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## Article

# An empirical analysis of corporate social responsibility effects on financial performance for Romanian listed companies

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## AN EMPIRICAL ANALYSIS OF CORPORATE SOCIAL RESPONSIBILITY EFFECTS ON FINANCIAL PERFORMANCE FOR ROMANIAN LISTED COMPANIES

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### Abstract

The focus on corporate social responsibility (CSR) becomes central all over the world, being influenced by various factors, such as economic and employment crisis, fiscal issues, increasing competition, but also the interaction of environmental and social components with the economic performance. Moreover, the occurrence of new trends in circular and bio-economy lead to a social responsible behaviour of the companies, in spite of the downsize in terms of short-term performance. As such, this study assesses the interaction between social performance, as shaped by CSR measures, and companies' economic and financial performance. In order to assess the social performance, we define a CSR index and for financial performance, we use various accounting and market indicators. The analysis used data for 61 companies listed on Bucharest Stock Exchange for 2015-2017 timeframe, and the analysis was conducted using panel data regressions. We believe that the obtained results are explained by the companies' focus, especially the ones with solid financial status, on the implementation of measures that are associated with bio-economy, targeting a reduced environmental impact, and with social programs and activities. This research also emphasizes some issues for the listed companies on the Bucharest Stock Exchange, but also for other stakeholders.

**Keywords:** financial performance, corporate social responsibility, capital market, bioeconomy

**JEL classification:** O12, O16, Q56, Q57, C23

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## Introduction

In a world characterized by globalisation, increased competition on the labour and natural resources markets, financial crises, migration or global warming, environmental and social components should progressively turn into market standards. The companies should consider in their development strategies the environmental and social issues, as they would become differentiating competitive advantage, increasing economic and financial attractiveness, as well as the living standards.

In this context, the social responsibility issue remains an actual one, for all the actors involved: managers, shareholders, civil society, non-governmental organizations, administrative decision makers or Academia. Even though this concept is complementary to other concepts (such as sustainable development, social economy etc.), its main focus is on the fact that a company should be considered as a social institution, that is social responsible.

The CSR concept unifies different themes and ideas, depending on its development stage, including work conditions, environmental aspects, sustainable development and social relations, social companies, economic performance and social performance etc.

Most of the time managers are criticized for pursuing rather maximization of the firm's value, than giving any consideration to the impact of their companies' activities on the environment or social landscape. According to Buchholz (1996), as a general perception within the society, the economic performance is not necessarily connected to social welfare and does not necessarily lead to social progress. As such, the CSR appears as a need to define new economic, social or environmental rules that may lead to positive effects on the society.

According to the European Union (2001), CSR recommends corporations to consider the environmental and social issues in developing their operations. Hirigoyen and Poulain-Rehm (2015) assert that this integration should be seen in all relations and activities of those involved (clients, employees, commercial partners, government, non-governmental organizations etc.), as it may offer companies a unique role on the market, becoming a competitive advantage (Porter and Kramer, 2006; Branco and Rodrigues, 2006).

In the same context, Moratis (2018) asserts that the financial and non-financial reporting, adoption of voluntary standards in environmental and social issues, codes of conduct, can be considered expression of a company's will. However, the companies are involved not only in achieving sustainable development objectives, but also consider CSR as a mean to increase their market value and, implicitly, shareholders' wealth. Therefore, the companies will use different strategies in order to prove their social responsibility and to improve their reputation on the market (Bhattacharya and Sen, 2004).

Considering that CSR is a multi-dimensional approach, defining performance not only in terms of economic and financial efficiency, but also as a sustainable management requirement based on reshaping the strategies (Hirigoyen and Poulain-Rehm, 2015), and understanding that the investors are becoming more interested not only in the financial reports, but also understand that the business success is determined also by its sustainability from an environmental point of view (Unruh et al., 2016). In the same context, this study aims to assess the impact of the CSR activities on the financial performance of the selected companies. Moreover, as the investors, asset managers, shareholders and stakeholders,

consider CSR, the study considered listed Romanian companies, traded on the Bucharest Stock Exchange.

