“Integrating ESG factors in investment decisions by mutual fund managers: a case of selected Johannesburg Stock Exchange-listed companies”

AUTHORS Michael Bamidele Fakoya https://orcid.org/0000-0002-8763-0616
https://publons.com/researcher/2040164/michael-bamidele-mb-fakoya/
Segopotje Evonia Malatji

ARTICLE INFO Michael Bamidele Fakoya and Segopotje Evonia Malatji (2020). Integrating ESG factors in investment decisions by mutual fund managers: a case of selected Johannesburg Stock Exchange-listed companies. *Investment Management and Financial Innovations*, *17*(4), 258-270. doi:10.21511/imfi.17(4).2020.23

DOI http://dx.doi.org/10.21511/imfi.17(4).2020.23

RELEASED ON Monday, 07 December 2020

RECEIVED ON Thursday, 22 October 2020

ACCEPTED ON Tuesday, 24 November 2020

JOURNAL "Investment Management and Financial Innovations"

ISSN PRINT 1810-4967

ISSN ONLINE 1812-9358

PUBLISHER LLC “Consulting Publishing Company “Business Perspectives”

FOUNDER LLC “Consulting Publishing Company “Business Perspectives”

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Michael Bamidele Fakoya (South Africa), **Segopotje Evonia Malatji** (South Africa)

INTEGRATING ESG FACTORS IN INVESTMENT DECISIONS BY MUTUAL FUND MANAGERS: A CASE OF SELECTED JOHANNESBURG STOCK EXCHANGE-LISTED COMPANIES

Abstract

This paper examines whether mutual fund managers incorporate environmental, social, and governance (ESG) factors when deciding which sector to invest on behalf of their trustees. In doing this, the top 20 South African mutual fund companies (asset managers) listed on the Johannesburg Stock Exchange (JSE) were selected. The paper identified the top 30 JSE listed companies (in the large industrial, equipment, and machinery sectors, excluding unlisted and service-oriented companies) where trustees' funds were invested (with a total of 28 companies between 2007 and 2017) from the mutual fund companies' Equity Fund Fact Sheets 2017 (representing recent investment focus). ESG data were collected from the integrated and sustainability reports at the sampled companies' websites, and financial data were sourced from the IRESS database. This study adopted the panel data analysis. The results show an insignificant negative relationship between the ESG proxies (water usage, employee health and safety cost [number of work-related fatalities], percentage of women on corporate board) and return on equity (ROE). This means that the sampled companies disregard the United Nations Principle of Responsible Investment (UN PRI) guideline, suggesting that asset managers focus on increasing returns on shareholders' investment without considering ESG issues. The paper concludes that the disregard for responsible investment guidelines does not encourage companies to improve their unsustainable business practices.

Received on: 22nd of October, 2020
Accepted on: 24th of November. 2020
Published on: 7th of December, 2020

Michael Bamidele Fakoya, Ph.D., Research Manager, Management and Law Faculty, Africa Centre for Sustainability Accounting and Management (ACSAM), School of Accountancy, University of Limpopo, South Africa. (Corresponding author)

Segopotje Evonia Malatji, Master of Commerce, Senior Lecturer, Management and Law Faculty, Africa Centre for Sustainability Accounting and Management (ACSAM), School of Accountancy, University of Limpopo, South Africa.

Conflict of interest statement:
Author(s) reported no conflict of interest

Keywords ESG factors, mutual funds, responsible investment, sustainable value creation, corporate governance, South Africa

JEL Classification Q51, Q56

INTRODUCTION

In the face of the current global business climate, non-adherence to responsible investment practices could pose risks of both reputational damage and consumer backlash, thereby exposing businesses to disruptions and spiraling costs. By integrating both financial and ESG factors in investment decisions contribute to sustainable business practices (Stankevičienė & Čepulytė, 2014). Companies seeking to achieve sustainable business practices cannot succeed by focusing on individual aspects of the ESG factors; instead, they need to integrate them to attain corporate strategic objectives (Korditabar, 2015; Escrig-Omedo et al., 2017). Likewise, companies seeking long-term sustainability should consider ways of integrating these non-financial (ESG factors) into their core business decisions. By integrating ESG issues in investment decisions, companies are more conscious of the long-term impact of their operations on the environment and society (Husted & Milton de Sousa-Filho, 2017; Zulkafli et al., 2017). The principle of re-

http://dx.doi.org/10.21511/imfi.17(4).2020.23

sponsible investment advocates that companies aiming to be sustainable should focus beyond financial factors in making investment decisions. Responsible investment entails the inclusion of non-financial factors (ESG) into the choice of investment opportunities (Stankevičienė & Čepulytė, 2014). In being consistent with the triple bottom line (TBL) theory, the inclusion of ESG factors will promote sustainable business practices (Elkington, 1994; Korditabar, 2015). Likewise, Pilaj (2017) reiterates that responsible investments explicitly contribute to companies' sustainable business practices. Disregarding the United Nations Principle of Responsible Investment (UN PRI) guideline suggests that asset managers focus on increasing returns on shareholders' investment without considering ESG issues. However, most mutual fund managers do not consider environmental, social, and governance (ESG) issues in making investment decisions. Regarding environmental issues, Korditabar (2015) contends that companies should be committed to using water and other natural resources efficiently and sustainably because unsustainable use of water might affect future generations' ability to meet their water needs. Likewise, companies adhering to sustainable business practices will attract and keep good employees (Auer, 2016). When a company invests responsibly in employees' health and safety, such employees are likely to feel safe and secure at work. On the other hand, employees may feel unsafe when management focuses less on improving sustainable business practices. Therefore, it is vital to empirically examine the impact of conscious investments (Rao & Tilt, 2016) in employees' health and safety costs and sustainable practices in board composition, such as the percentage of women on corporate boards on the financial performance of companies. Therefore, it is crucial to examine whether the profit motive drives mutual fund managers' investment decisions over and above social and environmental considerations. This study also measures companies' financial performance of investee companies using the return on equity (ROE).

Hence, this study examines whether mutual fund managers integrate ESG issues when making investment decisions on behalf of their trustees.

The study consists of the following sections: literature review, description of the study methodology, results and discussion, and conclusion.

