SDGs, ESG Risk and Firm Operations--Evidence from S&P 500 Companies

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Abstract. This research collects and analyses the past data on Sustainable Development Goals (SDGs) in S&P 500 companies and its relationship with Environment, Social and Governance (ESG) Risk and firm operations. Our research creates a new standard to record the SDGs mentioned in companies' official websites and reports. Firstly, this study finds that SDGs have a strong explanatory power on ESG risk while they still have some differences. Secondly, Quality Education and Life below Water both have a positive effect on the Return on Equity of the companies, while Life on Land has a negative effect. Finally, for Tax to Earnings before Tax, this research finds that Zero Hunger, Industry, Innovation and Infrastructure, and Climate Action all have a positive effect on companies. In contrast, there is a negative effect on doing projects of Gender Equality and Partnership for the Goals. This research could give a reference for the companies, especially when they decide to plan to develop in sustainable areas, which could show a relatively comprehensive reference on their future short and long-term programs. It could also provide some thoughts and conclusions on the SDGs area, which give some ideas for researchers who will study this in the future.

Keywords: SDGs, ESG, return on equity (ROE), tax to earning before tax (TAXTOEBT).

1. Introduction

With the increasing focus on environmental protection and sustainable development worldwide, more and more companies are recognising the necessary to engage in sustainable projects [1]. Many companies also have programmes related to Environment, Social and Governance (ESG) to support sustainable development. These kinds of researches have already well been established [2]. In 2015, the United Nations launched the 2030 Agenda for Sustainable Development, which refers more specifically to sustainable development and provides a shared blueprint for peace and prosperity for people and the planet now and in the future. At its core are the 17 Sustainable Development Goals (SDGs), which are an urgent call to action for all countries in a global partnership [3]. However, there are few research on the SDGs than on ESG in business so far, making it difficult for companies to get clear directions when managers are making decisions about SDGs projects. To narrow the gap

in research on the SDGs, our research analyses the SDGs against ESG risk scores, return on equity (ROE) and tax to earnings before tax (TAXTOEBT) of companies. This paper uses innovative methods to collect and record the firm's SDGs attention, using regression analysis and fixed effect models to further analyse. Concerning ESG risk scores, this paper show that SDGs have a strong explanatory power on ESG risk and discuss the similarities and differences of these two. For ROE, this research notes that some of the goals, such as Quality Education and Life below Water, have a positive effect on the company, while Life on Land has a negative effect on it. And for TAXTOEBT, this paper demonstrate that Zero Hunger, Industry, Innovation and Infrastructure, and Climate Action all have a positive effect on the companies when companies doing projects on them. In contrast, there is a negative effect if doing projects of Gender Equality and Partnership for the Goals.This article begins with a brief overview of the background of the literature and concepts, followed by our literature review. Next, it describes the data collection and the methodology of the research. Finally, this paper shows the research results and conclusion.

2. Literature review

The alignment of corporate strategies with SDGs has become a critical area of study, particularly concerning its impact on ESG performance. Even business engagement in the SDGs is a new phenomenon, and empirical research is still sparse and fragmented [4]. The World Business Council for Sustainable Development posits that the integration of SDGs into corporate strategies accelerates the achievement of these objectives [5]. Also, Bogoviz et al., in their research, using a structural equation model approach that although companies' support for the SDGs varies across different regions of the world, the SDGs are still deeply integrated into corporate strategies in every region [6]. They argue that advancing the SDGs can enhance the effectiveness of corporate social responsibility and global risk management. Meanwhile, the link between sustainability initiatives and financial performance has been extensively explored in recent literature. Dyllick, T., & Muff, K. have suggested in their research that although many organisations are now beginning to note the SDGs, a huge disconnect is created between sustainable development and corporate sustainability [7]. While entering multinational enterprises into developing countries can enhance employment opportunities, it may also adversely affect local businesses by attracting and hiring skilled employees away from them [8]. But Van Zanten and Van Tulder researched the SDG engagement of 2000 multinational corporations, finding that Goal 5, Goal 12, Goal 13, Goal 16, and Goal 17 received substantial investment from these enterprises [9]. Van Zanten and Van Tulder suggest that multinational corporations need to increase their SDG investments [9]. From this, it can be inferred that investing in SDGs has a positive impact on corporate performance. Some studies suggest that ROE is weakly and negatively correlated with SDG reporting, which is not entirely consistent with our findings [10]. Then regarding the impact of this variable on corporate sustainability reporting (CSR), it has also been suggested in the literature that it is because of the negative correlation between ROE and CSR disclosure [11]. It has also been reported in the literature that ROE and CSR show a positive correlation [12, 13]. This means that further research may reveal other factors that influence the relationship between corporate performance and SDG reporting. From the above, there is a lack of understanding between the behaviour of firms involved in SDG and ESG, firm operations, suggesting that there is a research gap. To understand the relationship between SDG and ESG, firm operations, this study finds it necessary to address this issue.