To this purpose, we develop a CSR index that evaluates the companies' degree of conformity with the CSR principles. The assessment of the interaction of various indicators of financial performance and CSR was made using panel data regression models. Some of the indicators of financial performance were computed using accounting data and others using market data.

This article contains three sections, an introduction and a conclusions section. The introduction is followed by the literature review section for the analysed topic; the second section presents the research methodology and the proposed model. The analysis, considering the regression models, is included in the third section that is followed by conclusions and recommendations.

### **1. Literature review**

The interest for CSR has been strengthened by the economic crisis and irresponsible business practices (ENRON, Nike, etc) from the 2000's. The CSR concept started as a political and academic term, becoming a powerful concept in economic world.

Cooperation between international and national organizations regarding CSR lead to a harmonization of various points of view regarding practical implementation of the OECD guidelines. Schneider (2012) asserts that, starting from some aspects of CSR, the OECD and UN instruments were updated, being recognised by the RSC referential. As in the 1950-1960, the CSR concept was considering the philanthropic actions and in the '70s-'80s on regulation, starting with the '90s the focus is on strategies and instruments (Hamidu, Haron and Amran, 2015). As Friedman (1970) considered that CSR is focused only on profit, other researchers asserted that this concept is a wider one, being influenced by individuals' perceptions.

As the analysed concept is not a static one, but a dynamic and contextually changing one, a simple definition is difficult. Dahlsrud (2008) showed that there are 37 different definitions of this concept, a fact that emphasizes the lack of consensus regarding its dimension and the difficulty to measure the CSR impact on firms and Tschopp and Nastanski (2014) assert that the lack of standardization in CSR reporting lead to difficulties in measuring non-financial information.

As Carroll (1979) considers that CSR has an economic, legal, ethical, as well as discretionary dimensions, Frederick (1994) emphasizes that the main idea of this concept is that the firm has obligations towards the society, to participate to improving social welfare. McComb (2002) asserts that CSR is only a company's philosophy, as a component of its strategy. Vilanova Pichot (2007) propose that CSR be grouped into five dimensions that represent: the vision (ethical codes, reputation etc.), community relations (philanthropic actions, relations with involved parties etc.), labour market (human rights etc.), responsibility (transparency, reporting etc.) and market (research and development, prices, investments etc.).

Considering this, we consider that a better firm-level CSR strategy and organizational framework may lead to positive effects in the labour force and productivity, clients and

suppliers, shareholders, relations with governmental organizations or community, improving their perception on firm's performance.

Correlations between CSR activities and financial performance were analysed since 1980s, being considered the return on equity and return on assets (Freedman and Jaggi, 1982; Chen and Metcalf, 1980; McGuire, Sundgren and Schneeweis, 1988). The analysis were widened considering some other indicators, such as earnings per share, sales per share, Tobin's Q ratio, added value, return of holding shares or market capitalization.

Brigham and Houston (2014) classified the most common indicators for performance that were used in various studies, in liquidity ratios, return on assets, leverage ratio, profit ratios and ratios computed at market values. In line with this approach, our study considers return on assets, return on equity, and earnings per share, market capitalization, return and equity.

The empirical literature that studies the correlation of CSR and financial performance is abundant, but there is no consensus. Some reveal a positive correlation between CSR and financial performance (Jiang and Yang, 2015; Stekelenburg et al., 2015; Choi, Kwak and Chongwoo, 2010, Wu, 2006; Orlitzky, 2001), others define a negative relation (Simionescu and Gherghina, 2014; Wagner, 2005; Taşkın, 2015), and some others argue a neutral relation (Griffin and Mahon, 1997; Iqbal et al., 2012; Graves and Waddock, 1999). Nelling and Webb (2009) reveal that the stock market performance influences CSR, but the financial performance is not influenced by the CSR activities.