1. LITERATURE REVIEW AND HYPOTHESES

1.1. The four-capital sustainability model

The four-capital sustainability model consists of manufactured, human, social, and natural capital (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008). The manufactured capital refers to using the company's physical assets to generate desired profits, also referred to as economic sustainability (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008). Human capital entails the health and well-being of general society (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008), with this paper focusing on employees' health and safety issues in arriving at investment decisions. Social capital includes human well-being, the social network that supports social, political, and legal structures in companies (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008). Here, this study focuses on the composition of the board of directors as part of companies' legal structures regarding the percentage of females on corporate boards. Natural capital includes mainly environmental factors such as water, timber, energy, and mineral resources (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008). This study uses water as a proxy for environmental practices because of its scarcity in South Africa. It is essential to examine whether companies where mutual fund managers invest trustee funds have measures to use water sustainably. The four-capital model encourages companies to integrate the manufactured, human, social, and natural capital in their operations to ensure sustainable business practices (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008). Thus, the four-capital model is adopted in this study because it covers economic, environmental, human, and social factors.

1.2. Earlier studies

The influence of sustainable business practices on financial performance has received growing attention in research, although the results are inconclusive. The study by Alshehhi, Nobanee, and Khare (2018) confirmed the inconclusiveness of research results by reviewing 132 different journal articles published between 2002 and 2017 to determine the relationship between sustainability practices and company financial performance. The results indicated that 78% of the 132 journal articles reported a positive relationship, 7% reported no impact, 6% reported positive and negative relationships, 2% reported no impact, and 2% reported mixed results of positive, negative, and no impact. Earlier studies found a positive relationship between environmental sustainability and financial performance (Albertini, 2013; Baik et al., 2013; Lin et al., 2013; Singal, 2014; Edwards, 2015; Severo et al., 2015). Other earlier studies found a negative relationship between environmental sustainability and financial performance (Song et al., 2017). Employees' health and safety are essential for successful business operations. Working conditions can affect employees' health and performance and, so, the company's financial performance (Sobhani et al., 2015). Companies that do not invest in employees' health and safety may see a decline in employees' productivity and increased absenteeism, and a decrease in financial performance (Loeppke et al., 2015). Companies with better employees' relationships focus on improving employees' health for increased efficiency and productivity (Fabius et al., 2013; Esteban-Sanchez et al., 2017). The effect of employees' health and safety on financial performance has attracted researchers' interest. Earlier studies focused on countries such as the USA (Fan & Lo, 2012), Spain (Abad et al., 2013), and Portugal (Santos et al., 2013). Earlier studies have found no relationship between improving employees' health and safety and financial performance (Fan & Lo, 2012; Auer & Schuhmacher, 2016). Other studies found that employees' health and safety have a positive relationship with financial performance (Abad et al., 2013; Fabius et al., 2013; Santos et al., 2013; Sobhani et al., 2015; Haslam et al., 2016). Further studies found mixed results between health and safety measures and financial performance (Barnett & Salomon, 2012). The relationship between gender diversity on board of directors and financial performance has attracted researchers' interest in recent years. However, results are still contradictory and inconclusive. Studies have found positive, negative, or even no relationship. Some studies found a positive relationship between women on the board and financial performance (Jin, 2014; Liu et al., 2014; Low et al., 2015; Mans-Kemp & Viviers, 2015). Other studies found a negative relationship between women on the board and financial performance (Ahern & Dittmarr, 2012; Darmadi, 2013). Lückerath-Rovers (2013) examined the relationship between gender diversified boards and financial performance, and the results thereof were inconclusive. Previous studies were in countries such as Asia (Low et al., 2015), Australia (Chapple & Humphrey, 2014), China (Liu et al., 2014), Norway (Ahern & Dittmarr, 2012), and Indonesia (Darmadi, 2013). Few studies have been conducted in South Africa with a positive relationship between the percentage of female board members and financial performance (Mans-Kemp & Viviers, 2015). Firm size may be among the factors that influence the company's financial performance and is, therefore, included in this study as a control variable. In terms of the relationship between firm size and financial performance, earlier studies have shown inconclusive evidence. A study conducted in the Nigerian manufacturing sector found a positive relationship between firm size and profitability using both total assets and total sales as measures (John & Adebayo, 2013). Likewise, a study conducted in the Croatian manufacturing sector also found a positive relationship between firm size and profitability (Pervan & Višić, 2012). A study performed in Pakistan using companies listed on the Karachi Stock Exchange also found both weak and positive relationship between firm size and financial performance (Abbasi & Malik, 2015). However, a study performed on listed manufacturing firms in Sri Lanka found no relationship between firm size and profitability (Niresh & Thirunavukkarasu, 2014). Thus, this paper controlled for the effect of firm size on financial performance. In terms of other ROE determinants, factors identified include tax burden, interest cover, operating margin, asset turnover, financial leverage, price to earnings, the book to market, and current ratio (Kharatyan et al., 2017) as control variables. Determinants such as tax burden, interest burden, operating margin, asset turnover,

http://dx.doi.org/10.21511/imfi.17(4).2020.23

and financial leverage ratios have a significant effect on ROE (Kharatyan et al., 2017). In the same study (Kharatyan et al., 2017), the effect of price to earnings, book to market, and current ratio on ROE were found not to be significant. The study by Kijewska (2016) supported the use of operating profit margin, asset turnover, financial leverage, and tax ratios as significant determinants of ROE.

The above extant literature shows the inconclusiveness of results from researchers. Besides, fewer studies have attempted to combine the selected proxies. This study examines the relationship between environmental sustainability (water usage), social sustainability (employees' health and safety cost) and governance issues (the percentage of women on corporate boards), and the financial performance of selected JSE listed companies; which mutual fund managers have invested trustees' fund. Thus, this study contributes to the debate on responsible investment and sustainable business practices by combining the effects of ESG factors on South African companies' financial performance where mutual fund managers invest trustees' funds.