3. Data and methodology

3.1. ESG risk scores, firm operations and control variables

This paper constructs our sample as follows. This paper selects companies in the Standard & Poor's 500 (S&P 500) as representative of the US market first. Then it downloads the 2023 S&P 500 ESG risk scores of the included companies from Sustainalytics, one of the world's leading providers of independent ESG ratings. Finally, it removes companies that do not participate in the ESG ratings from our sample, with 429 companies left. To control industries, this paper divides these companies into 11 segments according to the Global Industries Classification Standard (GICS). Referring to Rao et al., this paper uses Total Assets, Beta, Price to Cash Flow per Share, Total Debt Percentage of Equity, Total Debt Percentage of Equity, Date of Incorporation, Market Capitalization as our control variables [14]. This paper also collects Return on Equity (ROE), Tax to Earnings Before Tax (TAXTOEBT) as two indicators reflecting the company's operations. Table 1 reports the detailed meaning of each control variable mentioned above, while Table 2 reports the descriptive statistics. This table demonstrates our usage of the control variables referring to Rao et al. [14].

Table 1. Control variables used in regression [14]

Label	Variable	Brief	Use
TA	Total Assets	Proxy for the size of the firm	Represents the scale of a company's operations and its financial resources
BETA	Beta	Measures stock's sensitivity to market movements	Indicates the systematic risk associated with a company's stock
PCF	Price to Cash Flow per Share	Valuation metric comparing stock price and cash flow	Helps investors evaluate a stock's attractiveness based on cash flow generation
DE	Total Debt Percentage of Equity	Indicates the proportion of debt financing relative to equity	Provides insight into a company's capital structure and financial leverage
AGE	Date of Incorporation	Indicates the age of the company from the date of incorporation	It is typically measured in years and is often used as a metric to assess the company's experience, stability, and growth potential.
SIZE	Market Capitalization	Calculated by multiplying the company's share price by the total number of outstanding shares.	Commonly used as a metric to assess the size and relative value of a company.

Table 2. ESG risk scores, firm operations and control variables

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
TA	429	6,927.14	21,902.87	0.00	274,482.50
BETA	429	1.04	0.49	-0.58	2.64
PCF	429	16.79	24.98	-129.59	398.90
DE	429	67.08	27.83	0.00	343.02
AGE	428	41.22	23.29	6.33	124.08

SIZE	429	6,513.26	17,564.32	466.83	212,082.30
ROE	401	-35.81	1,278.27	-25,530.85	1,124.39
TAXTTOEBT	399	15.18	36.10	-372.85	362.50
Total_ESG_Risk_Score	429	21.54	6.90	7.10	41.70
Environment_Risk_Score	429	5.75	5.09	0.00	25.00
Governance_Risk_Score	429	6.71	2.18	3.00	19.40
Social_Risk_Score	429	9.08	3.66	0.80	22.50

This table reports the descriptive statistics of variables used to represent ESG risk, firm performance and to control firm characteristics. All these variables are collected from Wind, one of the most popular data providers in China.

3.2. Sustainable Development Goals (SDGs)

The next and the most important question is, how to represent companies' focuses on each of the SDGs? Since most companies put SDG icons when presenting SDG content, it strictly uses the presence of SDG icon as a dummy variable for each goal to measure the company's focus on this goal. This paper manually counts the presence of SDG icons for each company, but still limit our search to two sources. The first is the official websites of these companies. Some companies will disclose their level of interest in SDGs on their official website, hence the SDG icons. The second and the main source is their reports, involving Sustainability Reports, Corporate Social Responsibility (CSR) Reports, ESG Reports, Annual Reports and so on. Based on the presences of these icons of the goals, this paper construct 17 SDG dummies, with each dummy represent the observed companies' focuses on each goal. Table 3 reports the descriptive statistics of these dummies. This table reports the descriptive statistics of the SDG variables to represent SDG focus. These variables are collected as dummies.

