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Original Article

ESG index impact on the performance of education sector companies

Impactos do índice ESG no desempenho das empresas do setor da educação

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Abstract

Purpose: This paper examined the impact of Environmental, Social and Governance (ESG) scores of for-profit colleges, universities, and professional schools on their market and financial results.
Design/methodology/approach: Sample data from 50 companies, national and international, listed on a stock exchange and with ESG data available from 2012 to 2021 was obtained on the EIKON-REFINITIV information database. Performance variables comprised Tobin's Q and Market-to-Book (MTB), widely adopted in similar economic studies. Return on Assets (ROA) and Return on Equity (ROE) conformed to the financial performance variables. Explanatory variables consisted of ESG combined, ESG Social Pillar, Environmental Pillar, and Governance Pillar indexes. The analysis used the Generalized Method of Moments regression (GMM).
Findings: ESG combined showed a significant positive relationship with Social Pillar scores and financial performance, represented by ROE and ROA, as found by other studies. Conversely, we observed a significant negative relationship between ESG combined and Social Pillar scores and market indicators (Tobin's Q and MTB).
Practical implications: Results indicate that although ESG combined, Social Pillar scores, and financial performance are positively related to financial results, these do not reflect positive market recognition or price shares**.**
Originality: First-time results for this sector.

Keywords: ESG; Financial performance; Market performance; Educational institutions

Resumo

Objetivo: Este artigo procurou identificar o impacto das classificações ambientais, sociais e de governança (ESG) de empresas do ramo de educação, tais como: faculdades, universidades e escolas profissionais com fins lucrativos nos seus resultados financeiros.

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Metodologia: Foram utilizados como amostra os dados de 50 empresas de todo o mundo, listadas em bolsa e com dados ESG disponíveis para o período de 2012 a 2021 contidos na base de dados REFINITIV-EIKON. Como variáveis dependentes, foram utilizados o Q de Tobin e o Market-to-Book (MTB), variáveis amplamente adotadas em estudos econômicos similares. Como variáveis de desempenho financeiro foram utilizadas a Rentabilidade do Ativo (ROA) e a Rentabilidade sobre o Capital Próprio (ROE). Como variáveis explicativas foram usados os índices ESG-combinado, Pilar-Social, Pilar-Ambiental e Pilar de Governança. O método de regressão utilizado foi o método de momentos generalizados (GMM).
Conclusões: Como resultado, foi encontrada uma relação significativa e positiva entre as pontuações do ESG-combinado e Pilar-Social com o desempenho financeiro, representado pelo ROE e ROA. Este resultado é semelhante aos de outros estudos que encontraram a mesma relação positiva. Por outro lado, verificou-se uma relação significativa e negativa entre as pontuações ESG-combinado e Pilar-Social com os indicadores de mercado Q de Tobin e MTB.
Implicações práticas: Os resultados indicam que, apesar de as pontuações do ESG-combinado e do Pilar-Social estarem positivamente relacionados com os resultados financeiros, o mercado não reconhece positivamente nem fixa o preço das ações devido a essas pontuações.
Originalidade: Estes resultados ainda não tinham sido observados para o sector de educação.

Palavras-chave: ESG; Desempenho financeiro; Desempenho de mercado; Instituições de ensino

1 INTRODUCTION

In recent decades, humanity has consumed natural resources at a greater rate than the planet is capable of replenishing, resulting in serious environmental issues such as climate change, desertification, water and air pollution as well as growing social, economic, and political inequality (Grosseck et al, 2019). Consequently, technology is no longer the main limiting factor for future economic growth but rather the scarcity of natural and social capital—what we will lack is "the fish stock in the sea, not the availability and size of fishing vessels" (Cortese, 2003).

But despite constant publicity and disclosure of the social and environmental problems caused by current business models, people generally lack knowledge of their impact on the planet, either by daily actions or professional decisions. "Current signals are incomplete, highly inaccurate, leading us to a false sense of security or are too late to prevent damage" (Cortese, 2003).

As a countermeasure, the document "Our Common Future"—later known as the "Brundtland Report"—developed by the United Nations Commission on Environment

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and Development, presented to the world in 1987 the concept of "Sustainable Development" (SD) putting the concern with the preservation of natural resources on the development agenda. SD advocates that States should plan their development to "meet the needs of the current generation without impairing the ability of future generations to meet their own" (Caiado et al., 2018).

Later, to materialize and direct the adoption of SD-oriented practices by countries, the United Nations Summit held the Rio+ 20 event, in which they presented the Sustainable Development Goals (SDGs)—a set of 17 guidelines and 169 goals for global development (Caiado et al., 2018).