Hence, this paper considered the following hypotheses:

H_1: *There is no correlation between environmental sustainability investment (water usage) and ROE.*

H_2: *There is no correlation between social sustainability investment (employee health and safety cost) and ROE.*

H_3: *There is no correlation between the percentage of female board members and ROE.*

H_4: *There is no correlation between firm size (market capitalization) and ROE.*

H_5: *There is no correlation between ROE influencers and ROE.*

2. METHODOLOGY

The paper analyzed the data collected from 28 companies listed on the JSE where mutual fund managers invest between 2007 and 2017 using panel data analysis. Besides, the sampled companies' operations are considered to affect both environment and society adversely. Although there is a stock of over 350 different companies listed on the JSE, the sample was narrowed to only the selected 28 manufacturing companies where mutual fund managers invest. This is because of their use of a large volume of water in their production processes and the industrial hazards posed to their employees from consistent use of heavy equipment and machinery. Besides, this paper excluded unlisted companies for lack of data availability and service-oriented companies because they are considered to use less volume of water. This study used annual, integrated, and sustainability reports by companies from the top 30 listed JSE companies where South African mutual funds (investment fund managers) invest trustees' funds. This was done to determine whether the mutual fund's companies consider ESG factors in their investment decisions in promoting sustainable business practices among JSE listed companies. The mutual fund companies' equity funds fact sheets for the 2017 financial year-end (because it represents recent investments made) was used to select the mutual fund companies and the top 30 companies in which they invested trustee funds. This paper arrived at a sample of only 28 companies because our data search was narrowed to only those companies where mutual fund managers have consistently invested trustees' funds in the period of investigation. Besides, one excluded those JSE listed companies with incomplete data set identified for this study. The sampled companies cut across various industries that include basic materials, chemicals, consumer goods, general industries, health care, mining, tobacco, pharmaceuticals, and properties. However, the sample excluded companies considered as having a less adverse impact on environmental sustainability such as banks, financial services, insurance companies, media, mobile telecommunications, technology, and because they use a lower volume of water and are low on the use of heavy industrial equipment and machinery. The choice of the limited sample was because the intention was to examine whether mutual fund managers consider ESG issues when making investment decisions on behalf of trustees. This paper sampled only those companies in which mutual fund managers have consistently invested their trustees' funds and so determine if these mutual fund managers consider investing responsibly (that is, using ESG criteria as the motive for investing or are still investing to increase trustees' returns on equity (ROE)). The study extracted data for variables such as water usage as a proxy for environmental performance; employee health and safety cost (investment to reduce employees' work-related hazards or injury) as a proxy for social performance; and the percentage of women's representation on corporate boards as a proxy for governance. Besides, the study used ROE as a proxy for companies' financial performance. The ESG variables were extracted from sampled companies' integrated reports (annual reports and sustainability reports) on their websites. The ROE data was sourced from the IRESS database. Hence, the following study model was presented:

$$ROE_{it} = \alpha_{it} + \beta_1 WRC_{it} + \beta_2 EHSC_{it} + \\ + \beta_3 GENDIVERS_{it} + \beta_4 FIRMSIZE_{it} + \\ + \beta_5 ROEINFL_{it} + \varepsilon, \tag{1}$$

where ROE_{it} = Return on equity; $\beta_1 WRC_{it}$ = Water reduction cost; $\beta_2 EHSC_{it}$ = Employee health and safety cost; $\beta_3 GENDIVERS_{it}$ = percentage of female board members; $\beta_4 FIRMSIZE_{it}$ =Firm size (Market capitalization); $\beta_5 ROEINFL_{it}$ = ROE influencers; α_{it} = intercept, β = gradient/slope, ε = error. ROE is the dependent variable, while water usage, employee health, and safety cost, and percentage of women's representation on corporate' boards are the independent variables. Control variables used in this study include firm size (market capitalization) and ROE influencers.

3. RESULTS

The risk of reputational damage to and consumer backlash against companies that fail to pay substantial attention to ESG issues in making investment decisions could expose such companies to business disruptions and spiraling costs. Descriptive statistics are presented in Table 1.

As shown in Table 1, the ROE has a mean of 16.82% and a standard deviation of 33.5, meaning that the data are slightly inconsistent and is affected by outliers as the maximum observation is 126.4%. Water usage has the highest mean of 274.226, showing that most of the companies that mutual funds have invested in use water excessively. In terms of the number of work-related fatalities, the mean is 3.34 and a standard deviation of 7.02, which is consistent. Whereas, the percentage of women on the boards has a mean of 10.22%, and the maximum observation representing the percentage of women on the board of a particular company is 50%, implying that few companies are complying with gender equity requirements in their board structures. The regression analysis result is in Table 2. The authors used the cross-sectional time-series FGLS regression and the generalized least squares coefficient where the variance of the residual term is heteroscedastic with no autocorrelation.

The results in Table 2 show no autocorrelation between the variables. The results show that prob>chi^2 is significant (prob > chi^2 = 0.0000) at less than p-value of 0.05. This shows that the variables of this study are significant in interpreting the results. The results show an insignificant negative ($p > z$ =0.834) relationship between water usage and ROE. This signifies that more water usage results in a decrease in ROE and vice versa. The results further indicate that there is a significant ($p > z$ =0.018) and negative relationship (coefficient = –0.19291) between employee health and safety (number of work-related fatalities) and ROE, implying that more fatalities result in a decrease in ROE and vice versa. Moreover, there is an in-

Table 1. Descriptive statistics of study variables

Source: Authors' result from the analysis.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE (%)	297	16.8201	33.52105	–422.65	126.4
Water usage	297	274226	2136925	0	2.6807
No. of work-related fatalities	297	3.341818	7.021731	0	73
Women on corporate board (%)	297	19.22101	10.83107	0	50
Market capitalization	297	10.22953	23.37689	–91.22	214.96

http://dx.doi.org/10.21511/imfi.17(4).2020.23

Table 2. Regression analysis results

Source: Authors' result from the analysis.

Estimated covariances		27
Estimated autocorrelations		No autocorrelations
Estimated coefficients		12
Number of jobs	=	297
Number of groups	=	27
Time periods	=	11
Wald Chi$^{2(11)}$	=	1159.68
Prob> Chi^2	=	0.0000

ROE	Coef.	Std. Err.	Z	*p>z*	[95% conf.	interval]
Water usage (megalitres)	–0.000000052	0.000000249	–0.21	0.834	–0.00000054	0.000000436
E, H, and S (work-related fatalities)	–0.19291	0.081531	–2.37	0.018	–0.35271	–0.03311
% of women on board	–0.00905	0.046798	–0.19	0.847	–0.10077	0.082673
Market cap (total assets)	–0.04764	0.028894	–1.65	0.099	–0.10427	0.008994
Book value/share	–0.00026	0.000069	–3.75	0	–0.00039	–0.00012
Current ratio	–4.42256	0.855636	–5.17	0	–6.09958	–2.74554
Interest cover	0.033922	0.024066	1.41	0.159	–0.01325	0.081091
Leverage factor	0.754592	0.093695	8.05	0	0.570954	0.938231
Operating profit margin	1.384349	0.057202	24.2	0	1.272236	1.496462
Price-earnings	0.028005	0.016085	1.74	0.082	–0.00352	0.05953
Total assets turnover	7.317292	0.759034	9.64	0	5.829613	8.804971
Cons	–1.75181	1.452273	–1.21	0.228	–4.59821	1.094595

significant ($p > z$ =0.847) negative relationship (coefficient = –0.00905) between the percentage of women on the board and ROE. This suggests that a greater women's representation on corporate boards is negatively related to financial performance, and a lower women's presence results in improved financial performance.