These divergent results are given by various factors, such as different measurement of the considered variables, namely whether we assess the financial performance using accounting values (Graves and Waddock, 2000; Inoue and Lee, 2011), market values (Kang, Lee and Huh, 2010), or both (Wu and Shen, 2013; Khan et al., 2016), the social performance by secondary or perceptual data, using different methodologies for statistical data analysis, correlations, or control variables (Galant and Cadez, 2017).

Using two studies on South African companies, Chetty, Naidoo and Seetharam (2015) showed that there is a positive relation between CSR and long-time financial performance only when it is measured by earnings per share and a negative relation with return of equity. There are also studies that show a negative relation between CSR and earnings per share (Masoud and Halaseh, 2017, using data for Jordan, in 2002-2011 timeframe).

As Cormier and Gordon (2001) assert that the companies' strategic reporting are affected by the capital market risks and the companies' size, Gamerschlag, Möller and Verbeeten (2011) considers that the existence of sustainability aspects in the reports is influenced by the firm's visibility in the market. Chiu and Wang (2015) and Wuttichindanon (2017) reveal that not performance is the one that influences the inclusion of CSR data in the reports, but shareholders' decision, which consider that these information impact company's market value and market share. The same idea is supported also by KPMG (2015), which emphasizes that it is important for the shareholders to understand opportunities and risks and, as the stock market exchanges and governments require dissemination of CSR data within the annual official reports, the non-financial reports become compulsory.

Starting from a European Union study, Schimanski (2013) showed that the European policy regarding CSR might need to be enhanced in order to attain the proposed objectives. The research reveals that, considering public available data for 200 random chosen companies,

68% of them contains CSR references or an equivalent term, and 33% envisage the European Commission's recommendations, considering the ISO 26000 standard, or the OECD guidelines or the United Nations Global Compact. Moratis (2018) has a critical view on ISO 26000, asserting that the companies that adhere to this standard give signals that, instead of improving attractiveness for interested parties, come to the opposite effect. But implementation of this standard, according to Smeureanu et al. (2011), may help companies to increase clients' satisfaction and not only to focus on economic performance, but also on social performance.

A factor that inhibits the implementation of the ISO 26000 standard is that it is not certifiable. Some companies consider that applying this standard may lead to dissemination of data to potential competitors that may negatively affect the firms' operations (Avila et al., 2013). Another inhibitor, for small companies, is that this standard is complex and resource demanding (Hemphill, 2013), and a more favourable and less stricter requirements may lead to a higher degree of conformity (Castka and Corbett, 2016). Even though the use is voluntary, a study conducted by KPMG (2017) revealed that, considering the largest 100 companies from 49 countries (including Romania), 39% included sustainable development goals in their reporting. This situation is also emphasized by Castka and Balzarova (2008), which consider that the standard will be easily passed in countries where there governmental support and where the companies have already integrated other international management standards and systems.

## **2. Research methodology**

In this article, we analyse the existence of a relation between social performance, as defined by measures of CSR, and companies' economic and financial performance. We used the definition proposed by Wartick and Cochran (1985) for social performance, according to which CSR is the interaction between the principles of social responsibility, social involvement and policies adopted for solving social issues. The main objective of the article is to emphasize the existing relations between the CSR measures implemented at firm level for the Romanian listed companies (that are traded at the Bucharest Stock Exchange) and the improvements in financial performance of analysed companies. Therefore, we used data for 61 listed companies from the Bucharest Stock Exchange, for the period 2015-2017, from diversified economic sectors. Out of 25 companies that are included in the Premium category of the Bucharest Stock Exchange, we considered 22 companies (we excluded Fondul Proprietatea, which had no employees during the analysed period, as well as Medlife and Sphera Francise Group, for which sufficient data were not available). From the 57 companies included in the Standard category, we considered a number of 39 companies, as for 18 of them we had not identified relevant data or some of them are in various steps of restructuring, insolvency or the bankruptcy procedure was initiated.

In order to assess the degree of conformity with the CSR concept, we define a CSR index, using data provided by the annual reports and, where available, Non-financial reports, that were made according to the provisions of the Ministry of Finance Order no.1938/17.08.2016, regarding the change of some accounting policies, that was implemented since January 1st, 2017.