But implementing these actions still face difficulties. Building paths for sustainable development depend on joint efforts by many actors, such as companies, non-governmental organizations, governments and especially young leaders (Griebeler et al, 2022) who will be able to build new, more sustainable societies by establishing new lifestyles and economic relations (Grosseck et al, 2019). Professionals must understand how their decisions regarding production processes and use of their products and services connect to and impact the planet. This necessary change in mentality must begin by educating people and professionals.

In this scenario, educational institutions play a key role in the quest for SD. Within the scope of their mission and activities is the responsibility to transform social reality and prioritize the development of a more sustainable society. In a sense, they should "set an example" by forming future leaders and disseminating public awareness on sustainability (Amaral et al., 2015; Caeiro & Azeiteiro, 2020; Leal Filho et al., 2021). According to Sanches et al. (2023, p. 812), "higher education institutions (HEIs) must take on a leadership role in building a sustainable world given their responsibility for preparing future professionals and leaders worldwide and considering the role they provide to society." But to achieve this goal, HEIs need to adopt a sustainable approach themselves (Sanches et al., 2023).

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However, HEIs and other educational institutions face challenges of increased competition, increased stakeholder expectations and university corporatization arising from the current economic scenario. Universities not only compete for future students, but also for scientific staff, international projects, and resources and a high position in various evaluation rankings. Consequently, a good reputation can help universities gain trust and improve their competitive position (Azizi & Sassen, 2023; Sanches et al., 2023).

As no relation should be considered as evident, permanent, and universal, the present research explores the relation between ESG indexes of educational institutions and their financial and market performance to understand the significance of the phenomenon.

2 LITERATURE REVIEW

Universities can and should play a key role in making society sustainable by educating and producing world leaders and by conducting research activities to enable a sustainable future (Amaral et al., 2015; Caeiro & Azeiteiro, 2020; Leal Filho et al., 2021; Sanches et al., 2023). Generally, a sustainable university should "walk the talk" regarding its sustainability agenda, that is, it should teach the SD concept and philosophy to its students while embracing SD in day-to-day organizational management (Amaral et al., 2015).

Educational institutions can implement sustainable development in different dimensions, "from education and curricula, campus operation, organisational management, external community and research, to assessment and communication, called the 'Whole School Approach'" (Caeiro & Azeiteiro, 2020). In other words, simply exposing concepts in class does not end all the possibilities to promote this transformation. These institutions must legitimise their teachings by holistically incorporating sustainability into their strategy, treating it as a strategic focus (Sanches et al., 2022), at the risk of incurring into an educational greenwashing in the style of "do as I say, but do not as I do."

Beyond their vocational aspect in favour of SD, however, we should consider the economic aspect since these companies have financial performance responsibilities

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towards their shareholders (or owners) and are thus subject to phenomena predicted by administrative theories, such as stakeholder theory and agency theory.

Ruch's "Higher Ed, Inc. – The Rise of For-Profit University" (2003) presents an important historical timeline for understanding the emergence of educational institutions' entrepreneurial vocation. Existing since mid-19th century in the United States (and since the 11th century in Europe), private universities were exclusively under the control of family groups or religious institutions until the 1990s. Since 1995, when the first US higher education institutions went public and began to operate under different administrative and structural models, including the pulverisation of shareholder control and the establishment of professional executive boards, the immediate financial results tied to the rapid expansion in demand for higher education attracted more investors and more economic groups and funds geared towards education (Ruch, 2003). From there, the last 25 years have seen an accelerated expansion of the sector. By 2022, at least 50 groups and companies dedicated to education were listed on different stock exchanges worldwide and catalogued in the REFINITIV (2022) database. Shareholders in all these companies have a natural expectation for a business performance that translates into trade security appreciation, hence the relevance of exploring the relation between ESG indexes and financial performance as in other economic segments. In other words, commitment to the ESG agenda and practices within an educational institution is justified by its social vocation. But is it reflected in better business performance?

This same question has been asked in recent years considering different sectors of the economy, economic periods, countries, and policies, with different results to still allow some doubt. According to Abate et al. (2021), knowing whether the commitment to good performances in ESG indicators leads to a better performance for shareholders regarding organisations with different focuses is a concern of investors, managers and even regulatory bodies.

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Saini et al. (2022) state that the capitalist economic system focuses value and wealth creation on the economic performance variable above all and, consequently, aims for short-term financial results and resists the costs associated with long-term benefits, even if financial. ESG dimensions, therefore, are embraced with greater commitment as long as associated with this outcome perspective (Porter & Kramer, 2006).

Studies on this association (ESG indicators and financial and market performance) increased in recent decades. Saini et al. (2022) list research going from Brundtland (1987) and Porter (1991) in the early days of ESG concepts to recent research considering the impacts of global crises (Li & Chen, 2018; Saini & Singhania, 2019) and even the pandemic (Shaikh, 2021; Yoo & Managi, 2022). Common among them is that both hypotheses that assume a relevant positive relation between ESG, disclosure and financial performance get validated (Saini et al., 2022) and repeatedly rejected under specific conditions or when considering separate scores on ESG (environmental, social and governance) variables (Gavana et al., 2022).

