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## **Sustainable value creation: coherence of corporate social responsibility and performance of socially responsible investment funds**

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This article analyses the coherence of corporate social responsibility of companies and the performance of socially responsible funds, as such companies include elements of corporate social responsibility in their investment strategies and the funds tend to include more socially responsible companies in their portfolio. In addition, the ability of these variables to create sustainable value is considered. A methodology for the evaluation of sustainable performance of socially responsible investment funds is proposed in the article. The application of the proposed methodology reveals the importance of being responsible from the social and ecological standpoints and provides evidence of the existence of a relationship between these variables and value creation. The study shows that there exists a relationship between the sustainable performance of companies and the financial results of socially responsible investment funds. The investigation has proven that variables such as intellectual capital, social and ecological performances of companies have a major impact on the performances of socially responsible investment funds. It has been noticed that the method is sensitive to the availability of social and ecological performance information, which is represented by companies in their sustainability reports.

**Keywords:** sustainability; value creation; investment funds; corporate social responsibility; intellectual capital

**JEL classification:** G30, G32, M14

### **1. Introduction**

The importance of being socially responsible for actions that are taken was always a major concern for companies. Such business orientation as well as legislation followed by numerous embezzlement examples have evolved into sustainable development practices aiming to preserve social and ecological values along with financial and economic prosperity. Academics (Bagdonienė, Daunorienė, & Simanavičienė, 2011) observe that sustainable development can be achieved through the exercise of responsible approaches towards the external and internal environment and the continuous passing of information to all stakeholders about the actions that have been taken in order to achieve sustainable development goals. Therefore, sustainable development and corporate social responsibility seem to be truly interrelated concepts.

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The integration of corporate social responsibility into the daily practices of companies has stipulated the development of new investment practices, which are known as ethical or socially responsible. It involves incorporating non-financial criteria into screening and asset allocation processes. Thus, financial and non-financial criteria may contribute to the sustainability of investment process.

The aim of this article is to establish a link and provide evidence of coherence between the corporate social responsibility of companies and the sustainable performance of investment funds. A methodology is proposed for the evaluation of the sustainable performance of companies and the sustainable performance of socially responsible funds.

As a result of the application of the proposed methodology for sustainability measurement, the sustainable performance of both companies and funds is evaluated and the hypotheses give are proved.

## **2. Coherence of corporate social responsibility, socially responsible investment and sustainable value creation**

The importance of social responsibility in the corporate affairs and investment field has been investigated by academics (Blanchett, 2010; Coscarelli, Federico, & Notte, 2010; Koellner, Weber, Fenchel, & Scholz, 2005; Jessen, 2012; Kinder & Domini, 1997; Woods & Urwin, 2010). Undoubtedly, the subject-matter of SRI (Socially Responsible Investment) is linked to the corporate social responsibility of selected companies for the construction of investment portfolios.

There exists many definitions, such as ‘ethical’, ‘socially and ecologically responsible’, ‘responsible investment’, which try to grasp the essence of SRI, and unify financial and non-financial parameters into the investment process (Cowton, 2004; Nilsson, Nordvall, & Isberg, 2010; Plakys, 2009; Sandberg et al., 2009; Williams, 2007). The subject-matter of SRI determination differences has also been discussed by scholars (Sandberg et al., 2009; Sandberg & Cowton, 2004).

Academics (Blanchett, 2010; Coscarelli, Federico, & Notte, 2010; Kinder & Domini, 1997) have observed the common characteristics of SRI funds. First, such funds avoid investing in businesses that deal with tobacco, alcohol, gambling or military weapons. Thus, no investment is made in companies that deal with child labour or violate animal rights. As a rule, responsible investments include investing with companies that are willing to sustain the environment and safe working conditions, support the community and their employees, etc. Blanchett (2010) and Cowton (2004) tend to attribute such characteristics into SRI practice methods – i.e. avoidance and supportive methods. Moreover, Blanchett (2010), Sandberg and Cowton (2004) argue that there exists a third SRI practice technique. It arises when the investors, being the shareholders of a particular stock, try to influence the development of corporate social responsibility of the companies. Stankevičienė, Jasaitė, and Čepulytė (2012) examined the tight relationship between corporate social and financial performance. By adapting the model proposed by Surroca, Tribo, and Waddock (2010) the authors explain that CSR is concerned with moral values and the corporate behaviour of companies and is part of intangible assets of a company and its external environment. The essence of CSR is to act responsibly towards external and internal stakeholders, build reputation and create the business culture of social responsibility. More and more enterprises are committing to accountability by including the CRS report into their annual reports, which results in enhanced benevolence from external and internal stakeholders.