The list of considered factors was adapted after Fiori, di Donato and Izzo, (2007) and it contains 13 social performance indicators and 10 environmental indicators, as can be seen from Table no. 1.

**Table no. 1: The considered social performance and environmental indicators**

Social performance indicators	Decent working conditions	Employment information	Environmental performance indicators	Energy use efficiency
		Labour/management relations		Water use efficiency
		Health and safety		Toxic release inventory
		Training and education		Other discharges
		Diversity and opportunity		Greenhouse gas emissions
	Human rights	Strategy and management		Other air emissions
		Non-discrimination		Environmental impacts of products and services
		Freedom of association and collective bargaining		Land and resources use biodiversity
	Society	Community		Compliance performance
		Updated dedicated website		Waste generation and management
		Bribery and corruption		
	Product responsibility	Products and services		
		Customer health and safety		

Source: own adaptation after Fiori, di Donato and Izzo, 2007

For each indicator (except the one regarding the existence of a website) we allocate a maxim number of 3 points, according to the degree of complexity of related data from the annual reports and Non-financial report. We consider 0 points when there are no references to the indicator, 1 point when it is only named in the reports (without any other details) and 2 points whether there is a short description of the way the company conformed with it. The maximum number of points is 3 was considered for the situations where the data sources contained adequate details and information. For the indicator related to the existence of a website, we give 0 points whether there is no such a site or section of the company's website, 1.5 points when the provided information is general (without any examples from the analysed year) and 3 points (when there were presented, in extensor, projects and measures associated with CSR activities). The maximum number of points for a company is 78. By adding the number of points for each indicator, we define the CSR index, as a measure to assess the way the companies are implementing the CSR principles. Starting from this, we defined a CSR index, which assesses the results of the analysed companies in implementing CSR principles. The obtained results show high values for large size companies with large turnover and number of employees (exceeding 50 points), and the minimum of 9 was reached by some companies acting in the financial field.

In order to assess the financial performance, we considered the total assets, equity, turnover, and earnings per share, return on assets, return on equity, return per share, year-end market capitalization and average number of employees. Using these values, we computed the logarithmic values for total assets (L\_ASSETS variable), equity – LOG(EQUITY) variable, market capitalization – LOG(MK\_CAP) variable and turnover – LOG(SALES) variable, but also the sales growth – SALES\_GR variable. We denoted by WRK the average number of employees during a year and SALES\_SHA is the variable that

indicates the sales per share for each company. We considered the logarithmic values for the total assets, market capitalization, sales and equity, in order to reduce the influence these values have on the analysis, as these values have significant different size than the other variables. Moreover, we opted for the logarithmic values, as the obtained variables are much closer to the normal distribution (the impact of large spread of the selected variables, as can be seen from table no. 2, being, therefore, limited).

**Table no. 2: The list of used variables and main statistical characteristics**

Name	Meaning	Min	Max	Medie	St.dev.
CSR	The CSR index	8	69	26.31967	14.92905
L_ASSETS	The logarithmic value of total assets	16.23376	24.80591	19.80041	1.887373
LOG(Equity)	The logarithmic value of equity	15.96328	24.03964	19.28711	1.763185
LOG(MK_C AP)	The logarithmic value of market capitalization	15.25081	23.52218	18.85579	1.995984
LOG_SALES	The logarithmic value of sales	15.26823	23.41551	18.80960	1.733671
SALES_GR	Sales growth	-0.923899	1.608929	0.037409	0.265585
WRK	Average number of employees	1	15581	1170.241	2353.858
SALES_SHA	Sales per share	0.030217	152.8880	7.070948	21.29865

*Source: Authors' adaptation, using data collected from financial and non-financial reports of companies listed at the Bucharest Stock Exchange*

We started this analysis considering the hypothesis of existing relations between the variables that assess the financial performance indicators and the defined CSR index, as a proxy for the CSR stance. Therefore, we considered the following research hypothesis:

H<sub>1</sub>: The size of equity has a **positive influence** on the degree of conformity with the CSR recommendations;

H<sub>2</sub>: The size of market capitalization has a **positive influence** on the degree of conformity with the CSR principles;

H<sub>3</sub>: The degree of conformity with the CSR recommendations has a **positive influence** on return on equity;

H<sub>4</sub>: The degree of conformity with the CSR recommendations has a **positive influence** on return of assets;

H<sub>5</sub>: The degree of conformity with the CSR principles has a **negative influence** on earnings per share.

