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The Impact of Human Capital Sustainability Policies on Financial Performance: A Perspective from Romania, Germany and South Africa

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Abstract:- Our study aims to improve the literature by providing answers to the issues related to the impact of reporting non-financial information specific to human capital and we focus on analyzing how it influences economic and financial performance.

The objective of the study is to analyze the correlation between economic-financial performance indicators, in particular the economic return on assets (ROA) and the financial rate of return (ROE), and the non-financial items reported for human capital.

J.E.L. classification: M41, M45

Keywords:- *Sustenability; Human Capital; Economic Return on Assets; Finanical Rate of Return; Correlation; Regression;*

I. INTRODUCTION

In the context of globalization and growing environmental awareness, sustainability policies have become an essential component of corporate strategies. These policies, which aim to develop uma capital, reduce negative environmental impacts and promote responsible practices, are being adopted by a growing number of companies worldwide. The question still remains, however, whether these policies contribute to improving the financial performance of companies. In this paper, we aim to explore the impact of human capital sustainability policies on financial performance by analyzing three distinct countries: Romania, Germany and South Africa.

Romania, as part of the European Union, has adopted a number of regulations and initiatives to promote sustainability. However, its transition from an economy based on traditional industries to one oriented towards sustainable practices is still ongoing. In contrast, Germany is considered a world leader in implementing sustainability policies, with a strong legislative framework and many innovative initiatives in this field. South Africa, while facing major economic and social challenges, is attempting to balance development needs with environmental protection by adopting policies that reflect the complexity of its socio-economic context.

By comparing these three countries, we aim to understand how the different economic, social and legislative contexts influence the effectiveness of specific human capital sustainability policies and how they affect companies' financial performance. Our analysis focuses on identifying the key factors that determine the success of these policies and assessing their impact on the competitiveness and profitability of companies, and we aim to provide a comprehensive perspective on how sustainability can become a driver of economic growth and sustainable development.

II. LITERATURE REVIEW

Sustainability policies have become fundamental in global sustainability policies, having a significant impact on the financial performance of companies. The literature review explores how sustainability policies influence the financial performance of companies in Romania, Germany and South Africa, highlighting fundamental concepts and regional differences in the implementation and effects of these policies.

According to Dyllick and Hockerts (2002), corporate sustainability is defined as meeting the needs of a firm's direct and indirect stakeholders without compromising the ability to meet their future needs. It involves the maintenance and growth of economic, social and environmental capital, actively contributing to sustainability in the policy domain . Eccles, Ioannou, and Serafeim (2014) add that the voluntary integration of environmental and social policies into the business model is a distinct fundamental type of the modern corporation. It is characterized by a governance structure that, in addition to financial performance, takes into account the company's environmental and social impacts (Liu and Xin, 2022), a long-term approach to inter-temporal profit maximization and an active stakeholder management process.

In Romania, sustainable economic growth remains a difficult objective to achieve. Iacobuta et al. (2020) emphasize that without adequate resources generated by growth, human and environmental well-being remain only targets in development strategies, to be achieved at some point in the future. This suggests that sustainability policies in Romania face significant challenges in terms of

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implementation and impact on companies' financial performance.

Germany is notable for a conceptual framework that differentiates between implicit and explicit CSR. Matten and Moon (2008) argue that explicit CSR emphasizes companies' discrete obligations and resources to address certain social issues, while implicit CSR is embedded in the country's social and economic practices and regulations . This differentiation is relevant for understanding how German companies approach sustainability and its impact on financial performance.

In South Africa, the term corporate social responsibility (CSR) has been replaced by corporate social investment (CSI) to deflect attention away from demands to redress historical contributions to the apartheid system. Fig (2005) argues that voluntary sustainability initiatives have failed and that compliance with black economic empowerment charters and environmental standards needs to be legislated and regulated. This points to the need for a robust legislative framework to ensure the real impact of sustainability policies on financial performance.

The presented literature highlights the complexity and diversity of sustainability policies in Romania, Germany and South Africa, emphasizing that the success of these policies depends on the national context and proper implementation. While Romania faces challenges in terms of the resources needed for sustainable development, Germany benefits from a well-defined conceptual framework for CSR, and South Africa requires strict legislative regulations to ensure compliance. These regional differences significantly influence the impact of sustainability policies on companies' financial performance.

III. RESEARCH METODOLOGY

Within the research methodology we used a mixed methods approach, combining quantitative and qualitative methods. This approach allows us to get an overview of the phenomenon under study. We analyzed companies from Romania, Germany and South Africa, creating three databases: one for each country and one for a comparative analysis. The sample comprises 30 companies from the three countries, 10 companies from each country over a 10-year period. These companies are selected for the industry and utilities sector.