Table 3. Sustainable Development Goals (SDGs)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
Goal_1	429	0.142	0.350	0	1
Goal_2	429	0.133	0.340	0	1
Goal_3	429	0.373	0.484	0	1
Goal_4	429	0.326	0.469	0	1
Goal_5	429	0.436	0.496	0	1
Goal_6	429	0.289	0.454	0	1
Goal_7	429	0.399	0.490	0	1
Goal_8	429	0.480	0.500	0	1
Goal_9	429	0.352	0.478	0	1
Goal_10	429	0.366	0.482	0	1
Goal_11	429	0.277	0.448	0	1
Goal_12	429	0.459	0.499	0	1
Goal_13	429	0.527	0.500	0	1
Goal_14	429	0.131	0.337	0	1

Goal_15	429	0.207	0.406	0	1
Goal_16	429	0.191	0.394	0	1
Goal_17	429	0.198	0.399	0	1

3.3. Methods

This paper mainly uses multiple linear regression in our study. For each regression, include and exclude industry fixed effects to ensure the robustness of our study. Control variables are also added when considering firm operations to reduce the impact of each company's own characteristics. The regression formula is as follows, where yi represents ESG Risk Scores or Firm Operations Variables depending on the topic are discussing, $SDG_{i,k}$ represents the dummy of the goal k in each regression, $\boldsymbol{Control_i}$ represents the six control variables and $\boldsymbol{ESG_i}$ represents the four ESG Risk Scores, all of which may be added when discussing firm operations.

$$y_i = \beta_{i,0} + \sum_{k=1}^{17} \beta_{i,k} SDG_{i,k} + \gamma_i \boldsymbol{Control_i} + \boldsymbol{\delta_i ESG_i} + u_i \dots \tag{1}$$

4. Results and discussion

4.1. SDGs and ESG risk

In this part, this paper examines the relationship between SDGs and ESG risk scores. Table 4 reports the regression results of SDGs on Total ESG Risk Score, Environment Risk Score, Governance Risk Score and Social Risk Score respectively, both before and after controlling for industry fixed effects.

Among those results, this paper note that Goal 3 (Good Health and Well-being) is positively associated with Total ESG Risk Score (significant at the 10% level) with a coefficient of 1.641 before controlling for industry fixed effects and 1.339 after controlling for industry fixed effects, and positively correlated with Governance Risk Score after controlling for industry fixed effects. The insistence of Good Health and Well-being seems not to increase the ESG performance of the company. Goal 11 (Sustainable Cities and Communities) is positively correlated with Governance Risk Score (significant at the 10% level before and after controlling for industry fixed effects), indicating those insist their focus on sustainable cities and communities may face a higher risk of governance.

Meanwhile, Goal 5 (Gender Quality) is negatively associated with Environment ESG Risk Score (significant at the 1% and 10% level before and after controlling for industry fixed effects respectively), implying that those focus on gender equality are also more possible to be those having better ESG performance. Goal 12 (Responsible Consumption and Production) is negatively associated with Total ESG Risk Score (significant at the 5% level consistently) and Governance Risk Score (consistently significant at the 1% level), showing the attention on responsible products may reduce the risk of governance, therefore contributing to a lower ESG risks. This paper also finds a significant negative correlation between Goal 12 and Social Risk Score, showing the attention on responsible products may also lead to a lower Social Risk.

This paper also finds that the R-squares of the all ESG risk scores are among 10% before controlling industries, which means the SDGs can explain 10% of the variation in ESG risk scores. It is believed that though some of the SDGs are highly correlated with ESG performance, their

focuses are still quite different. Besides, the R-squares increase significantly after controlling industries, demonstrating that ESG risk scores.

