Sustainable Corporate Performance: Interaction between Environmental, Social, Corporate Governance and Economic Indicators

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Abstract—This paper looks at the interaction between environmental, social and governance (ESG) indicators and economic performance in relation to sustainable corporate performance (SCP) in companies from the Czech manufacturing industry. The aim of the empirical study and analysis is to test whether ESG performance indicators increase the economic performance of a company and thus lead to SCP. The interaction between ESG and economic performance indicators was tested in 79 Czech manufacturing companies with an established ISO 14 001 system. Data was acquired through empirical research in the Czech Republic, which was completed in 2011-2012. The analysis was performed using multiple linear regressions. The results show that the Czech companies in manufacturing industries do not exhibit a significant correlation between ESG performance, and economic performance.

Keywords—environmental, social, corporate governance, economic indicators; model; multiple linear regressions

I. Introduction

Sustainability is a multidimensional concept with three important dimensions: economic growth, social responsibility and environmental protection. In reality, sustainability is at the forefront for many international organisations and it is undergoing study from various aspects, including the establishment of an appropriate set of indicators. Unfortunately, a company's contribution to sustainability is still hard to measure. It can be argued that empirical research into corporate sustainability based on ESG and performance indicators is non-existent in Czech companies. Thus sustainability cannot be separated from environmental, social and economic development, and demonstrably it cannot be separated from corporate governance either, as we saw recently.

Assessment by means of financial indicators has basically zero relevance for stakeholders and therefore there arises the need to evaluate and compare companies on the basis of performance integration by creating such indicators that would inform about ESG as well as the economic performance of the company with sufficient informative value. The inclusion of ESG indicators in the integrating performance is based on further research; some of the authors [1-4] note that it is important to include ESG indicators in the strategy of the company because financial indicators do not provide accurate information on the overall performance. Therefore, we can say that the integration of ESG has currently become an investment strategy as well as a tool for future cash flow [5-8].

II. Conceptual and Theoretical Approach

Many scholarly books and studies have been written about business performance, but in measuring sustainable performance through financial and non-financial indicators it is necessary to focus on and define Key Performance Indicators (KPIs). In terms of the specialist literature, authors [9] see the measuring of performance as the acquisition and analysis of information about the actual achievement of corporate goals and plans, and about factors that can influence the achievement of these goals. As noted by [10], performance management includes the methodology, system framework and indicators designed to assist organisations in formulating and assessing strategies to motivate staff and communicate business performance to external entities.

A. Interaction between ESG and economic performance

The interaction between corporate environmental and economic performance has been researched by many authors. A study confirming the link between carbon performance and financial performance in Australian NGER reporting companies discovered that carbon performance and financial performance are significantly negatively related in public listed companies, suggesting worse carbon performers tend to enjoy higher financial returns while stronger financial performers are more likely to pollute more and consume more energy. In private companies, no significant link between the two performances has been confirmed, which means that enhancing carbon performance does not create significant financial value [11]. He stated that even in previous studies concentrating on heavy polluting industries [12] environmental performance had a negative impact on financial performance. Other authors, [13], focused on the food industry and found a negative relationship too. A positive link between environmental and economic performance in manufacturing companies was confirmed by [14-15]. In his study he illustrated the relationship between environmental and economic performance on a curve of environmental gain. He

sees environmental gain as the isolated net economic impact of the environment on business performance [16].

Corporate environmental and social performance is associated mainly with CSR. The relationship between the environmental and social performance leading to economic benefits was studied by the authors [17]. Their study suggests that voluntary environmental and social activities, which are being introduced to improve the environmental and social performance of companies, produce CSR performance.

The relationship between the social and economic performance was also proven to be positive, which means that social involvement had a positive impact on the economic performance of the company. Most studies use short-term economic metrics, such as profit, return on equity or market price of shares, but the economic impact of social involvement could span a period that is longer than the period of these indicators [18]. The authors demonstrated that (1) across studies, corporate social performance is positively correlated with corporate financial performance, (2) the relationship tends to be bidirectional and simultaneous, (3) reputation appears to be an important mediator of the relationship, and (4) stakeholder mismatching, sampling error, and measurement error can explain between 15 % and 100 % of the cross-study variation in various subsets of CSP–CFP correlations. Corporate virtue in the form of social and, to a lesser extent, environmental responsibility is rewarding in more ways than one [19].