Koellner et al. (2005) proposes external and internal indicators that may help to evaluate the investment funds (Figure 1). This model perfectly describes the relationship between the companies, the corporate social responsibility and the performance of the funds. The authors observe the existence of internal drivers that correspond to the performance of the fund and external drivers that belong to the companies. Therefore, externally, there exist green innovation and corporate environmental management along with internal drivers such as a fund’s strategy, screening criteria and diligence of fund research. Moreover, the authors observe the potential outcomes of the internal and external interactions. The external outcomes of the external drivers are the social impact that can be obtained by companies as well as control of toxic emissions and energy efficiency. The internal outcomes of the internal drivers are the improvement of financial performance and portfolio composition. The interaction of both internal and external drivers and outcomes can be clearly observed.

Mill (2006) argues that there exists a relationship between the performance of SRI funds and corporate social responsibility. Mill stresses the attention given to financial performance of the SRI fund and its dependency on the corporate social and financial performances of portfolio companies, in other words funds that include elements of SCR in their investment strategies tend to include more socially responsible companies in their portfolio.

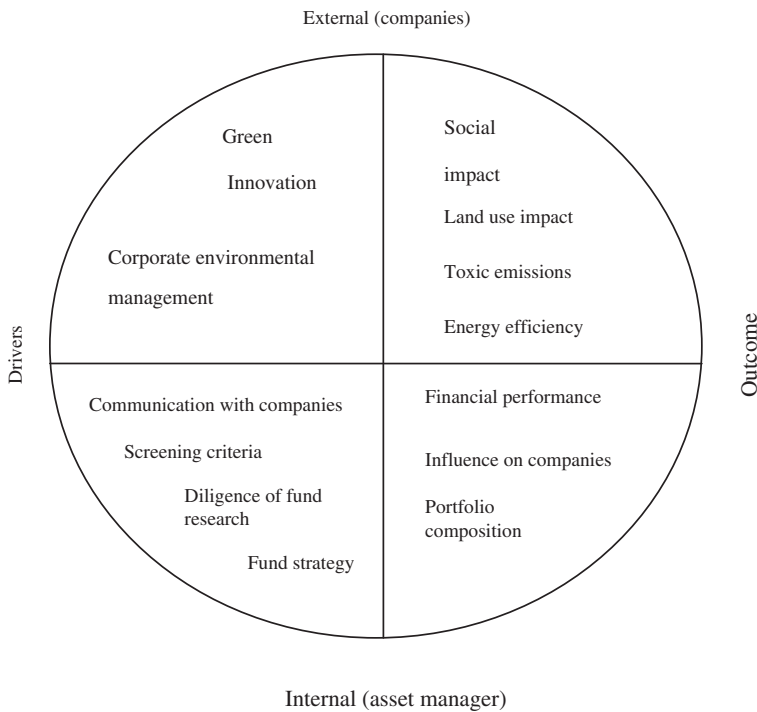


Figure 1. Relationship between corporate social performance and performance of the fund. Source: Koellner et al. (2005) Copyright © 2005 John Wiley & Sons, Ltd. and ERP Environment. Reproduced by permission of John Wiley & Sons, Ltd. Permission to reuse must be obtained from the rightsholder.

### 3. Research methods

Koellner et al. (2005) observe that pursuing sustainability goals is difficult because the existing sustainability measurement models provide information on financial criteria, while the performance of the sustainable part, such as social or ecological performance, remains unmeasured.

In this paper, sustainable value creation is interpreted from the standpoint of investment funds and companies that form the top holdings of these funds. The research evaluates the sustainable performance of individual companies. Thus, the obtained results are used in the evaluation of the sustainable performance of SRI funds. The research methodology is depicted in Figure 2. This viewpoint is supported by the findings of academics (Bianchi & Drew, 2012; King & Lenox, 2001; Koellner et al., 2005; Mill, 2006) where the sustainability performance of companies plays a significant role in the asset allocation process of investment funds.