Furthermore, the results show a negative relationship between market capitalization (coefficient = –0.04764), book value per share (coefficient = –0.00026), current ratio (coefficient = –4.42256), and ROE indicated by a coefficient of variation. This shows that when ROE increases, these variables decrease. Lastly, the results shows a positive relationship between interest cover (coefficient = 0.033922), leverage factor (coefficient = 0.754592), operating profit margin (coefficient = 1.384349), price-earnings (coefficient = 0.028005), total asset turnover (coefficient = 7.317292) and ROE. This shows that ROE increases when these variables increase.

Data used should be normally distributed in order to avoid distorting the assumptions that apply to regression analysis. If the data is not normally distributed, it can result in unreliable and invalid research results. Hence, the study used the Shapiro-Wilk W test to test for normality in Table 3.

Table 3. Shapiro-Wilk W test for normality

Source: Authors' result from the analysis.

Variable	Obs	W	V	z	Prob > z
EU	297	0.50401	104.732	10.913	0.0000

Based on the information shown in Table 3, the study data is normally distributed, as indicated by p-value (0.000). The regression of assumption relating to normality is not violated at all. Therefore, the statistical tests are not distorted; and this confirms the validity and reliability of the results.

In confirming whether multicollinearity exists between the variables, variance inflation factor (VIF) tests were conducted, as shown in Table 4.

Table 4. Multicollinearity test

Source: Authors' results from the analysis.

Variable	VIF	1/VIF
Water usage	1.02	0.976668
Women on corporate board (%)	1.02	0.977414
No. of work-related fatalities	1.01	0.99477
Market capitalization	1	0.995151
Mean VIF	1.01	

The mean VIF (1.01) shown in Table 4 indicates that the variables' multicollinearity score is not

Table 5. Random-effects model

Source: Authors' result from the analysis.

Number of obs	=	297
Number of groups	=	27
Obs per group:		
Min	=	11
Avg	=	11.0
Max	=	11
Wla chi2 (11)	=	227.18
Prob > chi2	=	0.0000

Random-effects GLS regression Group variable: cocode		
R-sq:		
Within	=	0.4207
Between	=	0.6701
Overall	=	0.4595
Corr (u_i, Xb)	=	0 (assumed)

ROE	Coef.	Std. Err.	z	*p*>z	[95% conf.	interval]
Water usage (megalitres)	–0.000000127	0.00000071	–0.18	0.858	–0.00000152	0.00000126
H and S (No. of work-related fatalities)	–0.16857	0.229315	–0.74	0.462	–0.61802	0.280876
% of women on board	–0.09862	0.160086	–0.62	0.538	–0.41238	0.215143
Market cap (total assets)	–0.17831	0.066456	–2.68	0.007	–0.30857	–0.04806
Book value/share	–0.00037	0.000213	–1.73	0.083	–0.00078	0.0000483
Current ratio	–3.15919	2.388933	–1.32	0.186	–7.84141	1.523034
Interest cover	–0.05862	0.050747	–1.16	0.248	–0.15808	0.040841
Leverage factor	0.544261	0.149315	3.65	0.000	0.25161	0.836912
Operating profit margin	1.763178	0.130848	13.48	0.000	1.506721	2.019634
Price-earnings	0.035856	0.037145	0.97	0.334	–0.03695	0.108659
Total assets turnover	9.388851	2.412933	3.89	0.000	4.65959	14.11811
Cons	–6.93511	4.987659	–1.39	0.164	–16.7108	2.840518
sigma_*u*	5.885598					
sigma_*e*	23.68252					
Rho	0.05817		(fraction of variance due to u_i)			

statistically significant to distort the results as the population coefficient can be precisely predicted. Therefore, the study results are acceptable.

Results were interpreted applying the random-effects model (see Table 5) after a Hausman test (see Table 6) was conducted to determine an appropriate model between fixed-effects and random-effects models. The latter proved to be appropriate.

Table 5 shows a significant *p*-value (prob > chi^2 = 0.000), which is less than the significance *p*-value of 0.05. Likewise, the results show an insignificant negative relationship between water usage, the number of work-related fatalities, the percentage of women on the corporate board, and ROE. Furthermore, the results show a significant negative relationship between market capitalization and ROE. Moreover, the results show an insignificant negative relationship between book value per share, current ratio, interest cover, price-earnings, and ROE. Lastly, the results show a significant positive relationship between leverage factor, operating profit margin, total assets turnover, and ROE. The discussion is based on the random-effects model analysis, as shown by the Hausman test results.

The study accepts the null hypothesis based on the Hausman test that showed that the random-effects model is appropriate, while the study rejects the alternative hypothesis, the fixed-effects model, in interpreting the result. The significant *p*-value is at 0.05. If the Hausman test results are less

http://dx.doi.org/10.21511/imfi.17(4).2020.23

Table 6. Hausman test results

Source: Authors' results from the analysis.

Variables	Coefficients			
	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) SE.
Water usage (megalitres)	–0.000000407	–0.000000127	–0.00000028	0.000000257
H and S (work-related fatalities)	–0.37741	–0.16857	–0.20884	0.144454
No. of women on board	–0.19351	–0.09862	–0.09489	0.152849
Market cap (total assets)	–0.18939	–0.17831	–0.01107	0.013299
Book value/share	–0.00059	–0.00037	–0.00022	0.00016
Current ratio	–7.30735	–3.15919	–4.14816	2.729087
Interest cover	–0.17451	–0.05862	–0.11589	0.027939
Leverage factor	0.518789	0.544261	–0.02547	
Operating profit margin	2.246315	1.763178	0.483137	0.117777
Price-earnings	0.041778	0.035856	0.005922	0.011661
Total assets turnover	6.331919	9.388851	–3.05693	4.205873

Note: b = consistent under *Ho* and *Ha*; obtained from xtreg, *B* = inconsistent under *Ha*, efficient under *Ho*; obtained from xtreg, Test: *Ho*: difference in coefficients not systematic, $chi^{2(9)}$ = (*b-B*)'[(*V_b-V_B*)^(-1)](*b-B*) = 12.42, Prob > chi^2 = 0.1908.

than the significance value, the study rejects the null hypothesis while accepting the alternative hypothesis. However, with a Prob > chi^2 = 0.1908 in Table 6, which is more than the significant p-value of 0.05, the null hypothesis is accepted, and the random-effects model (REM) was applied to interpret the results.

