

A Study on Effect of Environment, Social and Governance Score on Financial Performance of BSE-30 Companies in India

Dr. Sanjay J. Bhayani

*Professor in Management
Department of Business Management
Saurashtra University, Rajkot
E-mail: sjbhayani@gmail.com*

Dr. Butalal Ajmera

*Associate Professor
Department of Commerce
M.K. Bhavnagar University
E-mail: butalal.ajmera@gmail.com*

Abstract

An attempt has been made by researcher to examine the effect of ESG score, environment score, social score and governance score on financial performance. The researcher has built four models for this purpose. Secondary data have been used. Sample size is BSE-30 companies. Correlation matrix indicates that ROA has significant correlation with social. ROCE has significant correlation with social and ROA. Enterprise value has significant correlation with ROCE and size. Stock price has also significant correlation with ROA, ROCE and size. ESG has significant correlation with Environment score, Social score, governance score and leverage. Model -1 suggested that ESG, environment score Social score and governance score are insignificant ROA. But size is significant to ROA. Model-2 explain that size is the only variable which affects significantly on ROCE. ESG, environment score, Social score and governance score are insignificant to ROCE. Model-3 explains that ESG, Environment score, social score and governance score have insignificant effect on enterprise value. Beta has significant effect on ROCE. Model-4 indicates that size has been significant to stock price. But ESG score, environment score, social score and governance score have been insignificant

Key words: ESG score, Environment, Social, Governance, financial performance, BSE-30 Companies

1. Introduction

There are many changes in performance measurement parameters. Earlier performance measurement like profitability, economic value added, balance score card was very important for stakeholders. But now investors expect that overall performance should be measured. Experts have developed ESG disclosure score to measure the performance of the firm. Besides, financial performance, environmental, social and governance performance is very important for stakeholders. Many consultant firms have developed composite index to measure ESG disclosure score. Price water house is one such firm who has developed matrix to measure ESG score. For ESG score parameters have been developed for environmental issues, social activities and governance measurement. Environment issue includes three parameters –Resources use, emissions and innovation, Social issues includes workforce, human rights, community and product responsibility, Governance includes management, stakeholders and corporate social responsibility strategy. Environment is damaged by company. Therefore it is expected from company to take environment on the planet. Government, society and stakeholders also expect that company should contribute something to reduce the pollution like air pollution, voice pollution and water pollution etc. A company is highly

appreciated by the society, if the company is taking care of environment issue. Company is benefited by tax department if the company reduces carbon gas emission. It is also known as carbon credit. Another very important aspect is social activities being carried out by the firms. More are the activities, higher is the score obtained by the company. Company act-2013 made it compulsory for each listed company to spare 2% of the net profit for social activities. What company does for humanity and community matters a lot for stakeholders. The Growth and development of the firm depends on vision and mission framed by top management. Top management is composition of CEO, Directors, executives' directors, independent directors and non executive director. Role of governance is to give direction to the firm. There should be three important things of good corporate governance-transparency, accountability & fairness and responsibility etc. Researcher has combined all three components of environment, social and governance and calculated composite disclosure score.

2. Review of literature

Considering the title of the research paper, following review of literature has been done:

Alemydal and Darmansyah (2019) did research on the influence of environment, social and governance disclosure on firm financial performance during the study period of 2014 to 2018. Researcher has built eight models for regression. First model was on ROA and ESG score, ROA and environment score, social score and governance score. Third model was ROC and ESG score, fourth model was on ROC and environment score, social score and governance score, fifth mode was on stock price and ESG score, sixth model was stock price environment score, social score and governance score, seventh model on P/E ratio and ESG score and eighth model was on environment score, social score and governance score. The first model revealed that ROA and ESG score are significant, second model revealed that ROA and governance score are significant, third model explains that ROC and ESG score are significant, fourth model say that ROC, environment score and governance score are significant. Fifth model revealed that stock price and ESG score are significant, seventh model revealed that stock price and environment score are significant, eight model revealed that stock price and social and governance are significant. Machmuddah and Wardhani (2019) worked on environmental social government disclosure score rating of Bloomberg during the study period of 2014 to 2018. Research compared the ESG score of the companies of 22 countries. Shri lanka has the highest average ESG score; Whereas Turkey has the highest average ESG score of governance performance. Bahrain has lowest average ESG score, social score and governance score. Oman has the lowest environment score. Balatbat et al. (2012) worked on ESG score and its influence on firm performance evidence from Australia during the period of 2008 to 2010. The researchers have studied 11 sectors' ESG score. They have built regression model to study the effect of ESG score on EV. ESG score and size of the firms are significant to EV, whereas leverage and growth have been insignificant to the economic value added. Egorova et al. (2022) did research on the impact of ESG factors on the performance of information technology companies. The researcher has built model to examine the impact of ESG factors on performance. The hypothesis of this paper was to test the effect on ESG score on market value of the selected firms. The Researcher has considered Thomson Reuters Eikon ESG score. The time period of 10 years were considered. Barbarić (2021) wrote master thesis in economic which indicates that the researcher has used secondary data to test the ESG scores and financial performance of Swedish-listed companies. He used two variables for financial performance- ROA and Tobin's Q. The model -1 suggested that ESG and environment score have significant effect on ROA; model-2 suggested that ESG, environment score, Social score and governance score have insignificant effect on Tobin's Q. Kim and Li (2021) researched on understanding the impact of ESG practices in corporate Finance. The researcher used secondary data to

study the impact of ESG score on financial performance. Return on assets has no significant relationship with environment, social, governance score and total score. Whereas credit rating has no significant relationship with Total score, environment score, Social score and governance score. Shaikh (2021) worked on environmental, social and governance ESG practice and firm performance during the study period 2010 to 2018. He used regression model to test the hypothesis about the effect of ESG score on financial performance. Model-1 suggested that ESG score has significant effect on ROA, ROE and Tobin's Q with 1% level of significance. The researcher has also tested the effect on sub categories of ESG score which explained that Environment score is significant with ROA and Tobin's Q with 1% level of significance. Whereas Social score has significant effect on ROE at 1% level of significant. Social score has significant effect on Tobin's Q at 10% level of significance. Duque-Grisales and Aguilera-Caracuel (2019) worked on environmental, social and governance and its effect on financial performance. The researcher used secondary data from 2011 to 2015. The sample size includes 104 companies from Brazil, Chile, Colombia, Mexico and Peru. The Result of the research revealed that ESG score has negative but significant effect. Tarmuji et al. (2016) worked on the impact of environment, Social and Governance practices on economic performance during the study period of 2010 to 2014. Researcher selected companies from two countries Malaysia and Singapore. The result of Malaysian Companies revealed that Environment score and social score have insignificant effect on economic performance and governance has significant effect on economic performance. Whereas in Singapore environment and governance score have insignificant effect on economic performance and Social score has significant effect on economic performance. Ionescu et al. (2019) did research on the impact of ESG factors on market value of companies from travel and tourism industry during the study period 2010 to 2015. The researcher selected 73 listed companies. The research result indicated that ESG score is significant factor for market value.

3. Research Gap

From the above review of literature researcher found that most of research works have been done in western word and most of the work done for the master thesis by the student of business school. Very few researches have been carried out in India and that too with only few companies. Here researcher has selected BSE-30 companies. Moreover, researcher has tested all main factors and sub factors of ESG.

4. Objectives

Considering the title of the study, following objectives have been set by researcher.

- (a) To study ESG score of BSE-30 companies.
- (b) To Analyze correlation between ESG score and financial performance of BSE-30 companies.
- (c) To examine the effect of ESG score on financial performance of BSE-30 companies.
- (d) To give constructive suggestion for decision making.

5. Research Methodology

The research is based on secondary data drawn from financial statement of respective companies, Prowess database and www.refinitiv.com. The sample size is BSE-30 companies with time period of 2021. The research is analytical research. Accounting ratios, Descriptive statistics, Correlation matrix, multiple regression have been used.

Model

Researcher built following model to examine the effect of ESG score on financial performance.