Herein, the corporate social responsibility of a company is composed of the evaluation of financial, economic, intellectual capital, and environmental and social performance variables. CRS is the prerequisite of sustainability as a broader goal. Undoubtedly, these variables play a very important role for sustainability but, in order to sustain continuous development, the intellectual capital of the company also has to be taken into consideration.

The investment funds are selected from the Swedbank Robur ethical funds family – ‘Banco Etisk Europa’, ‘Ethica Balancerad’, ‘Ethica Försiktig’, ‘Ethica Sverige Global’, ‘Ethica Sverige Mega’, ‘Ethica Sverige’, ‘Humanfonden’, ‘Talenten Aktiefond Mega’. The fund reports are taken for the 30th June 2011. The selected funds and top five holdings are depicted in Table 1. The companies are evaluated by using the annual and sustainability reports for the year 2011.

The method proposed in the article can be easily implemented and therefore can be applied as a significant tool in investment decision-making for investors and this method may facilitate the asset allocation process of fund managers.

In order to prove the existence of the coherence of companies’ corporate social responsibility and the sustainable performance of SRI funds, hypothesis testing has been developed along with the supporting correlation analysis. The following hypotheses have been proposed.

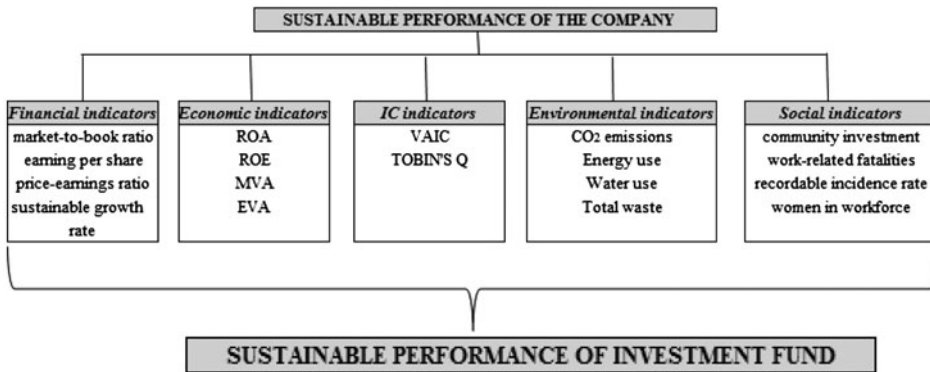


Figure 2. Sustainable value creation research methodology.  
Source: Author’s calculations.

Table 1. Composition of selected funds.

Fund name	Top 5 holdings of the fund	% of the fund	Fund name	Top 5 holdings of the fund	% of the fund	Fund name	Top 5 holdings of the fund	% of the fund
Banco Etisk Europa	Anglo American	4,1	Ethica Balancerad	H&M	2,7	Ethica Forskiting	H&M	1,1
	Vodafone	3,8		Nordea Bank	2,2		Nordea Bank	1,0
	BG Group	3,5		Ericsson	2,1		Ericsson	0,9
	Novartis	3,4		TeliaSonera	1,9		TeliaSonera	0,8
Ethica Sverige Global	Unilever	3,1	Ethica Sverige Mega	Atlas Copco	1,7	Ethica Sverige	Volvo	0,6
	Volvo	4,3		Volvo	8,3		H&M	9,8
	H&M	4,0		H&M	8,2		Ericsson	7,9
	Ericsson	3,9		Ericsson	8,0		Nordea Bank	7,5
Humanifonden	Nordea Bank	3,6	Talenten Aktiefond Mega	Nordea Bank	6,8	Volvo Teliasonera	Volvo	6,2
	Atlas Copco	2,8		Sandvik	5,4		Teliasonera	6,1
	Ericsson	9,8		Volvo	4,10			
	Volvo	9,2		Ericsson	4,00			
	H&M	8,0		H&M	4,00			
	Sandvik	6,3		Nordea Bank	3,60			
Nordea Bank	6,1	Atlas Copco	3,00					

Source: Swedbank Robur (2012).

**Hypothesis 1.** *The intellectual capital of the company has a relationship with the fund performance.*

**Hypothesis 2.** *The company's financial and economic performance has a relationship with the fund performance.*

**Hypothesis 3.** *The company's social and environmental performance has a relationship with the fund performance.*

**Hypothesis 4.** *The company's social performance has an influence on its financial performance.*

The fund performance variables chosen in this hypothesis testing are net asset value, fund capital, sale of fund units, redemption of units and risk.