4. DISCUSSION

The result relied on the random-effects model analysis as the appropriate model based on the Hausman test in Table 6 for the discussion. The results in Table 5 show an insignificant negative relationship between water usage, the number of work-related fatalities, the percentage of women on corporate boards, and ROE. Further discussion on the results was based on the hypotheses.

H_1: *There is no correlation between environmental sustainability investment (water usage) and ROE.*

A negative relationship exists between water usage and ROE. This shows that the selected companies use water inefficiently or unsustainably, thereby impacting ROE negatively. A large volume of water consumption is associated with a higher cost, which negatively affects profit and ROE. The result is similar to earlier studies with a positive relationship between environmental sustainability measures and firm performance (Baik et al., 2013; Albertini, 2013; Edwards, 2015; Severo et al., 2015; Alshehhi et al., 2018). However, the result contradicts that of Song et al. (2017) that environmental sustainability measures do not improve companies' financial performance.

The results show that mutual fund companies overlook sustainable business practices like efficient water usage in selecting investment opportunities. This implies that mutual fund managers do not sufficiently consider environmental issues when making investment decisions but focus more on the returns accruable to trustees (Manzhynski et al., 2015). Besides, the four-capital model postulates that companies should integrate financial performance measures with social and environmental factors to achieve sustainable business practices (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008; Ali, 2017). Likewise, the stakeholder theory encourages companies to satisfy the needs of different stakeholders, such as ensuring improved environmental performance (Freeman, 1984; Harrison & Wicks, 2013; Harrison et al., 2015). Earlier studies have found that focusing on a few stakeholders will result in less value over time (Freeman, 1984; Harrison & Wicks, 2013; Harrison et al., 2015; Jo et al., 2016). However, the result is consistent with earlier studies whereby companies prefer the profitability objective over meeting the needs of the different stakeholders (Friedman, 1970; Shim, 2014). This indicates that mutual fund managers follow the traditional investment approach that focuses on a higher rate of returns to shareholders at the detriment of satisfying the needs of other stakeholders. Thus, this paper rejects the null hypothesis and accepts the alternative hypothesis.

H_2: *There is no correlation between social sustainability investment (employee health and safety cost) and ROE.*

There is a negative and insignificant correlation between work-related fatalities and ROE. This indicates that companies where mutual fund managers invest do not invest adequately in employees' health and safety, resulting in increased fatalities, which affect companies' operations negatively. The result support earlier studies that investing in social sustainability such as employees' health and safety improves companies' financial performance (Barnett et al., 2012; Santos et al., 2013; Haslam et al., 2016). However, it contradicts earlier studies that investing in social sustainability does not improve companies' financial performance (Fan & Lo, 2012; Fabius et al., 2013). This indicates that most companies where mutual fund managers invest their trustees' funds do not prioritize investment in employees' health and safety, resulting in increased fatalities consistent with the previous studies (Haslam et al., 2016; Pagalung, 2016; Probst et al., 2016). Likewise, the result contradicts the four-capital model that companies should prioritize social issues like sustainable work environment (Bojan, 2007; O'Connor, 2007; Ekins et al., 2008) because companies' financial performance decreases with increased employees' fatalities. This is common among companies' managers who approach investment by traditionally focusing on an increased rate of returns, thereby neglecting social issues like employees' safety (Shkura, 2017). The result negates the stakeholder theory, which suggests that companies need to address the needs of different stakeholders (Friedman, 1970; Shim, 2014) instead of focusing on profitability (Pagalung, 2016). By neglecting employees' health and safety, companies face enormous challenges such as bad reputation, litigations, strikes, and forceful closure that affect future operations and financial performance. Thus, this paper rejects the null hypothesis and accepts the alternative hypothesis.

H_3: *There is no correlation between gender diversity (percentage of female representations on corporate boards) and ROE.*

An insignificant negative relationship exists between women on corporate boards and ROE. The result is similar to earlier studies, which found that the percentage of women on corporate board is negatively related to financial performance (Ahern & Dittmarr, 2012; Darmadi, 2013; Mans-Kemp & Viviers, 2015). In contrast, other earlier studies found a positive relationship between women on board structures and financial performance (Liu et al., 2014; Levi et al., 2014; Low et al., 2015). This result shows that women are still under-represented on corporate boards, which are still male-dominated (Nekhili & Gatfaoui, 2013; Şener & Karaye, 2014), whereas adequate women's representation is associated with good corporate governance (Handajani et al., 2014; Nekhili et al., 2017). Similarly, women are believed to be more cautious and pay attention to societal issues when making investment decisions (Huang & Kisgen, 2013; Arun et al., 2015). It appears that the choice of investments by selected mutual fund managers focuses on higher returns without consideration for socially and environmentally friendly factors. Thus, this study rejects the null hypothesis and accepts the alternative hypothesis.

H_4: *There is no correlation between firm size (market capitalization) and ROE.*

The result shows a significant negative correlation between firm size (market capitalization) and ROE. Furthermore, it contradicts earlier studies, which found a positive relationship between firm size and financial performance (Pervan & Višić, 2012; John & Adebayo, 2013; Abbasi & Malik, 2015) but do not support that there is no correlation between firm size and financial performance (Niresh & Thirunavukkarasu, 2014). The generation of insufficient returns may result in unsustainable business practices and the inability to satisfy other stakeholders. The general expectation is that large companies generate more returns than smaller companies because large companies can quickly gain access to capital markets (John & Adebayo, 2013; Abbasi & Malik, 2015). This result contradicts the

http://dx.doi.org/10.21511/imfi.17(4).2020.23

four-capital model, which suggests that manufactured, human, social, and environmental should be integrated into investment decisions. The result does not support the stakeholder theory suggesting that investment fund managers are motivated by profitability objectives at the expense of other stakeholders. Thus, this paper rejects the null hypothesis and accepts the alternative hypothesis.