Table 4. Regression results of SDGs on ESG risk scores

VARIABLES	(1) Total_ESG_ Risk_Score	(2) Total_ESG_ Risk_Score	(3) Environment _Risk_Score	(4) Environment _Risk_Score	(5) Governance_ Risk_Score	(6) Governance_ Risk_Score	(7) Social_Ri sk_Score	(8) Social_Ri sk_Score
Goal_3	1.641*	1.339*	0.085	0.475	0.429	0.456*	1.144**	0.427
	(0.942)	(0.798)	(0.693)	(0.452)	(0.300)	(0.237)	(0.507)	(0.447)
Goal_5	-2.132*	-1.101	-2.241***	-0.859*	0.414	-0.052	-0.305	-0.188
	(1.104)	(0.899)	(0.812)	(0.509)	(0.352)	(0.268)	(0.594)	(0.503)
Goal_6	1.175	0.887	1.669**	0.498	0.007	0.466*	-0.521	-0.097
	(0.979)	(0.810)	(0.721)	(0.459)	(0.312)	(0.241)	(0.527)	(0.453)
Goal_7	0.821	0.345	1.596**	0.199	-0.410	0.029	-0.366	0.116
	(0.983)	(0.818)	(0.723)	(0.463)	(0.313)	(0.243)	(0.529)	(0.458)
Goal_11	0.147	1.129	0.119	0.519	0.551*	0.407*	-0.511	0.217
	(0.935)	(0.804)	(0.688)	(0.456)	(0.298)	(0.239)	(0.503)	(0.450)
Goal_12	-2.611**	-2.166**	-1.087	-0.053	-0.888***	-0.837***	-0.636	-1.277**
	(1.076)	(0.911)	(0.792)	(0.516)	(0.343)	(0.271)	(0.579)	(0.510)
Goal_13	-1.651	-0.436	0.806	0.039	-0.828**	-0.152	-1.639**	-0.331
	(1.193)	(1.004)	(0.878)	(0.569)	(0.380)	(0.299)	(0.642)	(0.562)
Constant	23.014***	18.658***	5.964***	4.507***	7.115***	6.307***	9.937***	7.844***
	(0.477)	(0.784)	(0.351)	(0.444)	(0.152)	(0.233)	(0.257)	(0.439)
Observations	429	429	429	429	429	429	429	429
R-squared	0.124	0.443	0.131	0.672	0.107	0.505	0.097	0.380
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
Other SDGs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.0881	0.406	0.0949	0.650	0.0705	0.471	0.0598	0.338

This table analyses the explanatory power of SDGs on ESG risk scores in our sample of S&P 500 companies. ESG Risk Scores are collected by Sustainalytics, 2023. SDGs are manually collected from reports and websites of each company as dummies. Some of the SDGs are not presented due to space constraints, but are still included in the regression. This paper uses The Global Industry Classification Standard (GICS) to classify industries. Standard errors in parentheses. *, **, and *** indicate significance at the two-tailed 10%, 5%, and 1% levels, respectively.are strongly correlated with the industries they are in. It could be found that the R-squares between Environment Risk Score and SDGs are highest among the three dimensions of ESG risk scores whether controlling industries

or not, with an R-square of 0.672 after controlling for industry fixed effects. It seems that SDGs have higher explanatory power over environment than other two dimensions. It is also worth noticing that some of the other goals show a significant correlation before or after controlling industries. Those goals may also possibly explain some of the variation of ESG risk scores. In short, this paper show that Goal 3 (Good Health and Well-being), Goal 11 (Sustainable Cities and Communities) are negatively correlated with at least one dimension of ESG performance and Goal 5 (Gender Quality), Goal 12 (Responsible Consumption and Production) are positively correlated with it, whether considering industries or not. This paper also finds strong explanatory power of SDGs and industries on ESG risk scores, especially in the dimension of environment.

4.2. SDGs and ROE

This paper collects the relevant information about the S&P 500 companies and then use the regression analysis to get the results as shown in Table 5. According to the results, it can find that there is a positive impact of Goal 4 (Quality Education) and Goal 14 (Life below Water) on the ROE. In contrast, there is a negative impact for companies' ROE if they contribute to Goal 15 (Life on Land). Goal 4 (Quality Education) has a positive impact on the ROE. It can find that the p-value of its regression coefficients is less than 0.1. And the positive coefficients in the graph could show that if the company is actively involved in the development of quality education, the company may improve the company' s ROE. It is reasonable to speculate further that the education program enhances the social image of the company, which can promote product sales, and then indirectly increase the ROE. Goal 14 (Life below Water) also has a positive impact on ROE. With different controls being added in all five models, the p-values of their regression coefficients are consistently less than 0.05. At the same time, the coefficients are all positive, which suggests that companies supporting implementing projects related to marine sustainability are more likely to have higher ROE. It is reasonable to speculate that