The authors [20] tried to establish whether there is a positive or negative relationship between corporate governance mechanisms and corporate social responsibility (CSR) contingent on satisfaction with business performance. As a point of departure they used previous research which has come under increasing criticism for combining the positive and negative dimensions of CSR [21-22]. The results indicate that effective governance has a symmetric effect on CSR and that it reduces both positive and negative CSR.

III. METHODOLOGY

The basis of the empirical research was a questionnaire prepared with the use of international sources (GRI 2006, 2011, EMAS III, IFAC, 2012, ASSET 2010, EFFAS-DVFA 2008, ISO 26000, CSR, OECD, Green Paper 2011, Czech Statistical Office 2012, and companies' financial statements). The research ran in the period 2011 and 2012 with personal visits to companies from the manufacturing industry. Companies were chosen from the database of CENIA, with introduced ISO 14001 standard and with more than 250 employees. The CENIA database accommodates in total 96 companies from the manufacturing industry with the introduced ISO 14001 standards. We gathered data from 79 companies. The determination of ESG and the economic performance indicators of these manufacturing companies were based on a questionnaire-type survey per Tab. 1.

The ESG and economic indicators were identified by a factor analysis. Partial results of research into ESG performance indicators have been published in a series of articles [23-28]. The proposed conceptual framework of ESG and the economic performance indicators correspond to

international sources such as GRI, IFAC, EFFAS-DVFA, and ASSET4. The interaction between the ESG indicators and economic performance in Czech companies from the manufacturing sector was studied by multiple regression analysis. This empirical study will examine regression coefficients that show how a dependent variable changes in response to a change in the independent variable. All calculations were analysed by the SPSS program for Windows, version 21, using a combination of different statistical methods, and regresses analyses.

TABLE I.   FACTORS ESG AND ECONOMIC INDICATORS

Measurement Area	Factor Loadings for Components	Cronbach's alpha
Environmental	*Investments and non-investment expenditures for environmental protection*	0.959
	Emissions	0.777
	Source consumption	0.749
	Waste	0.678
Social	*Society*	0.800
	Human rights	0.810
	Labour Practices and Decent Work	0.690
	Product Responsibility	0.590
Corporate Governance	*Monitoring and Reporting*	0.959
	Corporate Governance Effectiveness	0.777
	Corporate Governance Structure	0.749
	Compliance	0.678
Economic	*Return on*	0,980
	Economic results	0,922
	Financial indicators	0,790
	Cash Flow	0,650

Source: own processing of research

The objective is to construct a descriptive regression model, determine the predictive ability of the established ESG performance indicators, and ascertain if the impact of these indicators on the economic performance of a company is positive or negative.

IV. RESULTS AND DISCUSSION

In our empirical study, we used the T-test to test the statistical significance of economic performance factors in relation to environmental, social and corporate governance performance factors. The T-test showed practically no statistically significant relationship between the indicators tested, there basically is no real dependence between those indicators. The Levene's F-Test for Equality of Variances, which is the most commonly used statistic, is used to test the assumption of homogeneity of variance. One advantage of this test is that it does not require normality of the data. Levene's test, unlike Bartlett's test, is robust when the normal assumption is violated [32-33].

Tab. 2 (see the Appendix 1) shows the results of a test of the influence of economic performance indicators (factor q2 F1 Performance and factor q2 F2 Economic results) on

environmental (q11F1 through q11F4), social (q14F1 through q14F4) and corporate governance performance indicators (factors q29F1 through qF29 F4). Statistically significant effects, although only slightly so, were recorded in the following areas only:

-   Corporate Governance Effectiveness (q29 F1), statistically significant, t (47) = 2.22, p < 0.05.
-   Corporate Governance Structure (q29 F3), statistically significant, t (44) = 2.41, p < 0.05.
-   Labour Practices and Decent Work (q14 F3), statistically significant, t (47) = 2.72, p < 0.05.