H_5: *There is no correlation between ROE influencers and ROE.*

The result shows an insignificant negative relationship between book value per share, current ratio, interest cover, and ROE. This result contradicts Kharatyan et al. (2017) who found a positive relationship between the influencers and ROE. The negative relationship between the book value per share and ROE implies that companies generate lower returns from assets. Theoretically, the more the company uses the assets, the more the book value is expected to decrease, and consequently, ROE increases. The negative relationship regarding the current ratio, interest cover, and ROE does not make logical sense. One would expect companies with high-interest cover and current ratio to make high ROE. On the other hand, the results show a significant and positive relationship between leverage factor, operating profit margin, total asset turnover, and ROE. Likewise, the positive relationship between price-earnings and ROE is insignificant. This result supports other earlier studies that a positive relationship between these ROE 'influencers' and ROE (Kijewska, 2016; Kharatyan et al., 2017). This implies that some of the selected companies with high assets turnover and operating profit margin are likely to have a high ROE. Thus, this paper rejects the null hypothesis and accepts the alternative hypothesis.

CONCLUSION

This study examined whether South African mutual fund companies considered selected ESG factors in investment decisions and the effect of the selected factors on financial performance. This study found that in making investment decisions, the selected mutual fund companies did not consider ESG factors. The proxied ESG factors have an insignificant negative relationship with firm performance. This is a sign that careful consideration of these factors can result in improvement in financial performance. Investment fund managers should consider educating the trustees, especially on the African continent, about the importance of incorporating ESG issues in investment decisions and of the benefits that emanate from such investments. If investors are at the forefront of sustainable business practices, it may force the investees to start taking ESG issues seriously by becoming aware of losing investments if they do not. Future studies could consider incorporating ESG indicators other than the proxies used in this study to examine responsible investment patterns among mutual fund managers.

AUTHOR CONTRIBUTIONS

Conceptualization: Michael Bamidele Fakoya, Segopotje Evonia Malatji.
Data curation: Michael Bamidele Fakoya, Segopotje Evonia Malatji.
Formal analysis: Michael Bamidele Fakoya, Segopotje Evonia Malatji.
Investigation: Segopotje Evonia Malatji.
Methodology: Michael Bamidele Fakoya.
Project administration: Michael Bamidele Fakoya.
Validation: Michael Bamidele Fakoya.
Writing – original draft: Segopotje Evonia Malatji.
Writing – review & editing: Michael Bamidele Fakoya.

REFERENCES

1. Abad, J., Lafuente, E., & Vilajosana, J. (2013). An Assessment of the OHSAS 18001 Certification Process: Objective Drivers and Consequences on Safety Performance and Labour Productivity. *Safety Science, 60,* 47-56. https://doi.org/10.1016/j.ssci.2013.06.011
2. Abbasi, A., & Malik, Q. (2015). Firms' Size Moderating Financial Performance in Growing Firms: An Empirical Evidence from Pakistan. *International Journal of Economics and Financial Issues, 5*(2), 334-339. Retrieved from http://www.econjournals.com/index.php/ijefi/article/download/1074/pdf
3. Ahern, K., & Dittmar, A. (2012). The Changing of Boards: The Impact on Firm Valuation of Mandated Female Board Representation. *The Quarterly Journal of Economics, 127,* 137-197. https://doi.org/10.1093/qje/qjr049
4. Albertini, E. (2013). Does Environmental Management Improve Financial Performance? A Meta-Analytical Review. *Organisation and Environment, 26*(4), 431-457. https://doi.org/10.1177/1086026613510301
5. Ali, Y. (2017). Carbon, Water and Land Use Accounting: Consumption vs Production Perspectives. *Renewable and Sustainable Energy Reviews, 67,* 921-934. https://doi.org/10.1016/j.rser.2016.09.022
6. Alshehhi, A., Nobanee, H., & Khare, N. (2018). The Impact of Sustainability Practices on Corporate Financial Performance: Literature Trends and Future Research Potential. *Sustainability, 10*(2), 494. https://doi.org/10.3390/su10020494
7. Arun, T., Almahrog, Y., & Aribi, Z. (2015). Female Directors and Earnings Management: Evidence from UK Companies. *International Review of Financial Analysis, 39,* 137-146. https://doi.org/10.1016/j.irfa.2015.03.002
8. Auer, B., & Schuhmacher, F. (2016). Do Socially (Ir)responsible Investment Pay? New Evidence from International ESG Data. *The Quarterly Review of Economics and Finance, 59,* 51-62. https://doi.org/10.1016/j.qref.2015.07.002
9. Auer, B. R. (2016). Do Socially Responsible Investment Policies Add or Destroy European Stock Portfolio Value. *Journal of Business Ethics, 135*(2), 381-397. https://doi.org/10.1007/s10551-014-2454-7
10. Baik, B., Chae, J., Choi, S., & Farber, D. B. (2013). Changes in Operational Efficiency and Firm Performance: A Frontier Analysis Approach. *Contemporary Accounting Research, 30*(3), 996-1026. https://doi.org/10.1111/j.1911-3846.2012.01179.x
11. Barnett, M., & Salomon, R. (2012). Does It Pay to Be Really Good? Addressing the Shape of the Relationship Between Social and Financial Performance. *Strategic Management Journal, 33*(11), 1304-1320. https://doi.org/10.1002/smj.1980
12. Bauer, R., & Smeets, P. (2015). Social Identification and Investment Decision. *Journal of Economic Behaviour and Organization, 117,* 121-134. https://doi.org/10.1016/j.jebo.2015.06.006
13. Bojan, R. (2007). The Four Capital Model, Matrix and Accounts. *Casopis za kritiko znanosti, Ljubljana, 34,* 227 (Spring). Retrieved from http://www.studentskazalozba.si/si/knjiga.asp?ID_knjiga=996
14. Chapple, L., & Humphrey, J. (2014). Does Board Gender Diversity Have a Financial Impact? Evidence Using Stock Portfolio Performance. *Journal of Business Ethics, 122,* 709-723. https://doi.org/10.1007/s10551-013-1785-0
15. Darmadi, S. 2013. Do Women in Top Management Affect Firm Performance? Evidence from Indonesia. *The International Journal of Business in Society, 13*(3), 288-304. https://doi.org/10.1108/CG-12-2010-0096
16. Edwards, D. (2015). *The Link Between Company Environmental and Financial Performance* (2nd ed.). New York: Routledge.
17. Ekins, P., Dresner, S., & Dahlström, K. (2008). The Four-Capital Method of Sustainable Development Evaluation. *European Environment, 18*(2), 63-80. https://doi.org/10.1002/eet.471
18. Elkington, J. 1994. *Cannibals with Forks: The Triple Bottom Line of the 21st Century.* Capstone, Oxford: New Society Publishers.
19. Escrig-Omedo, E., Rivera-Lirio, J., & Miñoz-Tores, M. (2017). Integrating Multiple ESG Investors Preferences into Sustainable Investment: A Fuzzy Multicriteria Methodological Approach. *Journal of Cleaner Production, 162,* 1334-1345. https://doi.org/10.1016/j.jclepro.2017.06.143
20. Esteban-Sanchez, P., de la Cuesta-Gonzalez, M., & Paredes-Gazquez, J. (2017). Corporate Social Performance and Its Relation with Corporate Financial Performance: The International Evidence in the Banking Industry. *Journal of Cleaner Production, 162,* 1102-1110. https://doi.org/10.1016/j.jclepro.2017.06.127
21. Fabius, R., Thayer., R. D., Konicki., D. L., Yarborough., C. M., Peterson., K. W., Isaac, F., Loeppke., R.R., Eisenberg, B. S., & Dreger, M. (2013). The Link Between Workforce Health and Safety and the Health of the Bottom Line: Tracking Market Performance of Companies that Nurture a "Culture of Health". *Journal of Occupational and Environmental Medicine, 55*(9), 993-1000. Retrieved from https://www.uspm.com/wp-content/uploads/2017/07/Fabius-R-Loeppke-R-et.al_.-JOEM-article-Link-between-Health-of-Workforce-and-Health-of-the-Bottom-Line-2-2-14.pdf
22. Fan, D., & Lo, C. K. Y. (2012). A Tough Pill to Swallow? The Impact of Voluntary Occupational Health and Safety