Friede et al. (2015) aggregated data from more than 2,200 studies on the relation between ESG and corporate financial performance published since the late 1970s. The impossibility of generalisation identified by the authors from such a large sample reinforces that the relation between ESG and financial performance is predominantly relevant and non-negative, with most studies indicating a positive relation, but not exclusively. Moreover, we see a fragmentation of findings with some inconclusive or non-relevant relations depending on the study model, ESG variable features, region, company type, type of papers traded, and maturity of markets, among other factors.

Xie et al. (2019) add that this relation is non-linear, and evidence shows that under certain conditions, moderate ESG levels produce more positive relations with firm financial performance than high (or low) ESG levels, indicating that not only validating the relation between ESG and performance is important, but also identifying the optimal intensity of this interrelation.

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Given the above, our research asks "Do the ESG indexes of educational institutions positively impact their financial and market results?"

Based on the literature review that points to similar phenomena in other economic sectors, we proposed two hypotheses circumscribed to the educational segment:

H1: ESG scores of educational organisations positively influence their market results.

H2: ESG cores of educational organisations positively influence their financial results.

3 METHOD

3.1 Sample and database

To assess the impact of ESG indexes on the financial and market results of educational institutions, we used a sample comprising 50 for-profit organisations active in Education in different countries listed on stock exchanges, obtained from the REFINITIV database, an LSEG (London Stock Exchange Group) initiative that gathers 16 different economic information sets over 78,000 companies in 116 countries. Importantly, these organisations include both educational institutions (basic education, technical education, and higher education institutions) and companies providing educational services and technologies (Table 1).

Table 1 – Sample distribution

Area of Expertise	Qty.	%
Colleges, universities and professional schools	17	34%
Other Schools and Educational Institutions	10	20%
Business and Computer Science and Management Training Schools	5	10%
Primary and Secondary Schools	5	10%
Technical and Commercial Schools	4	8%
Educational support services	9	18%
Total	**50**	**100%**

Souce: The authors

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Due to the specific economic sector (Education) and the limited sample of 50 companies, we chose to use data from these organizations spanning 10 years (2012 to 2021), thus expanding the number of available observations. The sample contains companies from Australia (1), Brazil (6), Canada (1), China (14), Egypt (1), Hong Kong (2), India (1), Singapore (1), South Africa (1), Sweden (1), United Arab Emirates (2), United Kingdom (1), and United States of America (18).

The largest sample participation were traditional educational institutions, representing 82% of the group, with the Educational Support Services category representing only 18% (Table 1).

3.2 Regression Model and Explanatory Variables

Data analysis employed a multiple regression model using the generalised method of moments (GMM). According to Rahman et al. (2023), GMM models are generally used to control for the potential endogeneity of the ESG-Finance Performance nexus.

Four GMM regression models were specified to investigate the relation between ESG scores and their impact on the market and financial outcomes of educational organisations, as per base equation (1).

$$PERF_{i} = \beta_0 + \sum_{k=1}^{n} \beta_k PERF_{i-k} + \beta_1 ESG_{Comb i-1} + \beta_2 ESG_{E i-1} + \beta_3 ESG_{S i-1} + \beta_4 ESG_{G i-1} + \sum_{i=1}^{m} \beta_j Controls_{i-1} + \varepsilon_i \quad (1)$$

In this generic regression model, $PERF_{it}$ represents the performance indicator (one of the four financial or market performance used) defined for each company "i" in year "t."

Explanatory variables refer to the ESG indexes published by REFINITIV (from data collected from over 11,000 companies worldwide and calculated considering 630 variables) and are:

ESG_Comb: overall (combined) ESG index of a company "i" in year "t," consisting of the weighted average of its Environmental, Social and Governance component indicators;

ESG_E, ESG_S and ESG_G: individual and isolated indexes of each ESG component (Environmental, Social and Governance) of a company "i" in year "t."

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Use of the individual ESG components is widely found and encouraged in the scientific literature (Chen & Xie, 2022; Xie et al., 2019) since it allows identifying how the adoption of specific actions on each of these axes can impact, positively or negatively, the results of organisations from different economy sectors. For example, for extractive or highly polluting segments like oil and gas, results linked to the environment indicator may be more impactful; for companies in the fashion sector, social results may be more relevant, whereas in the financial sector, governance indices may present more significant outcomes.