Models

1. $ROA = \beta_0 + \beta_1(ESG) + \beta_2(ES) + \beta_3(SS) + \beta_4(GS) + B_5(Size) + B_6(Lev) + B_7(Beta) + U_{it}$
2. $ROCE = \beta_0 + \beta_1(ESG) + \beta_2(ES) + \beta_3(SS) + \beta_4(GS) + B_5(Size) + B_6(Lev) + B_7(Beta) + U_{it}$
3. $EV = \beta_0 + \beta_1(ESG) + \beta_2(ES) + \beta_3(SS) + \beta_4(GS) + B_5(Size) + B_6(Lev) + B_7(Beta) + U_{it}$
4. $Stock\ price = \beta_0 + \beta_1(ESG) + \beta_2(ES) + \beta_3(SS) + \beta_4(GS) + B_5(Size) + B_6(Lev) + B_7(Beta) + U_{it}$

Table 1: Description about the selected variables

Dependent variables	Description
ROA	This is the measure for financial performance. The formula is The ratio of net income to total assets
ROCE	This is also measure of financial performance which is calculated by earnings before interest tax divided by Net capital employed.
EV	Enterprise value means market capitalization+ Market value of the firm- cash and equivalent
Stock price	Closing stock of respective companies
Independent variables	
ESG	It is score of three component Environment, Social and Governance developed by Definitive(2021)
Environment (ES)	It measure the effect of company on environment like emission, use of resources , innovation, air, land , water and ecosystem
Social (SS)	It measures the company's effect on society which includes human rights, product responsibility, work force and community
Governance (GS)	Governance measures of selected companies system and process which ensure that the company is doing best for its stakeholders. This measure includes management, shareholders and CSR strategy
Size	Log of total assets
Leverage	Debt equity ratio is taken as leverage
Beta	Beta is the measure of systematic risk. It is a covariance of price movement relative to the market's price movement.

Table-2: Descriptive statics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
ESG	30	29.0	90.0	65.467	15.4557	238.878	-.359	.427	-.345	.833
Env.	30	11.0	97.0	58.867	21.7885	474.740	-.252	.427	-.040	.833
Social	30	26.0	94.0	74.300	15.5301	241.183	1.053	.427	1.704	.833
Governance	30	13.0	90.0	56.067	23.0845	532.892	-.198	.427	-1.014	.833
ROA	30	-6.42	27.03	7.5457	8.07405	65.190	.921	.427	.250	.833
ROCE	30	-9.42	97.20	12.8127	18.55539	344.302	3.453	.427	15.054	.833
size	30	4.91	7.69	6.26	0.65	.423	.087	.427	-.216	.833
Leverage	30	0.00	3.47	.9257	.94255	.888	.970	.427	.284	.833
stock price	30	106.55	17165.20	2619.53	3581.38	12826262.14	2.79	0.43	9.08	0.83
EV	30	5.71	7.18	6.40	0.36	.129	.279	.427	-.138	.833
Beta	30	.52	2.04	1.0127	.40631	.165	.698	.427	-.406	.833

Table-1 indicates descriptive statistics of selected variables. ESG score of BSE-30 companies have been on an average of 65.46 and standard deviation was 15.45. ESG skewness is negative which means that mean of the data set is less than median. Skewness indicates that the data are symmetrically distributed or not. Kurtosis indicates negative value which means that more data value is found near the mean of the data set. Mean of environment score is 58.86 and standard deviation is 21.78%. Skewness is negative which is not good whereas kurtosis is also negative which is also not good. Social score is 74.30 with variance of 241.18%. Skewness is negative which means that it is within acceptable value of -3 and +3. Whereas the value of kurtosis is positive this is greater than zero. Governance average score is 90 which is lowest than environment and social. Governance kurtosis is negative and skewness is also negative. Mean of ROA is 7.54 which are considered quit lower. The skewness and kurtosis are negative which means that more value of data set is near to mean of the data set. Mean of ROCE is 12.81 and standard deviation of ROCE is 18.55 which show little fluctuations in returns. The skewness is 3.45 which is positive and outliers of data lied on right side. The kurtosis is ROCE is 15.05 which show positive and it is interpreted that the data is has heavy tailed. Mean of size and leverage is 6.25 and 0.92 respectively. Mean of stock is 2619.53 with very high standard deviation of 3581.38%. Skewness is positive and kurtosis is also positive. The mean of EV and beta is 6.40 and 1.01 with the positive skewness and negative kurtosis.