In developing the H<sub>1</sub> and H<sub>2</sub> hypothesis, we started from the empirical observations according to which strong financial companies (as revealed by the existence of positive net equity) and attractive companies for investors (as revealed by the market capitalization) have an emphasis on the CSR principles, being involved in large projects with social and environmental impact (these assumptions being similar to the ones developed by some other studies, such as described in the previous section). Regarding the relation between the CSR recommendations and financial performances (measured by return on equity and



return on assets), as it is presented in H<sub>3</sub> and H<sub>4</sub> hypothesis, we considered the existence of a positive relationship between these variables, as the CSR implementation measures imply the use of more efficient technologies, with reduced costs and externalities (as an effect of more environmental and community friendly technologies). However, the process of implementation of CSR recommendations may lead to a short-term increase in costs and reduced earnings per share, as it is expressed in H<sub>5</sub> hypothesis.

In order to study these relations, we use the model proposed by Schmidheiny (2016):

$$y_{it} = \alpha + X'_{it}\beta + \mu_i + \vartheta_{it} \quad i=1, \dots, N; t=1, \dots, T \quad (1)$$

where

$i$ = cross-section dimension (transversal section);

$t$ =time (time series dimension);

$\alpha, \beta$ = the equation's coefficients;

$X'_{it}$ = the  $it$  observation of the explaining variables;

$\mu_i$ = individual effect;

$\vartheta_{it}$ = residual.

In order to find the appropriate model for the proposed regressions, considering the analysed data, we use Hausman test, according to which the null hypothesis is that the random effect model is appropriate and the alternate hypothesis is that the fixed effect model is appropriate.

### 3. Results and discussions

We estimate the interaction between the financial performance measures and the degree of conformity with the CSR principles, as is assessed by the CSR index, using panel data regression models. As such, we considered a model where the dependent variable is CSR and the independent variables are LOG(EQUITY), LOG(SALES), L\_ASSETS, LOG(MK\_CAP) and WRK, the results being presented in table no. 3. The relation between the endogenous and exogenous variables is derived from a fixed effect model (as it is shown by the results of the Hausman test), considering the results presented in the first part of table no.3. The choice for the development of such a model was based on the empirical observations regarding the improvement of the conformity with the CSR recommendations, as the analysed companies are larger (considering equity, assets, market capitalization and sales, as well as the inputs, mainly the labour force). Starting from these data, we tested the presence of endogeneity in the model, the obtained results (as the independent variable considered is the one expressing the equity) showing the rejection of this hypothesis (for the other considered variables, the tests may be the starting points for new researches).

According to this model, we found a positive relation between the degree of conformity with the CSR principles and measures of financial performance (such as increased market value, total assets and equity for the analysed companies). This result confirms the empirical observations regarding the positive relation between the size of a company and the investor's perception, on one hand, and its orientation towards the CSR issues. Therefore, from Table no.3, we may see that the size of equity has a positive impact on the degree of conformity, a result that validates H<sub>1</sub> hypothesis. For example, an increase in

equity may lead to an increase in the dependent variable CSR, showing a better financial and social performance.