### 3.1. Financial and economic indicators

The group of financial indicators includes calculation of market-to-book ratio, earnings per share, price-earnings ratio and sustainable growth rate.

$$\text{Book - to - market} = \text{book value of the firm} / \text{market value of the firm} \quad (1)$$

$$\text{Earnings per share} = (\text{net income} - \text{dividends on preferred stock}) / \text{average outstanding shares} \quad (2)$$

$$\text{Price - earnings ratio} = \text{market value per share} / \text{earnings per share} \quad (3)$$

Reilly and Brown (2011) observe that sustainable growth rate is a measure of the potential to grow for a company, implying the ability to pay obligations and indicating possibilities for future success.

$$g = \text{percentage of earning retained} \times \text{ROE} \\ = (1 - \text{dividends declared} / \text{operating income after taxes}) \times \text{ROE} \quad (4)$$

The group of economic indicators involves estimation of return on assets (ROA), return on equity (ROE), market value added (MVA) and economic value added (EVA).

ROA can be calculated by dividing net income to total assets. Therefore, ROE is obtained by dividing net income to equity.

Wibowo and Berasategui (2008) explain that if MVA value is greater than 0, then the investment has a potential to generate a considerable amount of value in order to cover investment costs. If MVA is less than 0, then the investment is unable to generate enough value to cover invested capital expenses. Petravičius (2008); Wibowo and Berasategui (2008); Stankevičienė, Jasaitė, and Čepulytė (2012), Stankevičienė and Čepulytė (2012) propose the formula for calculation of MVA:

$$\text{MVA} = \text{Capitalisation} - \text{Invested Capital} \quad (5)$$

Wibowo and Berasategui (2008), Stankevičienė, Jasaitė, and Čepulytė (2012), Stankevičienė and Čepulytė (2012) observe that positive EVA indicates the value creation ability of the company and point out that EVA can be calculated:

$$\text{EVA} = \text{NOPAT} - \text{WACC} * \text{CAPITAL EMPLOYED} \quad (6)$$

where *NOPAT* denotes net operating income after tax, and *WACC* is weighted average cost of capital.

### 3.2. Intellectual Capital (IC) indicators

According to some academics (Barros et al., 2010; Kujansivu & Lönnqvist, 2007; Makki & Lodhi, 2009; Muhammad & Ismail, 2009; Murale, Jayaraj, & Ashrafali, 2010; Rehman, Ilyas, & Rehman 2011; Stankevičienė, Jasaitė, & Čepulytė, 2012; Stankevičienė & Čepulytė, 2012; Zeghal & Maaloul, 2010; Znakovaitė & Pabedinskaitė, 2010), the calculation of VAIC is performed in several steps:

Step 1. Value added:

$$VA = P + C + D + A \quad (7)$$

where  $P$  is operating profits;  $C$  employee costs, equal to the sum of salaries and social insurance payments of employees;  $D$  depreciation, and  $A$  amortisation.

Step 2. Structural capital:

$$SC = VA - HC \quad (8)$$

where  $HC$ , human capital equal to the sum of total salaries of the company.

Step 3. Capital employed efficiency:

$$CEE = VA / CE \quad (9)$$

where  $CE$  is capital employed, equal to the difference between total assets and current liabilities.

Step 4. Human capital efficiency:

$$HCE = VA / HC \quad (10)$$

Step 5. Structural capital efficiency:

$$SCE = SC / VA \quad (11)$$

Step 6. Intellectual capital efficiency:

$$ICE = HCE + SCE \quad (12)$$

Step 7.

$$VAIC = ICE + CEE \quad (13)$$

In this research, VAIC can be applied for estimation of efficiency of intellectual capital, as proposed by Kujansivu and Lönnqvist (2007), Stankevičienė, Jasaitė, and Čepulytė (2012), Stankevičienė and Čepulytė (2012).

Stankevičienė, Jasaitė, and Čepulytė (2012), Stankevičienė and Čepulytė (2012), King and Lenox (2001) observe that Tobin's  $q$  can be used as a measure of shareholder value creation and can be calculated in the following way:

$$Tobin's q = (Capitalisation + Preferred Stock + DEBT) / TA \quad (14)$$

where  $DEBT$  is the difference between short-term liabilities and short-term assets plus book value of long-term debt;  $TA$  is total assets.