Table 3: Correlation Matrix

Correlation matrix											
Variables	ESG	Env.	Social	Gov	ROA	ROCE	size	Lev	stock price	EV	Beta
ESG	1										
Env.	.777*	1									

Social	.851*	.635*	1								
Governance	.727*	.304	.394*	1							
ROA	.345	.124	.453*	.253	1						
ROCE	.278	.060	.414*	.179	.839**	1					
size	-.099	.025	-.120	-.137	-.674**	-.589**	1				
Leverage	-.519*	-.364*	-.603*	-.341	-.672**	-.503**	.500*	1			
stock price	-.073	-.229	.008	-.035	.373*	.667**	-.431*	-.067	1		
EV	.003	-.265	-.017	.240	.127	.036	.378*	.022	-.077	1	
Beta	-.248	-.044	-.282	-.262	-.650**	-.463**	.485*	.521**	-.030	-.297	1
**. Correlation is significant at the 0.01 level (2-tailed).											
*. Correlation is significant at the 0.05 level (2-tailed).											

Table-3 indicates correlation matrix of selected dependent and independent variable. ESG and Environment score have positive and significant correlation. ESG and Leverage have negative and significant correlation. ESG has positive and insignificant correlation with ROA, Social, governance, ROCE and EV. ESG has negative and insignificant relationship with Size and Beta. Environment score positive and significant correlation with Social score and negative and significant correlation with ROCE and Leverage. Social score has positive and significant correlation with ROCE and negative correlation with leverage. ROA has positive and significant correlation with ROCE and negative and significant correlation with Leverage, stock price and beta. Size has positive and significant correlation with leverage and EV and negative correlation with stock price. Leverage has significant and positive correlation with beta.

Table-4: Regression Model Summary (ROA as dependent variable)

Regression Model Summary (ROA as dependent variable)				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.837 ^a	.701	.606	5.06903
a. Predictors: (Constant), Beta, Env., Gov., size, Leverage, Social, ESG				

Table- 4 indicates R square of 0.701 which means that combine effect on independent variable of Beta, Environment score, Governance, size, leverage, social score and ESG has been 70.10 percentages on Return on assets.

Table-5: ANOVA table of selected variable.

ANOVA table of selected variable.						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1325.228	7	189.318	7.368	.000 ^b
	Residual	565.292	22	25.695		
	Total	1890.520	29			
a. Dependent Variable: ROA						
b. Predictors: (Constant), Beta , ENV, GOV., size , Leverage , Social, ESG						

Table-5 explains the ANOVA test of dependent and predictors. The calculated value of f is 7.36 and P-value is 0.000 which is less than 0.05. Hence alternative hypothesis is accepted and concluded that the result is significant which means that the model is fit.

Table-6: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.815	10.996		3.439	.002
	ESG	-.083	.464	-.160	-.180	.859
	Env.	-.029	.131	-.078	-.219	.828
	Social	.195	.243	.375	.800	.432
	Gov.	.018	.146	.051	.123	.903
	size	-5.030	1.839	-.405	-2.735	.012
	Leverage	-1.651	1.643	-.193	-1.005	.326
	Beta	-5.514	2.914	-.278	-1.893	.072
a. Dependent Variable: ROA						

Table-6 shows coefficient and value of t test. The coefficient explains that effect of independent variable on dependent variable. ESG, Environment score, Size, Leverage have negative and insignificant effect on ROA whereas Beta has negative but significant effect on ROA. Hence it is concluded that ROA has been affected by beta significantly.

Table 7: Model Summary (ROCE is dependent variable)

Model Summary (ROCE is dependent variable)				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717 ^a	.515	.360	14.84327
a. Predictors: (Constant), Beta , Env., Gov., size , Leverage , Social , ESG				

Table-7 shows that r-square is 0.717 which means that independent variables like Beta, Env. Gov., size, Leverage, Social, ESG have combine effect of 71.70 percentage on ROCE.