http://dx.doi.org/10.21511/imfi.17(4).2020.23

Management System on the Firm Financial Performance in fashion and textiles industries. *Journal of Fashion Marketing and Management, 16*(2), 128-140. https://doi.org/10.1108/13612021211222798

23. Freeman, R. (1984). *Strategic Management: A Stakeholder Approach.* United States of America: Boston: Pitman.

24. Friedman, M. (1970). The Social Responsibility of Business is to Increase Its Profit. *The New York Times Magazine.* Retrieved from http://umich.edu/~thecore/doc/Friedman.pdf (accessed on May 20, 2018).

25. Handajani, L., Subroto., B., Sutrisco, T., & Saraswati, E. (2014). Does Board Diversity Matter on Corporate Social Disclosure? An Indonesian Evidence. *Journal of Economic and Sustainable Development, 5*(9), 8-16. Retrieved from https://www.iiste.org/Journals/index.php/JEDS/article/viewFile/13207/13320

26. Harrison, J., Freeman, R., & Abreu, M. (2015). Stakeholder Theory as an Ethical Approach to Effective Management: Applying the Theory to Multiple Contexts. *Review of Business Management, 17*(55), 858-869. https://doi.org/10.7819/rbgn.v17i55.2647

27. Harrison, J. S., & Wicks, A. C. (2013). Stakeholder Theory, Value, and Firm Performance. *Business Ethics Quarterly, 23*(1), 97-124. https://doi.org/10.5840/beq20132314

28. Haslam, C., O'Hara, J., Kazi., A., Twumasi, R., & Haslam, R. (2016). Proactive Occupational Health and Safety Management: Promoting Good Health and Good Business. *Safety Science, 81,* 99-108. https://doi.org/10.1016/j.ssci.2015.06.010

29. Huang, J., & Kisgen, D. (2013). Gender and Corporate Finance: Are Male Executives Overconfident Relative to Female Executive? *Journal of Financial Economics, 108,* 822-839. https://doi.org/10.1016/j.jfineco.2012.12.005

30. Husted, B., & Milton de Sousa-Filho, J. (2017). The Impact of Sustainability Governance, Country Stakeholder Orientation, and Country Risk on Environmental, Social and Governance Performance. *Journal of Cleaner Production, 155,* 93-102. https://doi.org/10.1016/j.jclepro.2016.10.025

31. Jin, A. (2014). Energy Consumption, Greenhouse Gases Emissions, Water Usage and Waste Practices: Evidence from Top Global 100 Firms in the Area of Sustainability. *Journal of Strategic Innovation and Sustainability, 10*(1), 49-64. Retrieved from http://www.m.www.na-business-press.com/JSIS/AJinWeb10-1.pdf

32. Jo, H., Song, M., & Tsang, A. (2016). Corporate Social Responsibility and Stakeholder Governance Around the World. *Global Finance Journal, 29,* 42-69. https://doi.org/10.1016/j.gfj.2015.04.003

33. John, A., & Adebayo, O. (2013). Effect of Firm Size on Profitability: Evidence from the Nigerian Manufacturing Sector. *Prime Journal of Business Administration and Management (BAM), 3*(9), 1171-1175. Retrieved from https://mtu.edu.ng/mtu/oer/journals/38-AkinyomiandOlagunju.pdf

34. Kharatyan, D., Lopes, J., & Nunes, A. (2017). Determinants of Return on Equity: Evidence from NASDAQ 100. *XXVII Jornadas Hispano-Lusas Gestión Científica.* Retrieved from http://hdl.handle.net/10198/14213

35. Kijewska, A. (2016). Determinants of the Return on Equity Ratio (ROE) on the Example of Companies from Metallurgy and Mining Sector in Poland. *Metalurgija, 55*(2), 285-288. Retrieved from https://hrcak.srce.hr/146696

36. Korditabar, S. (2015). A Model for Sustainable Value Creation in Supply Chain. *Science Journal, 36*(3), 395-401. Retrieved from https://dergipark.org.tr/en/pub/cumuscij/issue/45132/564322

37. Levi, M., Li, K., & Zhang, F. (2014). Directors Gender and Mergers and Acquisitions. *Journal of Corporate Finance, 28,* 185-200. https://doi.org/10.1016/j.jcorpfin.2013.11.005

38. Lin, R. J., Tan, K. H., & Geng, Y. (2013). Market demand, green product innovation, and firm performance: evidence from Vietnam motorcycle industry. *Journal of Cleaner Production, 40,* 101-107. https://doi.org/10.1016/j.jclepro.2012.01.001

39. Liu, Y., Wei, Z., & Xie, F. (2014). Do Women Directors Improve Firm Performance in China? *Journal of Corporate Finance, 28,* 169-184. https://doi.org/10.1016/j.jcorpfin.2013.11.016

40. Loeppke, R. R., Hohn, T., Baase., C., Bunn, W.B., Burton. W. N., Eisenberg, B. S., Ennis., T., Fabius, R., Hawkins, R. J., Hudson, T. W., & Hymel, P. A. R. (2015). Integrating Health and Safety in the Workplace: How Closely Aligning Health and Safety Strategies Can Yield Measurable Benefits. *Journal of Occupational and Environmental Medicine, 57*(5), 585-597. https://doi.org/10.1097/JOM.0000000000000467