The reason for choosing companies from the respective countries:

- Romania: We chose companies in Romania because it represents our area of interest. We want to look at how companies in our country implement policies and practices in their business aimed at the well-being, health and safety of their employees.
- Germany: We chose companies from Germany because, similar to Romania, it is part of the European Community Area but has a high level of reporting. Germany is an economic leader in the EU and German companies have the strength to implement robust reporting methods. All companies in our sample for this country report non-financial information on human capital through sustainability reports that comply with IFRS, ISSB and GRI (Global Reporting Initiative) standards;
- South Africa: We chose companies in South Africa because this country requires listed companies to present non-financial information through integrated reporting, which leads to more robust information.

We used information from the Refinitiv Eikon database to select and complete the sample. We consulted the ESG section for non-financial aspects and the Financials section for performance indicators (ROA and ROE).

We extracted non-financial data on human capital for German and South African companies from the Refinitiv platform. For the Romanian companies completing the sample, we manually collected the data from non-financial statements, annual reports or directors' reports. These data are presented in the table no 1.

Table 1: Notation of Variables of Human Capital Analysis

Symbol	Variable Type	Variables
ROA	Dependent	Rate of return on assets
ROE	Dependent	Economic rate of return
PSCHS	Independent	Policy Supply Chain Health and Safety
PST	Independent	Policy Skills Traning
SCHST	Independent	Supply Chain Health and Safety Training
PFA	Independent	Policy Freedom of Association
TUR	Independent	Trade Union Representation
TovE	Independent	Turnover of Employees
WE	Independent	Women Employees
WM	Independent	Women Managers
EWD	Independent	Employees With Disabilities
EF	Independent	Employee Fatalities
ATH	Independent	Average Training Hours
TCPE	Independent	Training Costs Per Employee
NE	Independent	Number of Employees

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TDO	Independent	Target Diversiy and Opportunity
HST	Independent	Health and Safety Training
IP	Independent	Internal Promotion
SESGT	Independent	Supplier ESG Training
FHR	Independent	Fundamental Human Rights ILO UN
HRC	Independent	Human Rights Contractor
HRBC	Independent	Human Rights Breaches Contractor
SG	Independent	Salary Gap
NEC	Independent	Net Employment Creation
NECSRR	Independent	Number of Employee from CSR reporting
ETI	Independent	Ethical Trading Initiative ETI

The information presented in the form of independent variables creates the premises for determining the elements that define human capital and its role on economic-financial performance which are represented by the dependent variables ROA and ROE.

IV. FIDINGS

The results obtained using Pearson correlation and descriptive analysis, after performing Shapiro-Wilk normality tests for small databases on the information retrieved from the companies in each country (Romania, Germany and South Africa), determine the multiple linear regression models.

Descriptive analysis helps us to understand the distribution of the variables being considered and is the first step in multiple linear regression analysis. With the descriptive analysis we observe the variables that follow the Gaussian curve for the companies that belong to each state. We keep for analysis only the variables for which the error is smaller than the mean and present them in Table 2, as follows:

Table 2: Descriptive statistics for Romania, Germany and South Africa

Descriptive Statistics	**Romania**			**Germany**			**South Africa**		
Variabile	**Mean**	**Std. D**	**N**	**Mean**	**Std. D**	**N**	**Mean**	**Std. D**	**N**
TDO	--	--	--	1,42	0,496	100	--	--	--
HST	--	--	--	1,69	0,466	99	--	--	--
IP	--	--	--	1,43	0,498	100	--	--	--
SESGT	--	--	--	1,60	0,493	99	--	--	--
FHR	--	--	--	1,19	0,394	100	--	--	--
HRC	--	--	--	1,19	0,394	100	--	--	--
HRBC	--	--	--	1,37	0,486	99	--	--	--
SG	--	--	--	31,59	18,215	98	--	--	--
NEC	0,93	0,52	47	49,34	28,278	100	--	--	--
NECSRR	--	--	--	49,17	28,241	100	--	--	--
WE	--	--	--	36,94	20,04	100	13,31	7,184	100
ATH	9,70	5,64	20	22,02	11,657	49	4,14	1,737	100
NE	--	--	--	50,35	28,79	100	43,10	23,393	100
PST	1,17	0,376	60	--	--	--	--	--	--
ETI	1,74	0,443	50	--	--	--	--	--	--
PSCHS	--	--	--	--	--	--	1,83	0,377	100
SCHST	--	--	--	--	--	--	1,93	0,256	100
PFA	--	--	--	--	--	--	1,53	0,499	100
TUR	--	--	--	--	--	--	19,13	7,891	100
TovE	--	--	--	--	--	--	9,68	4,051	100
WM	--	--	--	--	--	--	12,62	5,047	100
EWD	--	--	--	--	--	--	2,70	1,019	100
EF	--	--	--	--	--	--	2,23	1,080	100
TCPE	--	--	--	--	--	--	27,20	12,096	100

On the basis of the descriptive analysis it can be observed from Table 2 that for Romania only four variables comply with the condition that the error is smaller than the mean, for Germany a total of 13 variables and for South Africa a total of 12 variables. After the number of observations we obtain maximum values for South Africa,

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which shows a better robustness of the data, Germany with almost similar responses and Romania with low values. Based on the data obtained using descriptive analysis our tri-state econometric research model can be performed. For this we resort to multiple linear regression analysis.