**Table no. 3: The proposed model for CSR variable, considering five independent variables (2015-2017 time frame)**

Correlated Random Effects – Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		25.076576	5	0.0001
Dependent variable	Independent variable	Coefficient	Prob.	R-squared
CSR	LOG(EQUITY)	10.68362	0.0155	0.916039
	WRK	0.000743	0.7926	
	LOG(MK_CAP)	4.629405	0.0123	
	L_ASSETS	2.943052	0.2572	
	LOG(SALES)	-2.710163	0.3368	

Using this model, we observe that an increase of market capitalization will lead to an increase in CSR index, a positive relation that is statistically significant (a result that validates H<sub>2</sub> hypothesis). This relation confirms the empirical data and expectations, as it is explained by the analysed companies' orientation towards development and implementation of technological solutions associated with the bio-economy concept (aiming to drastically reduce the negative impact on the environment). Moreover, analysing the data for the companies that are listed at the Bucharest Stock Exchange, we may observe that, as the market capitalization increases (as is the case for companies from mining and quarrying sectors or electricity and gas energy), their management is prone to consider the conformity with the CSR recommendations and to implement business mechanisms that are circumscribed to bio-economy concept and ISO 26000 standard. A statistically not significant impact is given by the total assets for the analysed companies, the corresponding coefficient being positive.

In order to estimate the impact induced by measures adopted for implementation of CSR concept on the financial performance of the analysed companies, we considered CSR variable as being independent variable, in panel data regression models, where the dependent variable is different measures of financial performance. The choice for this model was made considering some other studies, such as Jiang and Yang, 2015; Stekelenburg et al., 2015; Choi, Kwak and Chongwoo 2010; Orlitzky, 2001; Dumitrescu and Simionescu, 2015. In order to verify H<sub>3</sub> hypothesis, in table no. 4 are presented the results for a regression model where the dependent variable is ROE and the independent variables are CSR index, logarithmic values for total assets and market capitalization, sales growth and average number of employees.

**Table no. 4: The proposed models for ROE and ROA variables, considering five independent variables (2015-2017 period)**

Dependent variable <b>ROE</b>				Dependent variable <b>ROA</b>			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.1928	5	0.0041	Cross-section random	56.1295	5	0.0000
Independent variable	Coefficient	Prob.	R-squared	Independent variable	Coefficient	Prob.	R-squared
CSR	0.03861	0.6640	0.8131	CSR	0.03189	0.6279	0.7495
L_ASSETS	-1.02335	0.6878		L_ASSETS	-15.7242	0.0000	
SALES_GR	6.51212	0.0005		SALES_GR	3.33307	0.0151	
WRK	-0.00999	0.0007		WRK	-0.00532	0.0133	
LOG(MK_CAP)	3.04390	0.0703		LOG(MK_CAP)	3.76684	0.0028	

Using Hausman criteria, the fixed effect model is appropriate, as the associated probability for the null hypothesis is below the threshold of 5%, as it can be seen from the upper part of the table. Analysing data presented in table no. 4, we observe a positive relationship between the CSR index and return on equity for the considered companies (although the coefficient for the independent variable is not statistically significant), a result that confirms  $H_3$  hypothesis, previous researches and empirical observations.

In order to test  $H_4$  hypothesis, we used a model where the dependent variable is ROA, and the obtained results are presented in table no. 4. We obtained that the coefficient value for independent variable CSR is positive (but not statistically significant), emphasizing the existence of a positive relation between the considered variables (and, therefore, the  $H_4$  hypothesis is validated). This situation is due by the incipient stage of implementation process of measures aimed to realize the transition from the conventional economy towards bio-economy and environment protection, as mechanisms that may enhance the companies' conformity with the CSR concept. We may also observe that all other independent variables have statistically significant coefficients, with same signs as those from the proposed model having ROE as dependent variable.

In table no. 5 there are presented the results of the regression model where the dependent variable is earnings per share (EPS) and the independent variables are CSR index, equity, and sales per share, average number of employees and logarithmic value of market capitalization. Using the Hausman test, the random effect model is appropriate, considering the selected variables. From this model, we can observe the existence of a negative relation between the CSR index and earnings per share, a result that confirms  $H_5$  hypothesis, as well as some other studies (Masoud and Halaseh, 2017). This relation is explained by the characteristics of the CSR activities, mainly those associated with circular economy and bio-economy, which implies a large period from the designing of the adequate solution to

their implementation (defining the technologies, registration of patents, practical validation of prototypes, in order to reduce the impact on environment) and increasing short-term pressure on costs.