Tab. 3 (see the Appendix 2) shows the results of a test of the influence of economic performance indicators (factor q2 F3 Financial Indicator and factor q2 F4 Cash Flow) on environmental (factors q11F1 through q11F4), social (factors q14F1 through q14F4) and corporate governance (factors q29F1 through qF29 F4) performance indicators. Statistically significant effects, although only slightly so, were recorded in the following areas only:

-   Compliance (q29 F4), statistically significant, t (47) = 2.58, p < 0.05.
-   Product Responsibility (q14 F4), statistically significant, t (44) = 2.35, p < 0.05.
-   Environmental investments (q11 F1), statistically significant, t (47) = 3.31, p < 0.05.

The correlation between ESG indicators and economic performance indicators, i.e. the question whether the changes in one variable are accompanied by consistent changes in the other, was studied with the aid of correlation analysis [29]. The correlation matrix contains four environmental factors, four social factors, four corporate governance factors, and four economic factors. The correlation coefficients calculated between the various dimensions are presented in Tab. 4 (see the Appendix 3). In Tab. 4 confirmed that a significant central correlation exists primarily between CG and the environmental, social and economic indicators. The CG tendency to invest in environmentally sound projects is reflected in product responsibility, in responsibility to stakeholder groups for compliance with statutory rules and regulations, insistence on ethical behaviour, submission of voluntary environmental/financial reports, including societal relations (community, allowances to municipalities). These responsibilities also stimulate the rise of financial indicators such as liquidity, debt, asset turnover, as well as cash flow. It appears that companies recognize the positive effect of CG on the environment along with the social and economic results.
Interestingly, no correlation was detected between the ESG indicators and profitability indicators (ROE, ROA, ROI, and ROS). These results suggest there is a negative relationship between the indicators. Multiple regression analysis characterizes the closeness of the dependent and independent variables. The regression tells us how ESG performance indicators affect the economic performance, and what the specific value of that performance will be in terms of profitability, economic results, financial results and cash flow. The values of ESG indicators, based on the devised descriptive regression model, allow us to predict the level of economic performance. Thus the hypotheses in this study can be formulated as follows:

H0: Environmental, social and corporate governance (ESG) performance does not improve the economic performance of companies in the manufacturing sector.

H1: Better economic performance is conducive to better environmental, social and corporate governance (ESG) performance of companies in the manufacturing sector.

The equation to test the hypotheses is expressed by the following basic regression model:

$$EP = b_o + b_1 ENVP + b_2 SP + b_3 CGP \quad (1)$$

The constant b_0 is the value of the dependent variable when the independent variable is zero (also called an intercept for being a point where the regression line intersects the *Y-axis*). Coefficients b_1, b_2, b_3 represent the estimated change in the mean value of the dependent variable for each unit of change in the independent variable. The independent variables in this regression equation are the following ESG factors: *ENVP-Environmental Performance, SP-Social Performance*, and *CGP-Corporate Governance Performance*. Dependent variable: *EP-Economic Performance*. The model was then tested using regression analysis, following a series of tests to fulfil its classic assumptions. These include tests of: autocorrelation, multicollinearity, and heteroscedacity. The hypothesis testing utilized a regression method. After processing the data in the model, the results showed the effect of ESG performance indicators as independent variables on the economic performance as a dependent variable, characterized by *EPER- Economic Performance Economic Results* (EAT, EBT, EBIT, Profit Margin, Turnover Size), *EPFI- Economic Performance Financial Indicators* (Liquidity, Debt, Asset Turnover), and *EPCF-Economic Performance Cash Flow* (Operating Cash Flow), which are defined and expressed in the equations of multiple regression:

$$EPER = -0.02 - 0.439\,Compliance + 0.381\,Society \quad (2)$$

$$EPFI = 1.004\_E13 + 0.395\,CGEffectiveness + 0.312\,Monitoring + 0.295\,Compliance$$

$$(3)$$

$$EPCF = 0.022 + 0.439\,Emission - 0.338\,HumanRights \quad (4)$$

Tab. 5 shows the result of a regression analysis with a stepwise method. The results of modelling by the Forward method show the effect of ESG indicators on each economic dependent variable (profitability, financial results, financial ratios, cash flow). As to the impact of ESG indicators on economic indicators, the study produced mixed results, only partially confirming the first hypothesis (*H1*).