In the paper "The impact of economic and financial performance on the stock market performance of manufacturing companies listed on the BVB, (Siminică et al., 2017), presents the steps to be followed in multiple regression analysis. After performing the descriptive analysis, the next step is to determine the correlation between the variables taken in the study and to determine the statistically significant relationship, after which the data are tested to obtain the multiple linear regression model. The data needed to interpret the results in this way are given by the summary model for the R^2 value, the results of the F-test (Fisher's test), determined using the ANOVA function and the values of the coefficients of the regression equation.

Using the analyze function and the regression command, we performed the necessary tests to determine the regression equation. The method used, in the command panel, is the *Enter* method. It was also selected the option to eliminate variables for which the error is very large.

The regression equation for our study is:

$$\textbf{Performance} = \textbf{constant} + (c1xv1) + (c2xv2) + (c3+v3) + ... + (cnxv3) + \varepsilon$$

where: **v1...vn** = are the independent variables for human capital;
c1...cn = are the regression coefficients
ε = represents the error

Table 3: Model Summary by Performance Type for Romania, Germany and South Africa

Model Summary	Romania		Germany		South Africa	
Economic and financial performance	ROA	ROE	ROA	ROE	ROA	ROE
Model	1	1	1	1	1	1
R	0,766	0,807	0,781	0,775	0,699	0,685
R^2	0,587	0,651	0,610	0,601	0,488	0,470
Ajusted R square	0,442	0,511	0,461	0,449	0,418	0,396
Std. Error of the Estimate	17,393	17,844	3,488	9,998	16,699	19,634
R square Change	0,587	0,651	0,610	0,601	0,488	0,470

For **Romania**, for the ROA analysis we obtain the results of the model analysis showing that the correlation coefficient R is 0,766, which indicates a strong positive correlation between the independent variables and the dependent variable. R^2 is 0,587, which means that about 59% of the variation in the dependent variable is explained by the model. The R Square fit is 0,422, suggesting that, after adjusting for the number of predictors included, the model explains 42% of the variance. The standard error of the estimate is 17,393, which gives an indication of the variability of the estimates with respect to the true values. The R Square change is 0,587, confirming the significant explanatory power of the model.

The results of the ROE analysis determine the model indicating a correlation coefficient R of 0,807, which suggests a strong positive correlation between the independent variables and the dependent variable. The R^2 is 0,651, which means that about 65% of the variation in the dependent variable is explained by the model. The R Square fit is 0,511, suggesting that, after adjusting for the number of predictors included, the model explains 51% of the variance. The standard error of the estimate is 17,844, indicating the variability of the estimates from the true values. The R Square change is 0,651, confirming the significant explanatory power of the model.

For **Germany**, the results of the model analysis determined for ROA show that R is 0,781, indicating a strong positive correlation between the independent variables and the dependent variable. R^2 is 0,610, which means that about 61% of the variation in the dependent variable is explained by the model. The R Square fit is 0,461, suggesting that, after adjusting for the number of predictors included, the model explains 46% of the variance of the variable. The standard error of the estimate is 3,448, giving an indication of how much the estimated values vary from the true values. The R Square change is 0,610, confirming the significant explanatory power of the model.

For ROE, the results of the model analysis show that the correlation coefficient R is 0,775, which indicates a strong positive correlation between the independent variables and the dependent variable. R^2 is 0,601, which means that about 60% of the variation in the dependent variable is explained by the model. The R Square fit is 0,449, suggesting that, after adjusting for the number of predictors included, the model explains 45% of the variance. The standard error of the estimate is 9,998, which gives an indication of the variability of the estimates with respect to the true values. The R Square change is 0,601, confirming the significant explanatory power of the model.

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For **South Africa**, the Summary Model determined for ROA analysis, shows by R-value (0,699) and R^2 value (0,488) a moderate correlation between the independent variables and the dependent variable ROA. The model explains 49% of the variance of the dependent variable and adjusting for the number of independent variables reduces this value to 42% suggesting that the model is significant for our research.

Summary model results for the ROE analysis show that the regression model has a correlation R of 0,685, suggesting a moderate positive relationship between the independent variables and the dependent variable. The R^2 is 0,470, indicating that about 47% of the variation in the dependent variable is explained by the model. The R Square fit is 0,396, suggesting that, after adjusting for the number of predictors included, the model explains 40% of the variance. The standard error of the estimate is also 19,634, which gives an idea of how much the estimated values vary from the true values. The change in R Square is 0,470, which confirms that the model has significant explanatory power.