Table 8: ANOVA

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	Sig.
1	Regression	5137.673	7	733.953	.014 ^b

	Residual	4847.096	22	220.323		
	Total	9984.769	29			
a. Dependent Variable: ROCE						
b. Predictors: (Constant), Beta , E, G, size , Leverage , S, ESG						

Table -8 explains the ANOVA test of dependent and predictors. The calculated value of F is 3.33 and P-value is 0.014 which is more than 0.05. Hence null hypothesis is accepted and concluded that the result is insignificant which means that the model is not fit.

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.965	32.198		2.266	.034
	ESG	-.276	1.360	-.230	-.203	.841
	Env.	-.127	.384	-.149	-.330	.744
	Social	.700	.713	.586	.982	.337
	Gov.	.051	.427	.064	.120	.905
	size	-13.455	5.386	-.471	-2.498	.020
	Leverage	-.145	4.810	-.007	-.030	.976
	Beta	-5.127	8.531	-.112	-.601	.554
a. Dependent Variable: ROCE						

Table-9 explains that ESG, Environment score, Social score, beta and leverage have insignificant and negative effect on ROCE. However Size has significant and negative effect on ROCE. Social and Governance score have positive and insignificant effect on ROCE.

Table 10: Model Summary (Dependent variable is Enterprise value)

Model Summary (Dependent variable is Enterprise value)				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.796 ^a	.633	.516	.249364110744837
a. Predictors: (Constant), Beta , Env., Gov., size , Leverage , Social, ESG				

Table-10 shows value of r square of 0.633 which means that beta, Environment, Governance score, size, leverage, social and ESG have 63.30 effects on ROCE.

Table 11: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.359	7	.337	5.420	.001 ^b
	Residual	1.368	22	.062		
	Total	3.727	29			
a. Dependent Variable: EV						
b. Predictors: (Constant), Beta , Env, Gov, size , Leverage , Social, ESG						

Table-10 shows ANOVA table of Dependent and predictors. The F value is 5.420 and p- value is 0.01 which is less than 0.05. Hence alternative hypothesis is accepted and it is concluded that model is fit.

Table 12: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.468	.541		8.260	.000
	ESG	.005	.023	.231	.234	.817
	Env.	-.009	.006	-.538	-1.370	.184
	Social	-.002	.012	-.096	-.185	.855
	Gov.	.003	.007	.187	.405	.689
	size	.420	.090	.762	4.646	.000
	Leverage	-.058	.081	-.151	-.712	.484
	Beta	-.470	.143	-.533	-3.280	.003
a. Dependent Variable: EV						

Table12 shows coefficient of predictors and dependent variable. The Size and beta have significant effect on enterprise value and ESG, environment score, social score and governance score have insignificant effect on enterprise value.

Table 13: Model Summary (Stock price as dependent variable)

Model Summary (Stock price as dependent variable)				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578 ^a	.334	.122	3355.00828
a. Predictors: (Constant), Beta , Env., Gov., size , Leverage , Social, ESG				

Table13 indicates that total effect on predictors like Beta, environment score, governance score, size, leverage, social and ESG on Stock price. The effect in term of percentage has been 57.80 on stock price.

Table 14: ANOVA^a

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	124327829.826	7	17761118.547	1.578	.194 ^b
	Residual	247633772.098	22	11256080.550		
	Total	371961601.923	29			
a. Dependent Variable: stock price						
b. Predictors: (Constant), Beta , E, G, size , Leverage , S, ESG						

Table- 14 shows ANOVA of Dependent variable and Predictors. The P-value is less than significant value of 0.194. Hence the alternative hypothesis is rejected and concluded that that mode is not fit.

Table 15: Coefficients

Coefficients				
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	17823.416	7277.690		2.449	.023
	ESG	221.756	307.408	.957	.721	.478
	Env.	-114.256	86.885	-.695	-1.315	.202
	Social	-28.443	161.158	-.123	-.176	.862
	Gov.	-69.532	96.601	-.448	-.720	.479
	size	-3122.705	1217.308	-.567	-2.565	.018
	Leverage	400.142	1087.237	.105	.368	.716
	Beta	2160.000	1928.361	.245	1.120	.275
a. Dependent Variable: stock price						

Table-15 indicates of coefficient of dependent and predictors. The Size has significant and negative effect on stock price. ESG, Leverage and Beta have insignificant and positive effect on Stock price. Environment score and Governance have insignificant and negative effect on stock price.