TABLE V. REGRESSIONS ON ECONOMIC PERFORMANCE

Independent variables		Dependent Variable: q2 Faktor 1 Return on			
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t	Sig.
Model 1	R Square	0.305				
	Adjusted R Square	-0.004				
	Residual	27,110				
	F	0.987				0.485[b]

a. DependentVariable: q2 Faktor 1 Return on
b. Predictors: (Constant), q14 Faktor4 Product responsibility, q14 Faktor1 Society, q14 Faktor2 Human rights, q14 Faktor3 Labour Practices and Decent Work, q11 Faktor3 Source consumption, q29 Faktor4 Compliance, q29 Faktor2 Monitoring and reporting , q29 Faktor3 CG Structure, q11 Faktor5 Emissions, q29 Faktor1 CG Effectiveness, q11 Faktor1 Environmental Investments, q11 Fator2 Waste

		DependentVariable: q2 Faktor 2 Economic results				
Model 2	(Constant)	-0.002	0.137		-0.016	0.987
	q29 F4 Compliance	-0.439	0.141	-0.439	-3.110	0.004
	q14 F1 Society	0.381	0.136	0.395	2.805	0.008
	R Square	0.287				
	Adjusted R Square	0.249				
	Residual	17,759				
	F	7.462				0.002[c]

a. DependentVariable: q2 Faktor 2 Economic results
c. Predictors: (Constant), q29 Faktor 4 Compliance , q14 Faktor 1 Society

		DependentVariable: q2 Faktor 3 Financial indicators				
Model 3	(Constant)	1,004E-13	0.134		0.000	1,000
	q29F1Effectivenesst CG	0.395	0.135	0.395	2.919	0.006
	q29 F2 Monitoring	0.312	0.135	0.312	2.304	0.027
	q29 F4 Compliance	0.295	0.135	0.295	2.177	0.036
	R Square	0.340				
	Adjusted R Square	0.285				
	Residual	27,110				
	F	6.190				0.002[d]

a. DependentVariable: q2 Faktor 3 Financialindicators
d. Predictors: (Constant), q29 Faktor 1 CG Effectiveness, q29 Faktor2 Monitoring and reporting , q29 Faktor 4 Compliance

		Dependent Variable: q2 Faktor 4 Cash Flow				
Model 4	(Constant)	0.022	0.142		0.153	0.879
	q11 F5 Emissions	0.439	0.148	0.444	2.958	0.005
	q14F2 Human rights	-0.338	0.141	-0.360	-2.401	0.022
	R Square	0.235				
	Adjusted R Square	0.194				
	Residual	27,110				
	F	5.690				0.007[c]

a. DependentVariable: q2 Faktor 4 Cash Flow
c. Predictors: (Constant), q11 Faktor5 Emissions, q14 Faktor2 Human rights

Source: own processing of research

ESG performance indicators (*Model 1*) do not affect profitability (EPR- Economic Performance Return on), having the adjusted R^2 value of -0.004. This may be attributable to the fact that Czech companies still do not realize that the profitability of a socially responsible enterprise benefits from minimizing its environmental impact, or that CG is not applied in any meaningful way. These companies may have adopted ISO 14 001, but view it only as a competitive necessity. Nevertheless, ESG performance indicators (*Model 2*) explained 24.9 % ($R^2 = 0.249$) of variation in economic results (EPER). The variables Compliance, and Company are associated with economic results (EAT, EBT, EBIT, Profit margin, Turnover size). The most prominent was the influence of ESG performance indicators (*Model 3*) on financial indicators (EPFI). It explained 28.5 % ($R^2 = 0.285$) of variation in financial indicators, meaning that 28.5 % of it is due to variables CG Effectiveness, Monitoring, and Compliance. The remaining 71.5 % must be accounted for by other variables. The most influential is the CG effectiveness variable (0.395).