Since we obtained significant results for each of the models determined using multiple linear regression we determine the F-test values for each state as follows:

Table 4: ANOVA analysis

ANOVA	**Romania**		**Germany**		**South Africa**	
Economic and financial performance	ROA	ROE	ROA	ROE	ROA	ROE
Model	1	1	1	1	1	1
Sum of Square - Regresion	4298,926	5937,567	633,001	5123,800	23141,461	29684,010
Sum of Square - Residual	3025,052	3184,201	404,203	3398,387	24261,539	33538,740
Sum of Square - Total	7323,987	9121,767	1037,205	8522,187	47403,000	63222,750
df - Regresion	4	4	13	13	12	12
df - Residual	10	10	34	34	87	87
df - Total	14	14	47	47	99	99
Mean Square - Regresion	1074,732	1484,392	48,692	394,138	1928,455	2473,667
Mean Square - Total	302,505	318,420	11,888	99,953	278,868	385,503
F	3,553	4,662	4,096	3,943	6,915	6,417
Sig.	0,047	0,022	0,000	0,001	0,000	0,000

For **Romania** in determining the ROA, the results of the ANOVA analysis indicate that the sum of squares for the regression is 4298,926 with 4 degrees of freedom, resulting in a mean of squares of 1074,732. The F-statistic is 3553, and the associated p-value is 0.047, suggesting that the regression model is statistically significant. The sum of residual squares is 3025,052 with 10 degrees of freedom and the total sum is 7323,978 with 14 degrees of freedom. These results confirm that the model explains the variability in the data in a meaningful way.

For the dependent variable ROE, the results of the ANOVA analysis show that the regression model obtained a sum of squares of 5937,567 with a degree of freedom of 4, with a mean of squares of 1484,392. The calculated F value is 4.662 and the statistical significance (Sig.) is 0,022. As for the sum of residual squares, it is 3184,201, with 10 degrees of freedom and a mean of squares of 318,420. The total sum of squares is 9121,767, with 14 degrees of freedom. These results suggest a significant relationship between the studied variables.

The results of the ANOVA analysis for **Germany**, in terms of analyzing the dependent variable ROA, indicate that the sum of squares for the regression is 633,001 with 13 degrees of freedom, resulting in a mean of squares of 48,692. The F statistic is 4,096 and the associated p-value is very small (p = 0.000), suggesting that the regression model is statistically significant. The sum of residual squares is 404,203 with 34 degrees of freedom and the total sum is 1037,205 with 47 degrees of freedom. These results confirm that the model explains the variability in the data in a meaningful way.

In determining the dependent variable ROE, the results of the ANOVA analysis indicate that the sum of squares for the regression is 5123,800 with 13 degrees of freedom, resulting in a mean of squares of 394,138. The F statistic is 3,943, and the associated p-value is 0.001, suggesting that the regression model is statistically significant. The sum of residual squares is 3398,387 with 34 degrees of freedom and the total sum is 8522,187 with 47 degrees of freedom.

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These results confirm that the model explains the variability in the data in a meaningful way.

For South Africa, ANOVA analysis helps to statistically assess the difference in the means of the independent variables explaining the dependent variable ROA. The sum of squares through the large value (23141,461) suggests that the model explains a significant part of the variance of the dependent variable ROA. The residual value (24261,539), represents the remaining variation unexplained by the model. The F-test (Ficher), which compares the variance explained by the model with the unexplained variance is at a high value (6,915) and the p-value (Sig.) is small (0,000).

This means that the null hypothesis is rejected, which states that there are no statistically significant differences between the independent variables and the dependent variable ROA. Thus, the regression model explains a significant part of the variation in the dependent variable ROA.

For the study of the dependent variable ROE, the results of the ANOVA analysis indicate that the sum of squares for the regression is 29684,010 with 12 degrees of freedom, leading to a mean of squares of 2473,667. The F statistic is 6,417, and the associated p-value is very small (p = 0,000), suggesting that the regression model is statistically significant. The sum of residual squares is 33538,740 with 87 degrees of freedom and the total sum is 63222,750 with 99 degrees of freedom. These results confirm that the model explains the variability in the data in a meaningful way.

Following ANOVA analysis we can determine the regression coefficients. With their help we trace the relationships between the independent variables that influence and the dependent variables to be explained. The absolute values and the direction of the relationship are presented in Table 5.

Table 5: Analysis of Regression Coefficients in Relation to the Dependent Variables ROA and ROE

