env_D	0.186841	0.0404203	4.622	0.0191	
	$Env_{D(t-1)}$	0.168587	0.0488185	3.453	0.0408	
	F_C	-0.433680	0.100395	-4.320	0.0229	
	$F_{C(t-1)}$	-0.366812	0.106063	-3.458	0.0407	
	$E_{D(t-1)}$	-0.954476	0.209343	-4.559	0.0198	
S_D	const	0.138285	0.0442890	3.122	0.0524	0.999
	E_D	0.776974	0.0334896	23.20	0.0002	
	$E_{D(t-1)}$	0.740639	0.167636	4.418	0.0215	
	Env_D	-0.148353	0.0268252	-5.530	0.0116	
	$Env_{D(t-1)}$	-0.129444	0.0401579	-3.223	0.0485	
	F_C	0.343443	0.0697045	4.927	0.0160	
	$F_{C(t-1)}$	0.287041	0.0811880	3.536	0.0385	
	$S_{D(t-1)}$	-0.995431	0.231484	-4.300	0.0231	
Env_D	const	0.399759	0.289620	1.380	0.2100	0.867
	E_D	3.99902	0.861706	4.641	0.0024	
	S_D	-5.40087	1.05745	-5.107	0.0014	
	F_C	2.04740	0.478631	4.278	0.0037	

Source: own calculation based on (GUS, n.d.).

The results of the OLS method indicate the diversification of the influence of the dependent variables on the dependent variable. The economic development (E_D) depends on social development (S_D), social development from the period $(t-1)$ ($S_{D(t-1)}$), environmental development (Env_D), environmental development from the

period $(t-1)$ ($Env_{D(t-1)}$), financial condition from the period t (F_C) and period $(t-1)$ ($F_{C(t-1)}$) and the economic development indicator from the period $(t-1)$ ($E_{D(t-1)}$). It is worth noting the negative sign with the variable financial condition, as this means that the financial condition (F_C) improvement causes a decrease in the economic development indicator (E_D).

The social indicator depends (S_D) on the economic development indicator from period t (E_D) and period $(t-1)$ ($E_{D(t-1)}$), environmental development indicator from period t (Env_D) and period $(t-1)$ ($Env_{D(t-1)}$), financial condition from period t (F_C) and period $(t-1)$ ($F_{C(t-1)}$) and social development from the period $(t-1)$ ($S_{D(t-1)}$). The signs of the coefficients indicate that economic development (E_D) and financial condition (F_C) have a positive effect on social development (S_D). The negative sign is in the case of environmental development (Env_D) (an increase in the environmental development indicator causes a decrease in the social indicator) and social development from the period $(t-1)$ ($S_{D(t-1)}$). The justification here may be the fact that the financial resources concentrate on environmental, and not on social investments. Moreover, the implementation of social investments in the previous period may limit the development of current social development investments (lack of financial resources).

The environmental indicator (Env_D), in turn, depends on economic development (E_D) (economic growth causes an increase in the environmental development indicator), social development (S_D) (negative correlation) and financial condition (F_C) (a good financial condition enables investment in environmental protection).

5. Conclusion

Sustainable development is a response to climate change and the depletion of natural resources. Its primary goal is to preserve the present state of nature for future generations. Sustainable development includes three pillars: economic, social, and environmental, and requires action at the macroeconomic (requires international institutions and states) and microeconomic (enterprises, households) levels.

The sustainable development of an enterprise means taking actions to maximize profit while carrying out social tasks and protecting the natural environment. In business practice, this means implementing ecological investments and developing employees, knowledge, and skills. Economic, social, and environmental development are closely related, however it should be emphasized that some researchers indicate that economic development is the basis for sustainable development. Economic development enables further actions to be taken for the benefit of society and the environment, and is a derivative of the company's financial and property situation.

The research results indicate that the pillars of the sustainable development of transport enterprises are closely interrelated and depend on the financial condition of enterprises. The central research hypothesis (H) is correct because "the financial

condition had a statistically significant impact on the economic (E_D), social (S_D) and environmental development (Env_D) of transport enterprises in Poland in 2008-2019”.

The first sub-hypothesis is not correct as the positive trend is for the economic (0.0684) and social indicator (0.0576), and the negative trend is for the ecological indicator (-0.0275). The second sub-hypothesis is correct because from 2008 to 2019, the financial condition of transport enterprises in Poland improved (0.0044). The third sub-hypothesis is also correct because economic development was statistically essential for the social and environmental development of transport enterprises in Poland in 2008-2019.

The OLS estimation results show strong dependencies between sustainable development pillars and indicate a statistically significant sign of the financial condition for economic, social, and environmental development.

Therefore, enterprises implementing sustainable development strategies should secure their financial and property standing, which is the starting point for ecological and social investments. Undoubtedly, their favourable financial situation makes it possible to obtain preferential loans for financing sustainable development goals.

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OCENA WPLYWU KONDYCJI FINANSOWEJ NA KOMPONENTY ZRÓWNOWAŻONEGO ROZWOJU PRZEDSIĘBIORSTW TRANSPORTOWYCH W POLSCE W LATACH 2008-2019

Streszczenie: Zrównoważony rozwój przedsiębiorstwa obejmuje osiągnięcie celów ekonomicznych, społecznych i środowiskowych. W praktyce biznesowej oznacza on podejmowanie działań na rzecz maksymalizacji zysków przy jednoczesnej realizacji zadań społecznych i ekologicznych. Podstawowym celem artykułu jest ocena wpływu kondycji finansowej na komponenty zrównoważonego rozwoju przedsiębiorstw transportowych w Polsce w latach 2008-2019. Podstawową metodą wykorzystaną w opracowaniu jest podwójna metoda najmniejszych kwadratów, umożliwiająca oszacowanie trzech równań, w których zmiennymi endogenicznymi są rozwój ekonomiczny (E_D), społeczny (S_D) i środowiskowy (Env_D). Zgodnie z wynikami estymacji poszczególne komponenty są od siebie uzależnione. Kondycja finansowa (F_C) z okresu bieżącego i poprzedniego ma wpływ na rozwój ekonomiczny i społeczny, rozwój środowiskowy zaś jest uzależniony od kondycji finansowej w bieżącym okresie.

Słowa kluczowe: kondycja finansowa, zrównoważony rozwój, przedsiębiorstwa transportowe, klasyczna metoda najmniejszych kwadratów.