This model puts particular interest in the coefficients ß (the relation between ESG indexes and corporate financial performance). Significantly positive ß indicates that positive ESG indexes are related to better corporate economic performance. A significantly negative index, in turn, indicates that the lower the company's ESG performance, the lower the business performance.

3.3 Dependent Variables and Research Hypotheses

Based on the literature review conducted, we proposed two hypotheses for analysis:

H1: ESG scores of educational organisations positively influence their market results.

To verify this hypothesis, we conducted two regressions using market variables. The first used the Tobin-Q index performance measurement, according to equation (2). Tobin-Q is an indicator widely adopted in financial research to evaluate corporate market responses, and is obtained by the ratio between market capitalization plus liabilities and total assets (Chen & Xie, 2022; Xie et al., 2019). It is a especially relevant indicator because it is used as a decision-support tool for investors (Carvalho et al., 2017).

$$TobinQ_{i} = \beta_0 + \sum_{k=1}^{n} \beta_k TobinQ_{i-k} + \beta_1 ESG_{Comb i-1} + \beta_2 ESG_{E i-1} + \beta_3 ESG_{S i-1} + \beta_4 ESG_{G i-1} + \sum_{i=1}^{m} \beta_j Controls_{i-1} + \varepsilon_i \quad (2)$$

The second regression (equation 3) used Market-to-Book (MTB) as the dependent variable, defined as the ratio between a company's market value and its equity value. A result greater than 1 indicates that the market is evaluating the company with a

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value greater than its present book value, that is, it is identifying factors not captured by accounting (Sousa, 2014) and projecting future value. Thus, using this indicator can assist in identifying market signals related to ESG performance.

$$MTB_{i} = \beta_0 + \sum_{k=1}^{n} \beta_k MTB_{i-k} + \beta_1 ESG_{Combi-1} + \beta_2 ESG_{Ei-1} + \beta_3 ESG_{Si-1} + \beta_4 ESG_{Gi-1} + \sum_{j=1}^{m} \beta_j Controls_{i-1} + \varepsilon_i \quad (3)$$

Our second research hypothesis was:

H2: ESG scores of educational organisations positively influence their financial results.

Two regressions were performed, now using two financial variables as dependent variables: Return on Assets (ROA), as per equation (4), and Return on Equity (ROE), as per equation (5), which are commonly defined as performance accounting measurements (Nirino et al., 2021).

$$ROE_{i} = \beta_0 + \sum_{k=1}^{n} \beta_k ROE_{i-k} + \beta_1 ESG_{Combi-1} + \beta_2 ESG_{Ei-1} + \beta_3 ESG_{Si-1} + \beta_4 ESG_{Gi-1} + \sum_{j=1}^{m} \beta_j Controls_{i-1} + \varepsilon_i \quad (4)$$

$$ROA_{i} = \beta_0 + \sum_{k=1}^{n} \beta_k ROA_{i-k} + \beta_1 ESG_{Combi-1} + \beta_2 ESG_{Ei-1} + \beta_3 ESG_{Si-1} + \beta_4 ESG_{Gi-1} + \sum_{j=1}^{m} \beta_j Controls_{i-1} + \varepsilon_i \quad (5)$$

3.4 Control Variables

Control variables, represented by $Controls_{it}$ in the equations, were used to isolate the effects of ESG indexes on performance for a more objective analysis of the formulated hypotheses.

Several company-level variables were considered. As company size affects market value (Mak & Kusnadi, 2005; Chen & Xie, 2022), two size variables were included: Staffln, which corresponds to the total number of employees, and the logarithm of Total Assets (Size). Company growth was defined by the percentage variation in revenue, according to Joh and Jung (2016). Based on these authors, since leverage is related to

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a company's value, the leverage variable (Lev) is estimated by dividing debt by total assets. The Cashln variable (cash flow from operating activities) was added to capture cash generation. Companies with higher cash flow generally have fewer restrictions on obtaining external funding (Hirth & Viswanatha, 2011).

Table 2 – Variable Definitions

Variable	Definition	Reference	Source
Tobin_q	Ratio of market capitalization plus debt to equity plus debt	Chen and Xie (2022)	Refinitiv
MTB	Ratio of market capitalization to total equity		Refinitiv
ROA	net income divided by total asset		Refinitiv
ROE	net income divided by total equity		Refinitiv
ESG	Refinitiv score from 0 to 100		Refinitiv
Env	Refinitiv score from 0 to 100		Refinitiv
Soc	Refinitiv score from 0 to 100		Refinitiv
Gov	Refinitiv score from 0 to 100		Refinitiv
Size	ln(Total Asset)		Refinitiv
Growth	Percentage change in revenue		Refinitiv
Lev	Total liabilities divided by total assets	Chen and Xie (2022)	Refinitiv
Cash	ln(cash flow from operating activities)	Chen and Xie (2022)	Refinitiv
Staff	ln(Total employees)	Chen and Xie (2022)	Refinitiv
GDP	GDP per capita in dollar		Worldbank
SDG	Score from 0 to 100 for SDG goals		Sustainable Develoment Report

Source: The authors

Figure 1 illustrates the methodological approach.