**Table no. 5: The proposed model for EPS variable, considering five independent variables (2015-2017 period)**

Correlated Random Effects – Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		3.801767	5	0.5783
Dependent variable	Independent variable	Coefficient	Prob.	R-squared
EPS	CSR	-0.011008	0.3449	0.645845
	EQUITY	3.63E-11	0.7907	
	SALES_SHA	0.257298	0.0000	
	WRK	-6.42E-05	0.7662	
	LOG(MK_CAP)	0.353305	0.0398	

These results are also obtained by previous studies, such as Dumitrescu and Simionescu (2015) (that emphasized the impact on economic performance), and Buşu and Buşu (2019) (that stressed the relation between measures of economic performance, such as labour and resource productivity, on sustainable development). However, the negative relation between the CSR index and earnings per share reveals the necessity of devising adequate strategies for analysed companies' conversion towards a bio-economy business model, in order to cope with the anticipated negative effects.

## Conclusions

Using data for 61 listed companies from the Bucharest Stock Exchange, for the period 2015-2017, we analysed the existence of some relations between the measures of CSR and financial and economic performance for representative Romanian companies. As such, we define a CSR index, using 13 social performance indicators and 10 environmental performance indicators that was used to find the relations with measures of financial and economic performance. Therefore, we found a positive relation between the CSR index (on one hand) and equity and market capitalization (on the other hand). We also identified the existence of a positive relation between the CSR index and return on equity and return on assets, as it was previously found for other countries (Jiang and Yang, 2015; Stekelenburg et al., 2015; Choi, Kwak and Chongwoo, 2010). The obtained results confirmed the considered hypothesis, according to which there is a positive relation between measures associated to the transition towards the bio-economy concept, by implementing CSR principles, and some indicators of financial and economic performance (such as return on assets and return on equity). The performance indicators give information for companies in order to change the policies used at firm-level (investments, increasing turnover, acquisitions etc.), towards bio-economy, as an activity based on knowledge and sustainable use of financial, human and social resources. This objective may be achieved by using innovation, knowledge and ecological technologies in order to make goods and services in a sustainable economy (Communiqué Global Bioeconomy Summit, 2018). Considering worldwide competition, the success may be achieved not only by efficiently using the resources, but also on the CSR actions, such that the companies' operations to be aligned

with the European Union's priorities associated to bio-economy (EC, 2018), leading to an increase in ecological employment.

The obtained results are of importance for a large spectrum of interested parties, from companies to public authorities (local, regional or national) that are involved in designing environment protection strategies, individual or institutional investors to non-governmental organizations. Such that, for Romanian companies, the study give a glimpse of an up-to-date status of conformity with CSR principles, as well as the issues related to this concept. Along the identified issues, it is worth noting the negative relationship between CSR measures and earnings per share or return, that emphasize the need to elaborate an adequate strategy for the transition towards bio-economy, such that the temporary shocks to be absorbed by the newly used technologies. This study is of importance also for supervision authorities (those involved in the supervision of the economic fields where the analysed companies operate, as well as those involved in environmental preservation), as the transition towards bio-economy lead to major structural changes in the technologies involved, with significant costs. Moreover, the investors may be interested in this study, as they may use the results to base their investment decisions, mainly those with a low environmental and social impact. With this study, the non-governmental organizations have an image of the degree of conformation of the Romanian listed companies with the CSR principles, a fact that is in the European Union's agenda, too.

A very abundant area of research may be in finding the impact of CSR measures on quality of life, reducing social inequalities and foster social inclusion. Considering the study's limits, regarding the relatively limited analysed time frame in order to reflect a large scale trend for CSR, lack of uniformity and reduced number of available data, a future research direction may be in expanding the set of analysed companies and the time frame, including also 2018, in order to capture actual evolution.

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