Table 5. Regression results of SDGs on return on equity

	(1)	(2)	(3)	(4)	(5)
VARIABLES	ROE	ROE	ROE	ROE	ROE
Goal_4	149.63	287.673	315.716*	327.693*	302.396
	(142.831)	(186.288)	(189.581)	(192.032)	(193.231)
Goal_14	602.319**	557.523**	650.287**	638.973**	614.033**
	(260.252)	(282.164)	(284.739)	(287.183)	(288.11)
Goal_15	-709.412***	-649.659***	-698.940***	-693.529***	-698.472***
	(218.103)	(238.276)	(244.4)	(246.487)	(247.289)
Constant	-17.088	60.309	74.36	422.229	55.726
	(79.428)	(95.28)	(195.007)	(400.801)	(497.131)
Observations	401	401	401	400	400
R-squared	0.027	0.051	0.079	0.088	0.096
Other SDGs	No	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Control Variables	No	No	No	Yes	Yes
ESG Risk Variables	No	No	No	No	Yes

Adj R2	0.0198	0.00916	0.0124	0.00579	0.00314

This table analyses the explanatory power of SDGs on Return on Equity in our sample of B&P 500 companies. Return on Equity is collected by Wind. SDGs are manually collected from reports and websites of each company as dummies. Some of the SDGs are not present due to space constraints but are still included in the regression. This paper uses The Global Industry Classification Standard (GICS) to classify industries. Standard errors in parentheses *, **, and *** indicate significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Companies who take measures to protect underwater lives can reduce the marine environmental risks However, Goal 15 (Life on Land) has a negative impact on ROE. The graph shows a p-value of the regression coefficient of less than 0.01 in all five models. Unlike the previous two goals, these figures have a negative coefficient, which suggests that while terrestrial conservation is essential for environmental sustainability, its financial impact on companies may be more complex in relative terms. Therefore, in the short term, supporting environmental sustainability on the terrestrial side may have a negative impact on the company's ROE. Cooperation that incorporates the sustainable development goals, such as goal 15, into its long-term development strategy may result in a lower ROE, particularly when taking other factors, such as upfront cost, into account [15].

In a word, these figures show that different goals will have complex influences on companies' ROE. This paper could know that firms that carry out activities in education and marine conservation areas will have an advantage on the ROE of the company. Meanwhile, to some extent, companies that develop projects about terrestrial organisms' area may not bring financial advantages or even disadvantages to the company. These results can provide the company with a more objective and direct direction on the future short-term development of the firm revenue and the layout of the long-term development.

4.3. SDGs and TAXTOEBT

This paper also examines the relationship between the SDGs in question and the companies' tax to earning before tax (TAXOEBT).

According to Table 6, This paper conducts a fixed effects model for the five SDGs with TAXTOEBT as the dependent variable, in which Goal 2, Goal 9, and Goal 13 show negative significance, while Goal 5 and Goal 17 show positive significance.

Goal 2 (Zero Hunger) show different significance with different control variables, in pair care (Column 1) without adding any control variables, Goal 2 do not show its significance. Instead, it demonstrates significance marked with two stars when other SDGs were added as variables, as well as when market fixed effects are added. However, the significance of Goal 2 disappears again when it add the control variables mentioned earlier into consideration. Finally, at the point when this paper consider the ESG risk variables, it again shows a significance that presents one star. Thus, it can conclude that when companies invest in the development of zero hunger, they get a negative return on TAXTOEBT.

Goal 5 (Gender Equality) demonstrates significance in all five models, but along with the increase of control variables, the significance of Goal 5 decreases gradually. Starting with Column 1, which doesn't have any control variables, the significance is demonstrated as three stars. With the addition of other SDGs and industry fixed effects, the significance decreases to two stars, and finally with the addition of the other control variables mentioned above as well as the ESG risk variables, the significance decreases to one star. In the case of the effect of Goal 5 on TAXTOEBT, this paper notice that all the results present a positive number. This means that when companies invest more in

Goal 5 gender equality, the more they achieve gender equality and empower all women and girls, the more they can get a positive return on TAXTOEBT. Goal 9 (Industry, Innovation and Infrastructure) also exhibits significant results in.