The higher the level of CG effectiveness, the higher is the financial indicators. The same is true for the monitoring effect (0.312) and compliance (0.295). The impact on the financial indicators in the area of corporate governance indicators is entirely predictable, due to the fact that CG emphasizes the monitoring of liquidity, debt, and asset turnover. Cash flow (*Model 4*) is the least affected by ESG performance indicators. The adjusted R^2 value of 0.194 for cash flow variation (EPCF) means that the variation is 19.4 % due to variables Emission (0.439), Human Rights (-0.338), all being statistically significant (Sig. < 0.05).

The first hypothesis states that ESG indicators, as independent variables, improve economic performance. The results of the statistical tests make it clear that ESG indicators, as independent variables, have little effect on performance in terms of economic results, financial indicators and cash flow, and no effect on profitability. Therefore, the first hypothesis (*H1*) cannot be confirmed. The results of this study are consistent with the research of [11], [13], [30], [21-22] and [30], whose findings show that environmental, social and corporate governance performance indicators do not have a significant impact on economic performance.

V. CONCLUSIONS

Environmental performance indicators in the context of an Environmental Management Systems (EMS and EMAS) of the organisation should be address primarily those organisation's environmental impacts that are most significant and which the company can influence by its operations, management, activities, products and services to environment and sustainable growth. They should fulfil the dual purpose of as-siting the management of the organisation and providing information to stakeholders [28]. Corporate environmental (sustainable) reporting is the part of organisation's environmental communication that is directed from the organisation to various target groups. Nowadays corporate environmental reporting has evolved to sustainability reporting, which covers a wider area of the organisation's performance also including economic and social aspects [30]. This empirical study examines the relationship between ESG performance indicators and economic performance in Czech

companies within the manufacturing sector. Theoretical considerations suggest that the environmental and social performance have a positive effect, as asserted by authors [14], [17], [19] and [31], but also a negative impact on the company's economic success, per [11-12].

This empirical study therefore focuses on the link between the ESG performance indicators and economic indicators (profitability, financial results, financial ratios and cash flow) in companies active in the manufacturing sector during the period 2011-2012, T-test by means of correlation analysis. The T-test of the influence of economic performance on ESG performance indicators yielded no statistically significant results.

The correlation results support the conclusion that there exists a positive correlation between CG and the environment, social responsibility and economic performance. Conversely, no link was found between the ESG indicators and profitability (ROE, ROA, ROI, and ROS). This multiple regression analysis did not find a significant correlation between ESG indicators and economic indicators in the companies from the manufacturing sector. The hypothesis that better economic performance brings about better ESG performance in these companies has to be rejected due to inconclusive results. The results indicate that Czech companies have not discovered the connection between ESG indicators and economic indicators. A future study could possibly refine these results by focusing not only on the companies with ISO 14 001, but also on those that monitor and report the financial - and especially non-financial - indicators, for example according to GRI, or which publish CSR reports. This could explain in part why the study did not provide an unequivocal confirmation of positive results.

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Appendix 1:

TABLE II.   TESTING OF THE STATISTICAL SIGNIFICANCE (T-TEST) OF THE FACTORS IN THE ECONOMIC PERFORMANCE (Q2 F 1 AND Q2 F 2)