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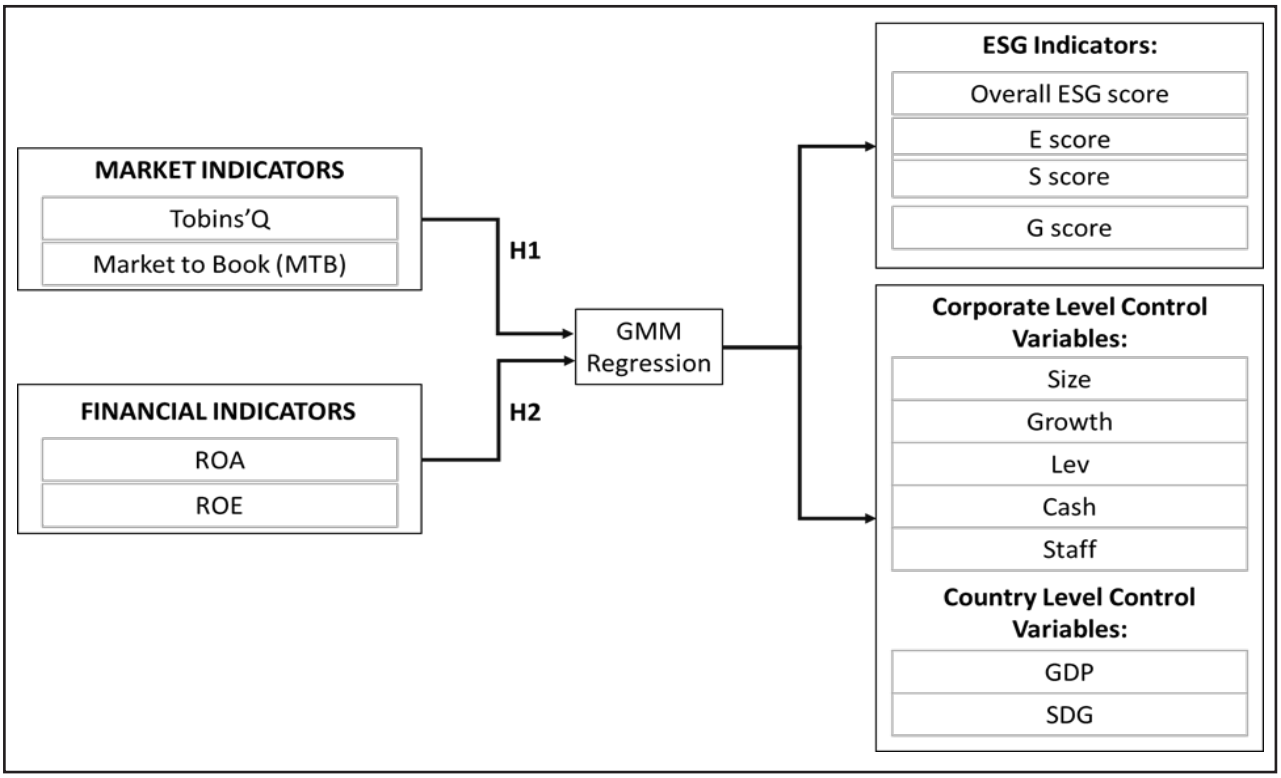
Figure 1 – Methodological approach



Source: The authors

4 RESULTS AND DISCUSSION

Table 3 presents the descriptive statistics of the model variables. Of the ESG variables, the environmental index (ENV) shows the largest variation with a standard deviation of 22.43. Among the dependent variables, MTB presents the greatest variation, with a standard deviation of 3.050, followed by Tobin's Q, with 2.022. ROA and ROE, used in the robustness tests of the model, present low variation of 0.163 and 0.314, respectively.

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Table 3 – Descriptive Statistics

	Mean	Median	S.D.	Min	Max
Tobin_q	2.386	1.718	2.022	0.017	10.930
MTB	3.188	2.243	3.050	0.000	19.160
ROA	0.022	0.045	0.164	−0.912	0.666
ROE	0.119	0.098	0.314	−0.974	2.064
ESG	38.060	35.840	15.170	5.039	75.870
Env	38.230	39.840	22.430	2.000	84.460
Soc	42.350	38.320	17.050	4.425	84.810
Gov	48.190	47.580	20.610	3.230	94.510
Size	20.240	20.140	1.398	15.040	23.220
Growth	0.099	0.077	0.236	−1.000	1.000
Lev	0.529	0.507	0.293	0.080	1.965
Cash	17.980	18.070	1.393	11.140	20.850
Staff	8.320	8.389	1.269	3.676	11.270
GDP	32912.00	38749.00	24471.000	0.000	72794.00
SDG	72.160	72.380	4.222	54.420	85.300

Source: The authors

In the correlation matrix (Table 4), ESG indicators show a negative relation with most dependent variables. Composite ESG (ESG), Social (Soc) and Governance (Gov) indexes present a positive relation only with ROA. Conversely, the environmental ESG index (Env) has a positive correlation with Tobin's Q and MTB but a negative one with the financial variables ROA and ROE.