Coeff.	Variable	Romania		Variable	Germany		Variable	South Africa	
		ROA	ROE		ROA	ROE		ROA	ROE
	Constanta	29,661	39,416	**Constanta**	-5,946	-12,602	**Constanta**	35,531	16,408
C1	*PST*	-10,663	-20,247	*TDO*	1,468	10,866	*PSCHS*	2,219	0,791
C2	*ETI*	18,082	25,199	*HST*	-2,555	-5,019	*SCHST*	14,252	22,396
C3	--	--	--	*IP*	-0,317	-5,040	*PFA*	-12,229	-9,436
C4	--	--	--	*SESGT*	0,963	-4,348	*TUR*	-0,337	0,005
C5	--	--	--	*FHR*	-2,345	-8,791	*TovE*	-2,336	-2,512
C6	--	--	--	*HRC*	1,909	7,421	*EWD*	0,128	0,090
C7	--	--	--	*HRBC*	5,267	9,392	*EF*	6,989	6,444
C8	--	--	--	*SG*	0,119	0,182	*TCPE*	0,366	0,381
C9	*NEC*	-23,648	-28,176	*NEC*	0,056	0,118	*WM*	-0,103	0,135
C10	--	--	--	*NECSRR*	0,720	2,088	--	--	--
C11	--	--	--	*WE*	0,135	0,344	*WE*	0,605	0,472
C12	*ATH*	1,383	1,012	*ATH*	0,324	0,881	*ATH*	-2,793	-2,853
C13	--	--	--	*NE*	-0,758	-2,142	*NE*	-0,012	0,054
E	*E*	38,235	39,228	*E*	8,122	23,551	*E*	25,559	30,051
Test F	*Test F*	3,553	4,662	*Test F*	4,096	3,943	*Test F*	6,915	6,417
Test T	*Test T*	,776	1,005	*Test T*	-0,732	-0,535	*Test T*	1,390	0,546

For **Romania** indeterminate regression coefficients for the dependent variable ROA, the results of the coefficient analysis show that the intercept is 29,661, but this result is not statistically significant (p = 0,456). ”Policy Skills Training” making has a coefficient of -10,663, suggesting a negative impact, but this result is not significant (p = 0,672). ”Net employement creation” has a coefficient of -23,648, which is significant (p = 0,027), indicating a negative influence on return on assets (ROA). ”Ethical trading initiative ETI” has a coefficient of 18,082, but this is not significant (p = 0,173). The ”Average training hours” has a coefficient of 1,383, which is statistically insignificant (p = 0,402). These results highlight the variables that influence ROA and their statistical significance.

Coefficient results for the dependent variable ROE show that the constant term is 39,416, with a standard error of 39,228, and the associated t-value is 1,005, with a significance of 0,339. For the variable "Policy Skills Training", the coefficient is -20,247, with a standard error of 25,118 and a standardized Beta coefficient of -0,298; the t-value is -0,806, with a significance of 0,439. The variable "Net employement creation" has a coefficient of -28,176, with a standard error of 9,354 and a Beta coefficient of -0,571; the t-value is -3,012, and significance is 0,013, indicating statistical significance. For 'Ethical Trade Initiative ETI', the coefficient is 25,199, with a standard error of 12,641 and a Beta coefficient of 0,437; the t-value is 1,993 and significance is 0,074, suggesting a closeness of significance. Finally, for ”Average Training Hours”, the coefficient is 1,012, with a standard error of 1,621 and a Beta coefficient of 0,224; the t-value is 0,624 and significance is 0,547, indicating no significance of the variable.

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For **Germany** the results of the coefficient analysis for the regression model for the dependent variable ROA show that the intercept is -5,946, but not statistically significant (p = 0,469). The ”Target Diversity and opportunity” have a coefficient of 1,468, but this result is not significant (p = 0,401). For "Health and safety training" we have a coefficient of -2,555, which is not significant (p = 0,313). ”Internal promotion” has a coefficient of -0,317, and this impact is not significant (p = 0,827). Supplier ESG Training” has a coefficient of 0,963, but this impact is not significant (p = 0,672).

”Fundamental human rights according to the UN ILO” has a coefficient of -2,345, which is not statistically significant (p = 0,248). The coefficient for the ”Human rights contractor” is 1,909, but not significant (p = 0,412). ”Human rights violations breaches contractor” have a positive coefficient of 5,267, which is significant (p = 0,009).

The wage gap has a coefficient of 0,119 and is significant (p = 0,039), and ”Net employement creation” has a coefficient of 0,056 and is also significant (p = 0,010). The ”number of employees from CSR reporting” has a coefficient of 0,720, but is insignificant (p = 0,161). ”Women employees” have a coefficient of 0,135, which is statistically significant (p = 0,008). The ”Average training hours” has a coefficient of 0,324 and is significant (p = 0,000). Finally, the ”Number of employees” has a coefficient of -0,758, but this impact is not significant (p = 0,133). These results indicate the variables influencing return on assets (ROA) and their statistical significance.

For ROE, the coefficient analysis results for the regression model indicate an intercept of -12,602, which is not statistically significant (p = 0,596). ”Target diversity and opportunity” have a coefficient of 10,866, which is significant (p = 0,037), suggesting a positive influence on return on equity (ROE). ”Halth and Safety Training” have a coefficient of -5,019, but this impact is not significant (p = 0,492). ”Internal promotion” has a coefficient of -5,040 and the result is insignificant (p = 0,234).

”Supplier ESG training” has a coefficient of -4,348, which is not significant (p = 0,511). ”Fundamental human rights ILO UN” have a coefficient of -8,791, statistically insignificant (p = 0,138). The coefficient for the contractor in the human rights field is 7,421, but not significant (p = 0,274). ”Human rights breaches contractor” have a positive coefficient of 9,392, almost significant (p = 0,096).