### 3.3. Environmental and social performance indicators

Environmental performance of the company is evaluated by taking into consideration carbon dioxide (CO<sub>2</sub>) emissions, water and energy use, and total waste generated by the company.



Social performance is estimated by taking into account community or corporate social responsibility investment, number of work-related fatalities, recordable incidence rate and percentage of women in the workforce.

All necessary data for these indicators are taken from annual and corporate social responsibility reports. As the necessary data are obtained as plain numbers, the MOORA technique (Kildiene, 2013; Kracka & Zavadskas, 2013; Zeng, Balezentis, & Su, 2013) was applied in order to give corresponding weights to the obtained values. The MOORA technique is depicted in Figure 3.

In order to calculate MOORA, it is necessary to collect raw data, which will correspond to specified objectives. When the raw data are collected then the matrix of responses is created. The following steps in the MOORA application are a creation of ratio system and calculation of a reference point.

In this research, there a ratio system of the MOORA method has been used. According to Brauers and Zavadskas (2012), and Brauers (2012), one of MOORA’s ratios can be calculated by using the expression:

$$x_{ij} = \frac{x_{ij}}{\sqrt{\sum_{j=1}^m x_{ij}^2}} \tag{15}$$

where  $x_{ij}$  is the response of alternative  $j$  on objective  $i$ ;  $j$  is the number of alternatives,  $i$  the number of objectives.

This technique helped us to give weights to corresponding values and generate average social and ecologic indicators by company. Such a system of weights was also applied to the values obtained from calculation of EVA, MVA and value added.

### 3.4. Sustainable performance of the investment fund

The method for calculation of sustainable performance of the investment fund is proposed by Koellner et al., (2005). The authors suggest that the sustainability efficiency of the investment fund can be calculated by dividing the sustainability performance of the fund into functional units, which is the financial return for the one year. Academics also observe that aggregation can be applied to the assessment of sustainability performance. In this case, it can be calculated as the weighted sum of individual indicators.

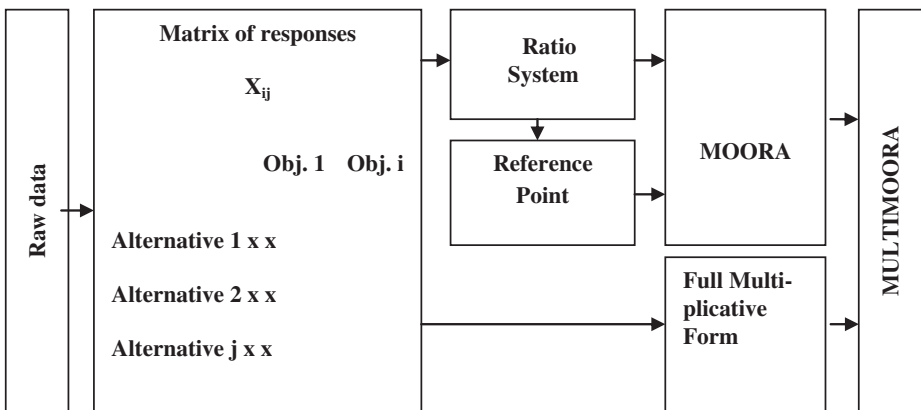


Figure 3. Diagram of MOORA and MULTIMOORA.  
Source: Brauers and Zavadskas (2012).

Some modifications to Koellner's et al. (2005) calculation method have taken place:

$$SE_j = \frac{\sum_{i=1}^n w_i p_i}{NAV} \quad (16)$$

where  $w_i$  is the percentage of the company of the top holding of the fund;  $p_s$  is the weight of the sustainability criterion;  $NAV$  is the net asset value of the fund for the specified point in time;  $n$  is the number of sustainability criteria;  $SE_j$  is the sustainability efficiency of the fund  $j$ .

According to this modification, the evaluation of sustainability performance is aggregated and the functional unit is replaced by the application of  $NAV$ . This modification helps to get a clear picture of the sustainable performance of companies for the financial year and to obtain the value of the sustainable performance of the fund for a specific point in time.