In analysing the relation with the financial indicators, the Environmental (Env) and Governance (Gov) indexes showed no statistically significant correlation. However, the composite ESG (ESG) and Social (Soc) indicators presented a significant positive relation with ROA (Table 5) and ROE (Table 6).

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Table 4 – Descriptive Statistics

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Tobin_q	(1)	1,00														
MTB	(2)	0,87	1,00													
ROA	(3)	-0,04	-0,01	1,00												
ROE	(4)	0,03	0,13	0,46	1,00											
ESG	(5)	-0,10	-0,17	0,03	-0,15	1,00										
Env	(6)	0,05	0,06	-0,06	-0,05	0,75	1,00									
Soc	(7)	-0,12	-0,13	0,00	-0,08	0,69	0,44	1,00								
Gov	(8)	-0,02	-0,07	0,05	-0,09	0,64	0,15	0,05	1,00							
Size	(9)	-0,17	0,17	0,09	-0,16	0,16	0,17	0,15	0,03	1,00						
Growth	(10)	0,24	0,28	0,08	0,14	-0,04	-0,01	-0,01	-0,04	-0,07	1,00					
Lev	(11)	0,04	0,22	-0,34	0,21	-0,18	-0,05	-0,06	-0,20	0,01	-0,02	1,00				
Cash	(12)	0,07	0,04	0,14	0,05	0,03	0,10	0,01	0,04	0,77	0,08	0,07	1,00			
Staff	(13)	-0,05	-0,04	0,11	0,11	0,06	0,06	0,12	0,01	0,78	-0,07	0,18	0,67	1,00		
GDP	(14)	-0,17	-0,18	-0,04	-0,14	-0,14	-0,02	-0,02	-0,18	0,12	-0,18	-0,11	0,17	-0,32	1,00	
SDG	(15)	0,03	0,03	-0,15	-0,11	0,12	0,07	0,22	0,01	0,25	-0,10	0,16	0,31	-0,01	0,03	1,00

Source: The authors

Table 5 – ROA

	ESG		Environmental		Social		Governance	
ROA	Coef	p value	Coef	p value	Coef	p value	Coef	p value
Lag(-1)	0.202	0			0.202	0	0.213	0
Const.			0.269	0.005				
ESG	**0.001**	0.009						
Env			0	0.848				
Soc					**0.001**	0.003		
Gov							0	0.369
Size	−0.034	0	−0.035	0	−0.032	0	−0.031	0.001
Growth	0.054	0	0.02	0.346	0.044	0.001	0.037	0.007
Lev	−0.08	0.002	−0.116	0	−0.078	0.001	−0.069	0.007
Cash	0.038	0	0.035	0	0.04	0	0.04	0
Staff	0.039	0.003	0.008	0.322	0.028	0.013	0.041	0.002
GDP	0	0.001	0	0.816	0	0	0	0.045
SDG	**−0.028**	**0.006**	**−0.002**	**0.081**	**−0.027**	**0.011**	**−0.031**	**0.001**
Sector	No		No		No		No	
Time	No		No		No		No	
Model	GMM-2 steps		Pooled		GMM-2 steps		GMM-2 steps	
R-squared			0.528					
Breusch-Pagan test			2.059	0.151				
Hausman test			12.386	0.135				
Sargan	24.53				23.54		21.02	
Obs	137		102		137		137	

Note: GMM-2 steps involves two-step estimation with an updated weight matrix. GMM-Sys combines level and difference equations in a single step. GMM-Sys-2 steps is like GMM-Sys-1 step but with two steps for greater precision.