The ”Salary gap” has a coefficient of 0,182 and is insignificant (p = 0,265), and net job creation has a coefficient of 0,118 and is close to significance (p = 0,054). The ”Number of employees from CSR reporting” has a coefficient of 2,088, but is insignificant (p = 0,160). ”Women employees” have a coefficient of 0,344, which is significant (p = 0,018), and the ”Average training Hours” has a coefficient of 0,881, which is statistically significant (p = 0,001). Finally, the number of employees has a coefficient of -2,142, but this impact is not significant (p = 0,143). These results emphasize the variables with influence on return on equity.

For **South Africa**, coefficient analysis shows that the intercept of the model is 35,531, which indicates the value of ROA when all predictors are zero, but is not statistically significant (p = 0,168). For the ”Policy Supply Chain Health & Safety”, the coefficient of 2,219 suggests a positive influence on ROA, but is not significant (p = 0,762). ”Health and safety training” has a coefficient of 14.252, indicating a positive relationship, but not statistically significant (p = 0.151).

”Policy freedom of association” has a negative coefficient of -12,229, suggesting that a weaker policy might reduce ROA; this result is at the borderline of significance (p = 0,050). ”Trade union representation” has a coefficient of -0,337, but is not significant (p = 0,294). ”Turnover of Employees”, with a negative coefficient of -2,336, indicates a strong association between higher staff turnover and lower ROA and is statistically significant (p = 0,000). For female employees, the coefficient is 0.605, but the impact is insignificant (p = 0,124).

”Women managers” have a coefficient of -0,103 and the result is not significant (p = 0,849). ”Employees with disabilities” have a positive coefficient of 0,128, but not statistically significant (p = 0,954). ”Employee fatalities” have a positive coefficient of 6,989, which suggests a surprising association with higher ROA and is highly significant (p = 0,001). The ”Average training hours” has a negative coefficient of -2,793, indicating a significant relationship (p = 0,026), while ”Training costs per employee” have a positive coefficient of 0,366, which is statistically significant (p = 0,040). Finally, the ”Number of employees” has a coefficient of -0,012, which is practically insignificant (p = 0,915).

The model highlights several significant variables influencing ROA, such as staff turnover, employee deaths, average hours of training and training costs per employee, while the other variables did not show notable statistical significance.

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The results of the coefficient analysis for the regression model for the dependent variable ROE, show that the intercept is 16,408, but is not statistically significant (p = 0,586). The "Policy supply chain health and safety" has a coefficient of 0,791, but is insignificant (p = 0,927). "Supply chain health and safety training" has a coefficient of 22,396, which is close to significance (p = 0,056). "Policy freedom of association" has a negative coefficient of -9,436, but is not significant (p = 0,195). "Trade union representation" has a very small coefficient of 0,005, which is insignificant (p = 0,989).

"Turnover of employees" has a negative coefficient of -2,512, suggesting a significant association with a p-value of 0,000. "Women employees" have a coefficient of 0,472, but this is insignificant (p = 0,306). The coefficient for "Women managers is 0,135 and is not significant (p = 0,831). "Employees with disabilities" have a coefficient of 0,090, statistically insignificant (p = 0,973). "Employee fatalities" have a coefficient of 6,444, which is significant (p = 0,009), indicating a positive influence on the dependent variable.

The "Average training hours" has a coefficient of -2,853, approaching significance (p = 0,053). "Training costs per employee" has a coefficient of 0,381, with a p-value of 0,068, suggesting a potential influence. Finally, the "Number of employees" has a coefficient of 0,054, which is not significant (p = 0,687). These results highlight variables with a significant impact on the financial rate of return (ROE).

The determination of regression coefficients provides crucial insight into the relationship between independent and dependent variables. Their numerical values indicate the magnitude and direction of the effect of each independent variable on the dependent variable. With the help of regression coefficients we can mathematically model multiple linear regression as follows:
Romania

ROA = 29,661 - 10,663 x PST + 18,082 x ETI + 23,648 x
x NEC + 1,383 x ATH + 38,235

ROE = 39,416 - 20,247 x PST + 25,199 x ETI - 28,176 x
x NEC + 1,012 x ATH + 39,228

- *Germany*

ROA = -5,946 + 1,468 x TDO - 2,555 x HST - 0,317 x IP +
+ 0,963 x SESGT - 2,345 x FHR + 1,909 x HRC +
+ 5,267 x HRBC + 0,119 x SG + 0,056 x NEC +
+ 0,720 x NECSRR + 1,135 x WE + 0,119 x SG +
+ 0,056 x NEC + 0,720 x NECSRR + 0,135 x WE +
+ 0,324 x ATH - 0,758 x NE + 8,122