41. Low, D., Roberts, H., & Whiting, R. (2015). Board Gender Diversity and Firm Performance: Empirical Evidence from Hong Kong, South Korea, Malaysia and Singapore. *Pacific-Basin Finance Journal, 35*(Part A), 381-401. https://doi.org/10.1016/j.pacfin.2015.02.008

42. Lückerath-Rovers, M. (2013). Women on Boards and Financial Performance. *Journal of Management and Governance, 17,* 491-509. https://doi.org/10.1007/s10997-011-9186-1

43. Mans-Kemp, N., & Viviers, S. (2015). Investigating Board Diversity in South Africa. *Journal of Economic and Financial Sciences, 8*(2), 392-414. Retrieved from https://hdl.handle.net/10520/EJC177417

44. Manzhynski, S., Figge, F., & Hassel, L. (2015). Sustainable Value Creation of Nine Countries of the Baltic Region. Value, Changes and Drivers. *Journal of Cleaner Production, 108,* 637-

646. https://doi.org/10.1016/j.jclepro.2015.07.027

45. Nekhili, A., Nagati, H., Chtioui, T., & Nekhili, A. (2017). Gender-Diverse Board and the Relevance of Voluntary CSR Reporting. *International Review of Financial Analysis, 50,* 81-100. https://doi.org/10.1016/j.irfa.2017.02.003

46. Nekhili, M., & Gatfaoui, H. (2013). Are Demographics Attributes and Firm Characteristics Drivers of Gender Diversity? Investigating Women's Position of French Boards of Directors. *Journal of Business Ethics, 118,* 227-249. https://doi.org/10.1007/s10551-012-1576-z

47. Niresh, A., & Thirunavukkarasu, V. (2014). Firm Size and Profitability: A Study of Listed Manufacturing Firms in Sri Lanka. *International Journal of Business and Management, 9*(4), 57-64. Retrieved from https://ssrn.com/abstract=2422441

48. O'Connor, M. (2007). The "Four Spheres" Frameworks for Sustainability. *Ecological Complexity, 3,* 285-292. https://doi.org/10.1016/j.ecocom.2007.02.002

49. Pagalung, A. (2016). Environmental Management Accounting: Identifying Future Prospects. *Asia-Pacific Management Accounting Journal, 11*(1), 80-94. Retrieved from http://ir.uitm.edu.my/id/eprint/16068

50. Pervan, M., & Višić, J. (2012). Influence of Firm Size on its Business Success. *Croatian Operational Research Review, 3*(1), 213-223. Retrieved from https://hrcak.srce.hr/96821

51. Pilaj, H. (2017). The choice architecture of sustainable and responsible investment: Nudging investors toward ethical decision-making. *Journal of Business Ethics, 140*(4), 743-753. Retrieved from https://link.springer.com/article/10.1007/s10551-015-2877-9

52. Probst, T., Jiang, L., & Graso, M. (2016). Leader-Member Exchange: Moderating the Health and Safety of Insecurity. *Journal of Safety Research, 56,* 47-56. https://doi.org/10.1016/j.jsr.2015.11.003

53. Rao, K., & Tilt, C. (2016). Board Composition and Corporate Social Responsibility: The Role of Diversity, Gender, Strategy and Decision Making. *Journal of Business Ethics, 138*(2), 327-347. https://doi.org/10.1007/s10551-015-2613-5

54. Santos, G., Barros., S., Mendes, F., & Lopes, N. (2013). The Main Benefits Associated with Health and Safety Management Systems Certification in Portuguese Small and Medium Enterprises Post Quality Management System Certification. *Safety Science, 51*(1), 29-36. https://doi.org/10.1016/j.ssci.2012.06.014

55. Şener, I., & Karaye, A. (2014). Board Composition and Gender Diversity: Comparison of Turkish and Nigerian Listed Companies. *Procedia-Social and Behavioural Sciences, 150,* 1002-1011. https://doi.org/10.1016/j.sbspro.2014.09.112

56. Severo, E. A., de Guimarães, J. C. F., Dorion, E. C. H., & Nodari, C. H. (2015). Cleaner production, environmental sustainability and organizational performance: an empirical study in the Brazilian Metal-Mechanic industry. *Journal of Cleaner Production, 96,* 118-125. https://doi.org/10.1016/j.jclepro.2014.06.027

57. Shim, E. (2014). Sustainability, Stakeholders Perspective and Corporate Success: A Paradigm Shift. *International Journal of Business, Humanities and Technology, 4*(5), 64-67. Retrieved from https://digitalcommons.sacredheart.edu/wcob_fac/401/

58. Shkura, I. (2017). Socially Responsible Investment in Ukraine. *Journal of Economics and Management, 27*(1), 75-95. Retrieved from https://www.sbc.org.pl/dlibra/publication/285455/edition/270045/content?ref=desc

59. Singal, M. (2014). The Link between Firm Financial Performance and Investment in Sustainability Initiatives. *Cornell Hospitality Quarterly, 55*(1), 19-30. https://doi.org/10.1177/1938965513505700

60. Sobhani, A., Wahab, M., & Neumann, W. (2015). Investigating Work-Related Ill Health Effects in Optimizing the Performance of Manufacturing Systems. *European Journal of Operational Research, 241,* 708-718. https://doi.org/10.1016/j.ejor.2014.09.032

61. Song, H., Zhao, C. & Zeng, J. (2017). Can Environmental Management Improve Financial Performance: An Empirical Study of A-Shares Listed Companies in China. *Journal of Cleaner Production, 141,* 1051-1056. https://doi.org/10.1016/j.jclepro.2016.09.105

62. Stankevičienė, J., & Čepulytė, J. (2014). Sustainable Value Creation: Coherence of Corporate Social Responsibility and Performance of Socially Responsible Investment Funds. *Economic Research-Ekonomskai straživanja, 27*(1), 882-898. Retrieved from https://hrcak.srce.hr/171366

63. Zulkafli, A., Ahmad, Z., & Ermal, E. (2017). The Performance of Socially Responsible Investments in Indonesia: A Study of Kehati Index (SKI). *Gadjah Mada International Journal of Business, 19*(1), 59-76. https://doi.org/10.22146/gamaijb.17959

http://dx.doi.org/10.21511/imfi.17(4).2020.23