Variables		q2 F 1 Return on					q2 F 2 Economic result				
		Levene's Test for Equality of Variances		T-test for Equality of Means			Levene's Test for Equality of Variances		T-test for Equalit y of Means		
		F	P-value	t	df	P-value. (2-tail.)	F	Sig.	t	df	P-value. (2-tail.)
q29 F 1 CG effectiveness	EQVA*	0.932	0.339	2.218	47	0.031	4.512	0.039	-1.867	47	0.068
	EQVNA**			1.957	19.076	0.065			-1.409	9.514	0.191
q29 F 2 Monitoring and reporting	EQVA*	2.346	0.132	0.541	47	0.591	1.565	0.217	-0.612	47	0.544
	EQVNA**			0.500	20.632	0.622			-0.524	10.339	0.611
q29 F 3 CG structure	EQVA*	3.556	0.066	-0.445	47	0.659	0.623	0.434	2.405	47	0.020
	EQVNA**			-0.361	16.907	0.723			2.229	11.026	0.048
q29 F4 Compliance	EQVA*	2.694	0.107	-1.388	47	0.172	0.492	0.486	-0.154	47	0.878
	EQVNA**			-1.647	35.997	0.108			-0.173	13.729	0.865
q14 F 2 Human rights	EQVA*	4.205	0.046	1.281	44	0.207	0.886	0.352	-0.187	44	0.852
	EQVNA**			1.080	16.440	0.296			-0.169	10.969	0.869
q14 F 1 Society	EQVA*	1.232	0.273	1.322	44	0.193	0.542	0.466	-0.617	44	0.541
	EQVNA**			1.502	29.491	0.144			-0.681	13.917	0.507
q14 F 3 Labour Practices and Decent Work	EQVA*	0.012	0.912	0.043	44	0.966	5.384	0.025	1.596	44	0.118
	EQVNA**			0.045	24.767	0.964			2.718	38.738	0.010
q14 F4 Product Responsibility	EQVA*	0.164	0.687	0.564	44	0.576	0.000	0.989	-0.747	44	0.459
	EQVNA**			0.610	26.220	0.547			-0.766	12.573	0.458
q11 F 1 Environmental investments	EQVA*	0.013	0.911	1.889	51	0.065	1.570	0.216	-0.571	51	0.570
	EQVNA**			1.927	29.920	0.063			-0.686	17.457	0.502
q11 F 2 Waste	EQVA*	1.224	0.274	0.960	51	0.342	0.134	0.715	0.125	51	0.901
	EQVNA**			1.125	42.107	0.267			0.146	16.635	0.886
q11 F 3 Source consumption	EQVA*	0.027	0.869	-0.007	51	0.995	15.348	0.000	-2.004	51	0.050
	EQVNA**			-0.008	45.741	0.994			-1.032	9.209	0.329
q11 F 5 Emissions	EQVA*	0.559	0.458	0.638	51	0.526	0.230	0.633	-0.435	51	0.665
	EQVNA**			0.662	31.162	0.513			-0.439	13.655	0.667

Source: own processing of research

Appendix 2:

TABLE III.   TESTING OF THE STATISTICAL SIGNIFICANCE (T-TEST) OF THE FACTORS IN THE ECONOMIC PERFORMANCE(Q2 F3 AND Q2 F 4)