### 3.5. Results and discussion

The studies on corporate social responsibility are qualitative rather than quantitative; therefore, empirical evidence about the financial returns of socially responsible companies is vague. Academics have attempted to bring together quantitative evidence of the coherence of CSR with the financial performance of firms. Stankevičienė, Jasaitė, and Čepulytė (2012) conducted a study of Nasdaq-OMX-Vilnius listed companies and discovered that there is no indication that companies with high corporate social responsibility performance would have higher average ROA or ROE than companies with low corporate social responsibility performance. Despite that, it has been shown that among the leading companies in financial performance indicators there are always companies with high corporate social responsibility performance. Callan and Thomas (2009) have proved that there exists a positive relationship between corporate responsibility and financial performance of the company. Bramer and Millington (2008) observe that corporate social responsibility has a positive impact on financial performance in the long-run and when the goals and decision-making are based on corporate social responsibility. May and Khare (2008) have tested Canadian companies and have also found a positive relationship between variables. Orlitzky, Schmidt, and Rynes (2003) have conducted a meta-analysis that also revealed the positive relationship between the corporate social responsibility and financial performance of the company.

The results of the current study are depicted in Tables 2 and 3. According to the results obtained, the companies that showed the best social and environmental performance are Anglo American, Vodafone, Novartis and Telia Soniera. In addition, Unilever and Nordea Bank showed improved social performance compared with previous results. Companies that have both higher social and ecological performances have improved human, and intellectual capital efficiencies and therefore obtained higher VAIC coefficients. Such companies also have better financial and economic performances.

On the other hand, companies with high social performance have improved shareholder value creation abilities as measured by Tobin's  $q$ , and also have improved financial results.

The supporting correlation analysis revealed that social performance has an influence on capital employed efficiency (−0.68), MVA (−0.52) and EVA (0.52). Therefore, ecological performance has an influence on capital employed efficiency (−0.63), structural capital efficiency (0.52) and EVA (0.55).

Table 2. Results of sustainability measurement.

Company	VA	CEE	HCE	SCE	ICE	VAIC	Tobin's Q	MVA
Anglo American	0.2419	0.0857	1.6456	0.3923	2.0379	2.1236	-0.1272	-0.0582
Vodafone	0.6235	0.0928	3.8912	0.7430	4.6342	4.7300	1.4124	-0.1524
BG Group	0.1364	0.0553	4.7828	0.7909	5.5737	5.6290	-0.2403	-0.0343
Novartis	0.2404	0.0728	6.0228	0.8340	6.8568	6.9300	2.2013	0.1606
Unilever	0.2982	0.2165	1.3889	0.2800	1.6689	1.8900	2.6684	0.1186
H&M	0.1169	0.4798	1.4534	0.3119	1.7653	2.2500	6.2320	0.7432
Nordea Bank	0.1528	0.1265	1.4097	0.2906	1.7003	1.8300	2.3372	-0.0028
Ericsson	0.3641	0.3702	1.5528	0.3560	1.9088	2.2790	2.0114	0.4581
TeliaSonera	0.1331	0.1151	2.4881	0.5981	3.0862	3.2000	1.4614	0.0165
Atlas Copco	0.0989	0.3702	1.4617	0.3159	1.7776	2.1478	3.2871	0.0302
Volvo	0.4373	0.3890	2.2009	0.5456	2.7465	3.1400	1.8177	0.4108
Sandvik	0.1496	0.4130	1.4784	0.3236	1.8020	2.2200	2.2204	0.0139

Source: Author's calculations.

The results of the calculation of sustainable performance of investment funds are depicted in Table 4. According to the obtained results, the best performance is 'Talenten Aktiefond Mega', while the least is of 'Ethica Balanserad' and 'Ethica Svergie'.

The applied evaluation method of the sustainable performance of investment funds is very sensitive to results obtained from the evaluation of sustainable performance of companies. Some companies may provide only limited information in their sustainability reports, implying that there will be no information on necessary indicators. On the other hand, companies concentrate on only one of the dimensions of corporate social responsibility, e.g. most of the attention and efforts can be laid on ecological performance and its improvement, leaving behind social performance. Therefore, the final result may be influenced negatively. What is more, the sustainable performance of the fund is also influenced by the allocation of companies that form the top five holding the fund. The sustainable performance varies from business to business, implying that performance of the fund will be influenced by the portfolio composition, which means that the higher degree of CSR of companies contributes to the better fund performance. As one might expect, the percentages of companies that form the top holding of the fund have an influence on performance of that fund. Such sensitivity is supported by the findings of Koellner et al. (2005), who explain that the structure of the investment portfolio influences the sustainable performance of the fund. The authors observe that if the part of the security with poor sustainability increases in the portfolio, then the overall sustainability of the fund should decrease and vice versa; if the percentage of the stock with high sustainability increases in the portfolio then it is expected that the sustainability performance of the fund should increase.