Source: The authors

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Table 6 – ROE

	ESG		Environmental		Social		Governance	
ROE	Coef	p value	Coef	p value	Coef	p value	Coef	p value
Lag(-1)	0.209	0	0.373	0	0.209	0	0.208	0
onst.								
ESG	**0.004**	0						
Env			0	0.377				
Soc					**0.004**	0		
Gov							0	0,558
Size	−0.057	0.088	−0.039	0.002	−0.107	0	−0.121	0
Growth	0.197	0	0.084	0.094	0.217	0	0.21	0
Lev	0.034	0.244	−0.044	0.502	0.018	0.467	0.007	0,851
Cash	0.067	0	0.05	0	0.077	0	0.084	0
Staff	0.029	0.346	0.004	0.834	0.066	0.119	0.077	0,005
GDP	0	0	0	0.475	0	0	0	0
SDG	−0.031	0.1	−0.001	0.81	−0.003	0.919	0.02	0,295
Sector	No		No		No		No	
Time	No		No		No		No	
Model	GMM-2 steps		GMM-Sys-1 step		GMM-2 steps		GMM-2 steps	
R-squared								
Breusch-Pagan test								
Hausman test								
Sargan	23.86		53.467		26.86		25.6407	
Obs	130		91		130		130	

Note: GMM-2 steps involves two-step estimation with an updated weight matrix. GMM-Sys combines level and difference equations into a single step. GMM-Sys-2 steps is like GMM-Sys-1 step but with two steps for greater precision.
Source: The authors

These results resemble that of similar studies conducted in other economic sectors. Abate et al. (2021) analysed the performance of 634 European equity mutual funds and identified a positive correlation between good ESG indexes and the funds' financial performance.

De Lucia et al. (2020) found a positive relation between ESG practices and financial performance by surveying 1,038 European public companies between 2018 and 2019.

R. G. Eccles et al. (2016) reached comparable results when analysing two investment universes classified as "Global All," consisting of large and mid-cap stocks

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in 23 developed countries and 23 emerging countries. Their findings corroborated a positive correlation between the adoption of ESG practices and financial performance for 75% of the surveyed companies.

Koundouri et al. (2022) examined the relation between ESG performance, business risk analysis, capital structure efficiency and valuation among 69 companies included in the STOXX Europe ESG Leaders 50 index. Results indicated that for certain sectors, companies with strong ESG performance had higher profit margins and a positive relation with ROA and ROE than the others in all sectors surveyed.

Such superior performance reported by these different studies may have various causes. In analysing the financial health of English universities, Garland (2020) identified a greater ability to prospect resources from larger, more renowned universities with better ESG indexes.

Hypothesis 2 (ESG scores of educational organisations positively influence their financial results) is thus partially proven by the identified significant positive relation between overall ESG and Social ESG indexes and both financial performance indicators (ROA and ROE), but not with the Environmental and Governance indexes.

However, we found the opposite result for the market indicators. Table 7 presents the regression results using Tobin's Q index as a performance indicator. Unlike in the analysis with the financial indicators, we observed a significant negative relation between the composite ESG (ESG) and Social ESG (Soc) indexes and Tobin's Q, suggesting that high scores on these indicators may be associated with negative economic outcomes. This finding resembles the results of Garcia et al. (2017), who found a negative relation between ESG performance and market results positing that the costs involved in achieving high ESG scores decrease the organisation's profitability and thus negatively impact market expectations.

The financial indicator as well as the Environmental (Env) and Governance (Gov) variables showed no significant regression coefficients.

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Table 7 – Tobin Q

	ESG		**Environmental**		**Social**		**Governance**	
Tobin_Q	Coef	p value	Coef	p value	Coef	p value	Coef	p value
Lag(-1)	−0.205	0	0.357	0.0074	0.38	0	0.446	0
Const.								
ESG	**−0.018**	0						
Env			0.002	0.555				
Soc					**−0.01**	0		
Gov							0	0.778
Size	−1.183	0	−0.171	0.054	−0.22	0	−0.226	0.002
Growth	0.085	0.334	0.138	0.712	0.99	0	0.759	0
Lev	0.509	0.035	−0.401	0.389	0.04	0.75	0.203	0.172
Cash	0.25	0	0.221	0.023	0.34	0	0.375	0
Staff	0.376	0.028	−0.253	0.141	−0.2	0.01	−0.217	0.007
GDP	0	0	0	0.006	0	0	0	0.044
SDG	**0.465**	0	**0.049**	0.005	**0.04**	0	**0.021**	0.062
Sector	No		No		No		No	
Time	No		No		No		No	
Model	GMM-2 steps		GMM-Sys-1 step		GMM-Sys-2 steps		GMM-Sys-2 steps	
R-squared								
Breusch-Pagan test								
Hausman test								
Sargan	21.42		69.11		24.36		25.39	
Obs	135		88		167		167	

Note: GMM-2 steps model involves two-step estimation with an updated weight matrix. GMM-Sys combines level and difference equations into a single step. GMM-Sys-2 steps is like GMM-Sys-1 step but with two steps for greater precision.

Source: The authors

MTB produced similar results (Table 8). The Environmental (Env) and Governance (Gov) indicators showed no statistical significance, whereas the general ESG (ESG) and Social (Soc) indexes presented a significant negative relation with market performance. These findings reject our first hypothesis (H1), that ESG scores of educational organisations positively influence their market results.