8. Conclusion

From the above data analysis is conclude that mean of ESG, environment score, social score and Governance score are 65.47, 56.86, 74.30 and 56.06 respectively. Variance and standard deviation of stock, ESG, Environment score, and governance score are also very high showing high fluctuations. Skewness and kurtosis of ESG, Environment score, and Governance are negative and very low. Correlation matrix indicates that ROA has significant correlation with social. ROCE has significant correlation with social and ROA. Enterprise value has significant correlation with ROCE and size. Stock price has also significant correlation with ROA, ROCE and size. ESG has significant correlation with Environment score, Social score, governance score and leverage. The researcher has developed four models to examine the effect of ESG score on financial performance. Model-1 explains that ESG, environment score Social score and governance score are insignificant ROA. But size is significant to ROA. Model-2 explain that size is the only variable which affects significantly on ROCE. ESG, environment score, Social score and governance score are insignificant to ROCE. Model-3 explains that ESG, Environment score, social score and governance score have insignificant effect on enterprise value. Beta has significant effect on ROCE. Model-4 indicates that size has been significant to stock price. But ESG score, environment score, social score and governance score have been insignificant

References

- Almeyda, R., & Darmansyah, A. (2019). The Influence of Environmental, Social, and Governance (ESG) Disclosure on Firm Financial Performance. *IPTEK journal of proceedings*, 5 (2019), 278-290.
- Balatbat, M.C.A., Siew, R.Y.J., & Carmichael, D.G. (2012, September 14), "ESG scores and its influence on firm performance: Australian evidence. *Australian School of Business School of Accounting, School of Accounting Seminar Series Semester 2*, 2012, 1-30. https://www.researchgate.net/publication/260907931_ESG_Scores_and_its_Influence_on_firm_performance_Australian_Evidence
- Barbarić, M. (2021). *ESG scores and financial performance of Swedish-listed companies – Is there a link?* Master Thesis in Economics, Jonkoping University, international Business School. <https://hj.diva-portal.org/smash/get/diva2:1590867/FULLTEXT01.pdf>

- Duque-Grisales, E., & Aguilera-Caracuel, J. (2021). Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack. *Journal of Business Ethics*, 168, 315–334. <https://doi.org/10.1007/s10551-019-04177>
- Egorova, A.A., Grishunina, S.V., & Karminsky, A.M. (2022). The Impact of ESG factors on the performance of Information Technology Companies. *Procedia Computer Science* 199 (2022). 339–345. <https://publications.hse.ru/pubs/share/direct/563997475.pdf>
- Ionescu, G. H., Firoiu, D., Pirvu, R., & Vilag, R. D. (2019). The impact of ESG factors on market value of companies from travel and tourism industry. *Technological and Economic Development of Economy*, 25(5), 820-849. <https://doi.org/10.3846/tede.2019.10294>
- Kim, S., & Li, Z. (2021). Understanding the Impact of ESG Practices in Corporate Finance. *Sustainability*, 13(7). <https://DOI:10.3390/su13073746>
- Machmuddah, Z., & Wardhani, R. (2019). Environmental Social Governance (ESG) Disclosure Score Rating of Bloomberg. *Advances in Health Sciences Research*, 27, 48-52. <https://DOI:10.2991/ahsr.k.200723.011>
- Shaikh, I. (2021). Environmental, social, and governance (ESG) practice and firm performance: an international evidence. *Journal of Business Economics and Management*, 23(1), 218-237. <https://doi.org/10.3846/jbem.2022.16202>
- Tarmuji, I., Maelah, R., & Tarmuji, N.H. (2016). The Impact of Environmental, Social and Governance Practices (ESG) on Economic Performance: Evidence from ESG Score. *International Journal of Trade, Economics and Finance*, 7(3), 67-74. <https://DOI:10.18178/ijtef.2016.7.3.501>