Bianchi and Drew (2012), Williams (2007), Jessen (2012), Mill (2006) overview the findings of various authors regarding the benefits of sustainable investments that a potential investor may receive. The authors summarise that there is no clear answer to the question of sustainable benefits because many academics have found a positive impact of sustainable investment, while others have found no relationship or even a negative impact of sustainable decision-making.

Blanchett (2010) has analysed traditional funds and SRI funds of the Morningstar rating. The author has found that SRI funds may show positive and negative performances in comparison to traditional funds.

Table 3. Results of sustainability measurement.

Company	EVA	ROA	ROE	Sustainable growth rate	Market-to-book ratio	Earnings per share	Price-earnings ratio	Social performance	Ecologic performance
Anglo American	0.1108	0.1094	0.1834	0.1641	0.6665	4.9194	5.6221	0.3333	0.2522
Vodafone	0.2757	0.1282	0.0899	0.0422	2.1255	0.0868	23.6397	0.3126	0.2489
BG Group	-0.2904	0.0737	0.1524	0.1264	0.0122	0.9410	0.0799	0.0988	0.0012
Novartis	0.0825	0.0787	0.1402	0.0528	20.9364	2.9160	14.9312	0.3123	0.2509
Unilever	0.0489	0.0973	0.3098	0.1431	4.6063	1.5410	14.8670	0.3884	0.0004
H&M	-0.0018	0.2629	0.3587	0.0022	8.0307	1.1012	22.3876	0.0067	0.000014
Nordea Bank	0.1273	0.0050	0.1358	0.0771	0.9256	0.6515	9.1788	0.4814	0.0001
Ericsson	0.0689	0.0448	0.0865	0.0853	0.1127	0.4424	1.3020	0.2197	0.0003
Telia Sonera	0.1600	0.0830	0.1699	0.0704	1.6328	0.5606	9.6111	0.3642	0.3731
Atlas Copco	0.0206	0.1729	0.4504	0.2403	0.5932	1.2366	13.2911	0.1103	0.0003
Volvo	0.0245	0.0513	0.2114	0.1404	2.3559	9.9064	1.1029	0.0000	0.0002
Sandvik	0.0014	0.0594	0.1729	0.0606	2.9553	0.5693	17.0891	0.1097	0.0154

Source: Author's calculations.

Table 4. Results of sustainability measurement.

Fund name	SEj	Fund name	SEj
Banco Etisk Europa	19.7696	Ethica Sverige Mega	26.6892
Ethica Balancerad	1.8301	Ethica Sverige	1.6187
Ethica Forskiting	12.1437	Humanfonden	10.6638
Ethica Sverige Global	23.7205	Talenten Aktiefond Mega	106.8929

Source: Author's calculations.

On the other hand, Cowton (2004) argues that orientation towards social and ethical goals may have a severe result on SRI fund performance.

Therefore, the correlation analysis should bring clarity to the question of dependency between the sustainable performance of companies and investment funds. The supporting correlation analysis has revealed the coherence between corporate social responsibility and SRI funds. The obtained results are depicted in Tables 5–11.

Table 5. Correlation analysis.

Name of the fund	HCE	SCE	ICE	VAIC	MVA	ROA	Sustainable growth rate	Market-to-book ratio
Banco Etisk Europa	0.74	0.55	0.72	0.73	0.65	-0.54	-0.53	0.96

Source: Author's calculations.

Table 6. Correlation analysis.

Name of the fund	VA	Sustainable growth rate	Earnings per share	Price-earnings ratio	Name of the fund	Ecologic performance
Ethica Sverige	0.75	0.79	0.98	-0.55	Humanfonden	0.996

Source: Author's calculations.

Table 7. Correlation analysis.

Name of the fund	CEE	HCE	SCE	ICE	MVA	Social performance	Ecologic performance
Ethica Forskiting	-0.76	0.66	0.60	0.65	-0.69	0.58	0.98

Source: Author's calculations.

Table 8. Correlation analysis.

Name of the fund	CEE	VAIC	EVA	Social performance	Ecologic performance
Talenten Aktiefond Mega	-0.85	-0.62	0.80	0.84	-0.58

Source: Author's calculations.

Table 9. Correlation analysis.