Variables		q2 F 3 Financial indicators					q2 F 4 Cash Flow				
		Levene's Test for Equality of Variances		T-test for Equality of Means			Levene's Test for Equality of Variances		T-test for Equality of Means		
		F	P-value	t	df	P-value (2-tail.)	F	Sig.	t	df	P-value (2-tail.)
q29 F 1 CG effectiveness	EQVA*	5.775	0.020	2.034	47	0.048	0.306	0.583	-0.299	47	0.766
	EQVNA**			1.645	15.558	0.120			-0.280	29.022	0.782
q29 F 2 Monitoring and reporting	EQVA*	1.664	0.203	0.429	47	0.670	0.748	0.392	0.600	47	0.551
	EQVNA**			0.389	18.066	0.702			0.625	40.093	0.536
q29 F 3 CG structure	EQVA*	1.341	0.253	0.487	47	0.629	2.916	0.094	-1.818	47	0.075
	EQVNA**			0.418	16.750	0.681			-1.622	25.237	0.117
q29 F4 Compliance	EQVA*	0.994	0.324	2.581	47	0.013	0.772	0.384	0.217	47	0.829
	EQVNA**			2.912	27.425	0.007			0.203	29.133	0.840
q14 F 2 Human rights	EQVA*	0.286	0.595	1.700	44	0.096	0.052	0.821	-0.277	44	0.783
	EQVNA**			1.724	22.708	0.098			-0.289	31.118	0.774
q14 F 1 Society	EQVA*	0.221	0.641	0.855	44	0.397	0.776	0.383	0.404	44	0.688
	EQVNA**			0.809	19.773	0.428			0.428	32.277	0.672
q14 F 3 Labour Practices and Decent Work	EQVA*	6.472	0.015	1.597	44	0.117	0.813	0.372	0.776	44	0.442
	EQVNA**			1.238	14.764	0.235			0.838	33.954	0.408
q14 F4 Product Responsibility	EQVA*	1.863	0.179	2.353	44	0.023	0.668	0.418	-0.193	44	0.848
	EQVNA**			2.208	19.500	0.039			-0.202	31.104	0.841
q11 F 1 Enviromental investments	EQVA*	0.234	0.630	3.311	51	0.002	0.048	0.827	1.017	51	0.314
	EQVNA**			3.433	31.085	0.002			1.015	42.569	0.316
q11 F 2 Waste	EQVA*	6.665	0.013	-1.414	51	0.163	2.372	0.130	-0.740	51	0.463
	EQVNA**			-1.091	18.065	0.290			-0.816	50.800	0.418
q11 F 3 Source consumption	EQVA*	0.059	0.810	-0.282	51	0.779	4.605	0.037	0.948	51	0.348
	EQVNA**			-0.356	48.954	0.723			1.157	34.237	0.255
q11 F 5 Emissions	EQVA*	0.113	0.738	0.766	51	0.447	2.882	0.096	0.533	51	0.597
	EQVNA**			0.739	26.403	0.466			0.514	37.772	0.610

Source: own processing of research

Appendix 3:

TABLE IV.   CORRELATION MATRIX THE INFLUENCE OF ESG PERFORMANCE ON ECONOMIC PERFORMANCE INDICATORS

Factors	q14 F1	q14 F2	q14 F3	q14 F4	q11 F1	q11 F2	q11 F3	q11 F5	q29 F1	q29 F2	q29 F3	q29 F4	q2 F1	q2 F2	q2 F3	q2 F4
q14 F 1 Society	1															
q14 F 2 Human rights	0.119	1														
q14 F 3 Labour Practices and Decent Work	0.003	-0.139	1													
q14 F 4 Product responsibility	0.071	0.294	0.364*	1												
q11 F 1 Environmental investments	0.434*	0.376*	0.143	0.409*	1											
q11 F 2 Waste	0.017	0.063	-0.602**	-0.143	-0.062	1										
q11 F 3 Source consumption	-0.040	-0.232	-0.010	0.095	0.134	-0.299	1									
q11 F 5 Emissions	0.240	0.121	0.149	0.156	0.236	-0.331	0.209	1								
q29 F 1 CG effectiveness	0.157	0.432*	0.204	0.343*	0.231	-0.249	0.019	0.335	1							
q29 F 2 Monitoring and reporting	0.294	0.057	0.000	-0.101	0.025	-0.211	-0.235	0.100	0.210	1						
q29 F 3 CG structure	-0.147	0.120	0.101	0.368*	0.219	-0.124	-0.173	-0.086	0.004	-0.033	1					
q29 F 4 Compliance	0.136	0.252	0.158	0.209	0.481**	-0.276	0.125	0.336	0.094	0.025	0.042	1				
q2 F 1 Return on	0.003	-0.228	-0.353*	-0.280	-0.295	0.324	0.027	-0.137	0.055	0.131	-0.244	-0.092	1			
q2 F 2 Economic result	0.224	-0.263	0.142	-0.086	-0.334	-0.133	-0.097	-0.288	-0.078	-0.082	0.105	-0.384*	0.028	1		
q2 F 3 Financial indicators	0.373*	0.184	0.243	0.007	0.264	-0.388*	-0.071	0.335	0.528**	0.268	0.022	0.411*	-0.032	-0.071	1	
q2 F 4 Cash Flow	0.131	-0.125	0.173	-0.081	0.209	-0.300	0.069	0.321	0.259	0.408*	-0.043	0.037	-0.026	-0.275	0.299	1

Source: own processing of research

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at tne 0.01 level (2-tailed).