ROE = -12,602 + 10,866 x TDO - 5,019 x HST - 5,040 x
x IP - 4,348 x SESGT - 8,791 x FHR + 7,421 x
x HRC + 9,392 x HRBC + 0,182 x SG + 0,118 x
x NEC + 2,088 x NECSRR + 0,344 x WE + 0,881 x
x ATH) - 2,142 x NE + 23,551

- *South Africa*

ROA = 35,531 + 2,219 x PSCHS + 14,252 x SCHST –
- 12,229 x PFA - 0,337 x TUR - 2,336 xTovE) +
+ 0,128 x EWD + 6,989 x EF + 0,366 x TCPE) –
- 0,103 x WM + 0,605 + WE) - 2,793 x ATH - 0,012
x NE + 25,559

ROE = 16,408 + 0,791 x PSCHS + 22,396 x SCHST -9,436
x PFA + 0,005 x TUR - 2,512 x TovE) + (0,090 x
x EWD + 6,444 x EF + 0,381x TCPE + 0,135 x WM
+ 0,472 x WE -2,85x ATH) + (0,054 x NE) + 30,051

By determining the regression equation, the relevance of our study is demonstrated by the fact that specific elements of human capital have a direct influence on economic and financial performance through the mathematical expression of this relationship.

V. COMPARATIVE ANALYSIS

Our analysis based on multiple linear regression was designed to determine the impact that the independent variables, i.e. financial and non-financial human capital information, have on the dependent variables represented by the economic-financial performance indicators ROA and ROE.

Individual regression studies showed better results for Germany than for South Africa and Romania. A total of 13 independent variables have an impact in the variance of the dependent variables ROA and ROE for German companies, a total of 12 independent variables have an impact in the variance of the dependent variables economic-financial performance for South African companies and a total of four independent variables have an impact in the variance of the dependent variables for Romanian companies.

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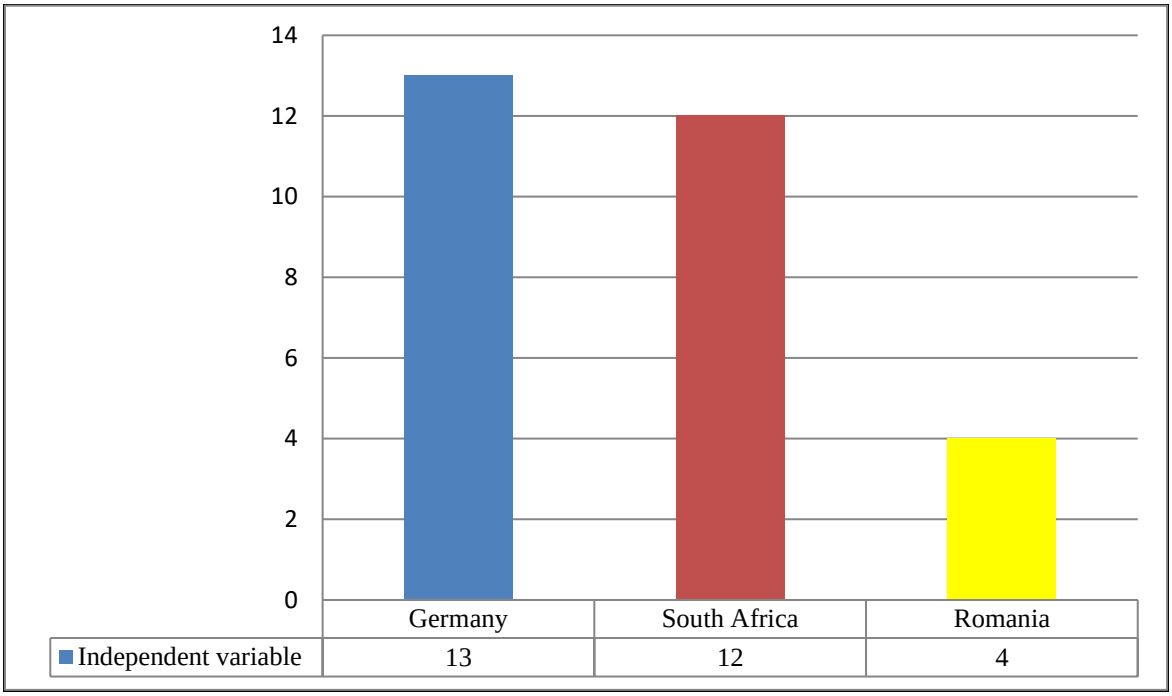

Fig. 1. Number of Independent Variables Validated by Multiple Linear Regression Analysis

The weight of the variables that contributed to the analysis process is very important, but the impact these variables have on the performance indicators is even more important. A correct weighting allows us to identify the key variables that significantly influence the company's performance. Based on the weights established, the estimated impact of each variable can be calculated, giving us a clear picture of the factors contributing to their success or failure.

For the comparative analysis we selected, according to the tri-state multiple linear regression multiple linear regression analysis, the results obtained for the R^2 coefficient for each independent variable. Centralizing them gave the possibility to visualize graphically the impact that the independent variables have on the ROA and ROE indicators.