Name of the fund	VA	CEE	HCE	SCE	ICE	VAIC	EVA	Social performance
Ethica Sverige Mega	-0.58	-0.70	-0.51	-0.56	-0.53	-0.67	0.64	0.69

Source: Author's calculations.

Table 10. Correlation analysis.

Name of the fund	CEE	HCE	SCE	ICE	VAIC	EVA	ROE	Earnings per share	Social performance
Ethica Sverige Global	-0.80	-0.51	-0.53	-0.52	-0.68	0.89	-0.62	-0.52	0.91

Source: Author's calculations.

Correlation analysis revealed the relationship between the performance of SRI funds and corporate social responsibility of those companies that are included in those funds. It is evident that human capital and the intellectual capital of companies have a relationship with fund performance. The importance of human and intellectual capital is supported by the findings of Stankevičienė and Čepulytė (2012), where these variables are proved to have an influence on value creation.

What is more, correlation analysis has shown the existence of a relationship between fund results and ecological and social performances of the companies. The cohesion of fund performance and social performance exists, e.g. 'Ethica Balanserad' (0.5), 'Ethica Sverige Mega' (0.69), 'Ethica Forskiting' (0.58); and cohesion of fund performance and ecologic performance exists in the case of 'Talenten Aktiefond Mega' (-0.58). In addition, there can be observed a very strong relationship between fund performance and ecological performance – Ethica Balancerad (0.99), Ethica Forskiting (0.98), Humanfonden (0.996), whereas a very strong relationship between fund performance and social performance can be observed in Ethica Sverige Global (0.91).

The results have shown that the corporate sustainability practices have an influence on socially-responsible invested fund performance. Mill (2006) provides supporting arguments and there exists a relationship between these two variables. Therefore, as proposed by Cowton (2004), SRI funds may become active shareholders by selecting companies according to CSR criterion and encouraging the companies they invest in to practice the continuous development of corporate social responsibility.

The correlation analysis (Tables 5–11) has shown that there might exist a negative correlation between the SRI fund performance and corporate social responsibility. First, let us consider the negative correlation between variables which is due to the fact that the asset selection process of SRI funds is constrained by ethical and social issues. Some companies may fail to comply with the requirements and will not be chosen for the fund portfolio. Therefore, Blanchett (2010) argues that the SRI fund may lose the benefits of diversification, which will result in lower returns. Secondly, implementation of SRI and development of corporate social responsibility includes a considerable number of expenditures that result both on the fund and the company's performance. For example, Cowton (2004) observes that implementation of SRI requires the gathering and analysing of a huge amount of information for asset selection purposes. Such a process is time-consuming and calls for a deep and extensive knowledge of the fund

Table 11. Correlation analysis.

Name of the fund	CEE	HCE	SCE	ICE	VAIC	Tobin's Q	Earnings per share	EVA	Social performance	Ecological performance
Ethica Balancerad	-0.70	0.98	0.97	0.98	0.90	-0.57	-0.51	0.79	0.50	0.99

Source: Author's calculations.

manager. Thus, these costs may also have a result on the fund performance. Lastly, as mentioned earlier, the proposed methodology is sensitive to the availability of information of ethical and social criteria. As a result, the lack of information on the specific criteria may also have a negative result in the correlation analysis.

#### 4. Conclusions

The study has proposed a methodology for evaluating the sustainable performance of companies and investment funds. The methodology is applicable for asset allocation and screening purposes and can be used by both individual investors and fund managers. The study has proven that there exists the coherence of corporate social responsibility and sustainable performance of investment funds:

- (1) The examination has proven the existence of a relationship between the social performances of selected companies and the economic performance of those companies. The coherence has been found with economic indicators such as MVA and EVA. What is more, a relationship has been established between ecological performance of companies and capital employed efficiency, structural capital efficiency and the EVA of the selected companies.
- (2) The analysis of results of the funds and the performances of the companies that form the holdings or the funds has revealed that there exists a relationship between the funds and the portfolio composition. Notably, the fund performance has been influenced by human and intellectual capital efficiencies of the companies. Moreover, the performance of the funds is greatly influenced by the ecological and social performances of the companies that form the holdings of the funds.

The limitations of the proposed sustainable performance valuation methodology have also been observed. The sensitivity of the method depends on the availability of the information regarding the social and ecological variables that is provided by companies in their sustainability.

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