Table 6. Regression results of SDGs on tax to earnings before tax

	(1)	(2)	(3)	(4)	(5)
VARIABLES	TAXTOEBT	TAXTOEBT	TAXTOEBT	TAXTOEBT	TAXTOEBT
Goal_2	-5.59	-13.728**	-14.251**	-11.352	-13.383*
	(5.627)	(6.771)	(6.986)	(7.036)	(7.069)
Goal_5	18.861***	14.662**	14.426**	11.591*	11.737*
	(5.628)	(6.175)	(6.213)	(6.268)	(6.261)
Goal_9	-10.528**	-15.062***	-16.893***	-17.795***	-18.859***
	(4.681)	(5.367)	(5.534)	(5.517)	(5.509)
Goal_13	-19.055***	-24.540***	-23.400***	-19.755***	-20.878***
	(5.537)	(6.588)	(6.832)	(6.942)	(6.939)
Goal_17	12.223**	11.106**	13.511**	14.355**	15.226***
	(5.223)	(5.483)	(5.612)	(5.632)	(5.657)
Constant	19.109***	17.781***	17.822***	20.535**	37.909***
	(2.574)	(2.639)	(5.354)	(9.919)	(12.25)
Observations	399	399	399	398	398
R-squared	0.068	0.095	0.128	0.157	0.173
Other SDGs	No	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Control Variables	No	No	No	Yes	Yes
ESG Risk Variables	No	No	No	No	Yes
Adj R2	0.0561	0.0544	0.065	0.0803	0.0882

Table 6 analyses the explanatory power of SDGs on tax to earnings before tax in our sample of B&P 500 companies. Tax to earnings before tax are collected by Wind. SDGs are manually collected from reports and websites of each company as dummies. Some of the SDGs are not present due to space constraints but are still included in the regression. This paper uses The Global Industry Classification Standard (GICS) to classify industries. Standard errors in parentheses *, **, and *** indicate significance at the two-tailed 10%, 5%, and 1% levels, respectively.

all five models simultaneously, especially with the inclusion of the control variables, which remains stable at the three-star significance level. Focusing on the data in the table, when developing Industry, Innovation and Infrastructure, firms receive negative returns on TAXTOEBT. This paper can deduce that because developing Goal 9 requires capital investment as well as impacts on cash liquidity, this impact should be short-term, so the return on investment in Goal 9 will unfold gradually over the long term.

Goal 13 (Climate Action) is the most significant of the five goals, with all five models demonstrating a three-star level of significance. According to the results in the table, the development of Goal 13 Climate Action to deal with climate change and its impacts is negatively related to the company's TAXTOEBT. As can be seen from the impact coefficients, the numbers are

all around 20, which means that as more and more control variables are added, the impact of Goal 13 on TAXTOEBT will not have a tremendous impact on TAXTOEBT, which shows the robustness.

Goal 17 (Partnership for the Goals) also exhibits significant results in all five models and its significance level increases as the number of control variables added increases, while the impact coefficient grows. According to the table, this work notes that the results for Goal 17 are positive, which means that when companies invest in Goal 17 to achieve the goal of strengthening the means of implementation and revitalisation of the global partnership to achieve the SDGs, there is a positive impact on the company TAXTOEBT.

Focusing on the R-squared in the bottom half of the table, the introduction of other SDGs as a control variable (Column 2) increases the R-squared from 0.068 to 0.095, which implies that the introduction of other SDGs enhanced the model's ability to explain TAXTOEBT. The inclusion of industry-fixed effects in Column 3 further increases the R-squared to 0.128, indicating a significant contribution of industry-specific factors. Including control variables and ESG risk variables further enhances the explanatory power of the models by increasing the R-squared to 0.157 and 0.173 for Column 4 and Column 5 respectively.

5. Conclusion

This paper shows a new SDGs research approach. This work collects and analyse SDGs input information and company performance for 429 companies. The research findings indicate that company's commitment to safeguarding healthy lives, promoting well-being, and building sustainable cities and communities is detrimental to the company's ESG performance and company investment in achieving gender equality and sustainable consumption and production contributes to ESG performance. Meanwhile, the company's contribution to universal access to quality education, the sustainable use of marine resources, the promotion of gender equality and the strengthening of partnerships is beneficial to the company's finances. And the company's contribution to the sustainable use of terrestrial resources, the eradication of hunger, the creation of industries, innovation, infrastructure, and the fight against climate change is not conducive to financial performance. While ESG scores as a composite have an impact on business performance, specific SDGs may have a more direct and significant impact on certain aspects of business.

It is evident that while all SDGs are mandatory for future companies, there are considerable financial implications for businesses when they invest in SDGs. Both companies and society require an adjustment period to adapt to the constraints of development. This research can help businesses smooth out this period, let strategy makers better understand the impact of SDGs on their companies and to push for the acceptance of social. This paper can provide companies with some strategies. We contend that companies should direct their attention to goals that yield positive effects and make the requisite investments to capitalize on these opportunities and for goals that do not yield positive effects in the immediate term, a temporary reduction in investment may be warranted. Those approaches can be used to transition their companies to a sustainable model.

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