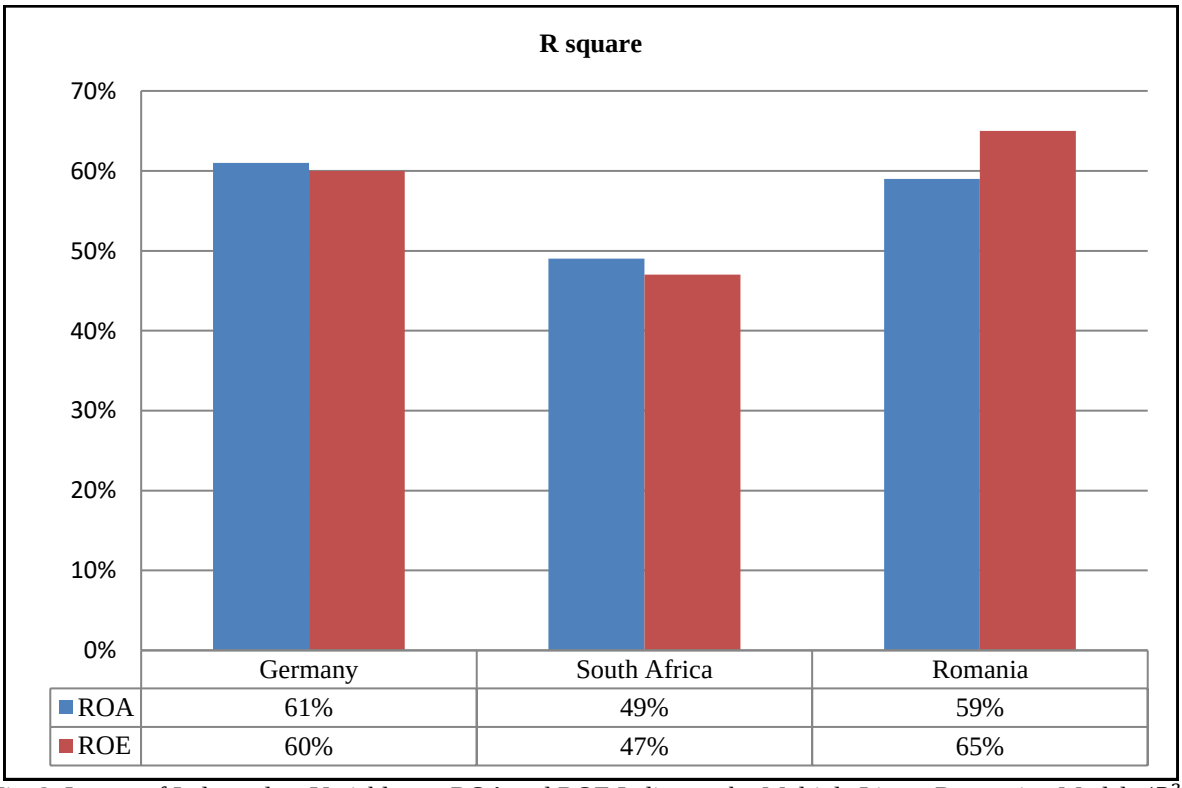

Fig. 2. Impact of Independent Variables on ROA and ROE Indicators by Multiple Linear Regression Models (R^2)

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Comparative studies show that there are stronger correlations for Germany compared to South Africa and Romania. Germany being a world economic leader with a strong industry brings stronger results in terms of economic performance. South Africa with a developing economy manages to bring very good results due to its integrated reporting model (Rensburg and Botha, 2014). This demonstrates the quality of human capital information which has a higher degree of robustness through reporting and integrated thinking principles. Romania is in the process of economic development, alignment with European directives and sustainability policies are slowly starting to be implemented also for small and medium sized companies. The South African model explains 49% of the variance in the ROA dependent variable and 47% of the variance in the ROE dependent variable. The German model, with a similar number of valid variables in the regression analysis, six, explains 61% of the variance in the ROA dependent variable and 60% of the variance in the ROE dependent variable. The Romanian model, with a number of two valid independent variables, explains 59% of the variance in the ROA dependent variable and 65% of the variance in the ROE dependent variable.

VI. VI CONCLUSIONS

The subject of our research is the subject of a tri-state analysis including Romania, Germany and South Africa. The aim of this analysis is to determine the impact of non-financial information related to human capital on financial performance, with a focus on ROA and ROE indicators.

The results obtained using multiple linear regression models are the most conclusive, the coefficient of determination (R^2) values can explain the percentage of variance in the dependent variables. Thus, the coefficient R^2 yielded better values for Germany (0.61 for ROA and 0.60 for ROE) compared to South Africa (0.49 for ROA and 0.47 for ROE) and Romania (0.59 for ROA and 0.65 for ROE). This trend suggests that human capital information has a stronger impact on financial performance in Germany than in the other two countries analyzed.

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