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Table 8 – Market to book

	ESG		Environmental		Social		Governance	
MTB	Coef	p value	Coef	p value	Coef	p value	Coef	p value
Lag(-1)	0.223	0.001	0.311	0.009	0.21	0	0.235	0
Const.								
ESG	**−0.02**	0.021						
Env			0	0.562				
Soc					**−0.02**	0		
Gov							0.003	0,349
Size	0.313	0.161	−0.086	0.472	0.236	0.037	0.197	0,017
Growth	1.652	0.031	0.216	0.653	1.789	0	1.431	0
Lev	1.83	0.03	0.417	0.53	2.177	0	2.504	0
Cash	0.331	0.082	0.268	0.045	0.372	0	0.42	0
Staff	−1.051	0	−0.495	0.023	−1.034	0	−0.975	0
GDP	0	0	0	0	0	0	0	0
SDG	0.007	0.866	**0.05**	0.033	0.008	0.599	−0.016	0,212
Sector	No		No		No		No	
Time	No		No		No		No	
Model	GMM-Sys-1 step		GMM-Sys-1 step		GMM-Sys-2 step		GMM-Sys-2 step	
R-squared								
Breusch-Pagan test								
Hausman test								
Sargan	95.24		63.439		22.21		23.2438	
Obs	161		86		161		161	

Note: GMM-2 steps model involves two-step estimation with an updated weight matrix. GMM-Sys combines level and difference equations into a single step. GMM-Sys-2 steps is like GMM-Sys-1 step but with two steps for greater precision.
Source: The authors

Despite the positive correlations found with financial performance, the market does not recognize or price them positively. A possible explanation for this phenomenon is that educational institutions are generally not very prone to ESG risks due to the nature of their activity. As Eccles & Viviers (2011, 401) state, “responsible investments are investment practices that integrate a consideration of ESG issues with the primary objective of providing higher risk-adjusted financial returns.” Educational organisations—whether institutions or providers of educational services and

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technologies—are less exposed to environmental risks than those in the extractive or industrial sectors, for example. Their main environmental impacts relate to facility construction, which are generally located in urban areas. Likewise, they use little inputs or raw materials in their activities which makes the possible effects of natural resource application on their finances almost null when compared with other industrial activities.

As for social aspects, these organisations also present relative security. With a labour force consisting mainly of graduated professionals, child labour is practically null, as well as the existence of unhealthy working conditions or slave labour; unlike what is eventually observed in sectors such as textiles, mining, and fashion. This suggests that social ESG aspects are perhaps already included in these organisations' objectives or scope since, as a rule, when one seeks to increase educational levels one is striving for a better market qualification, a better position in the organisational structures, and therefore a better condition for society. These characteristics intrinsic to the sector may lead ESG scores to be evaluated as expenses rather than protective actions for the investor.

Some caveats should be pointed out about these findings. First, we must consider the lack of a unified standard for elaborating ESG indexes and rankings. This factor alone may explain the differences in results found in the literature that has been highlighted in recent publications (Chen & Xie, 2022; Folger-Laronde et al., 2022; Fooladi & Hebb, 2022). "The absence of a common evaluation metric, however, presents problems of comparability among ratings, which should be subject to greater scrutiny by scholars and regulators" (Abate et al., 2021, 1454).

Second, some studies (Bruna et al., 2022; Chen & Xie, 2022) found a nonlinear relation between ESG scores and financial and market performance. Xie et al. (2019) found that intermediate ESG scores relate to positive outcomes, whereas lower or extremely high scores relate negatively to financial performance. Due to the limited nature of our study sample, we were unable to adopt a similar methodology capable of capturing these particularities.

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5 CONCLUSIONS

As no relation should be considered as evident, permanent, and universal, this paper examined the impact of for-profit educational companies' ESG scores on their market and financial results.

Our findings contribute to the literature in three important aspects. First, by finding a positive relation between the ESG Social score and financial performance, directly responding to Folger-Laronde et al.'s (2022) observation about the lack of focus on the role of social indicators on corporate results. For the authors, investing ESG areas could present relevant results for organisations, as identified in the present research. Second, by showing the differences between market results and financial results regarding ESG indexes, pointing out that even those who seek a socially responsible investment fail to adequately evaluate organisations with good ESG levels if these do not act as business risk reducers. Finally, by studying a particular and highly relevant economic segment from the perspective of education.

6 STUDY LIMITATIONS AND RECOMMENDATIONS

Study limitation lies particularly in the small sample size and its heterogeneity. Future studies should focus their analysis on understanding the social actions implemented by these institutions to identify the causes of better financial performance.

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3. Development of theoretical propositions (theoretical work)	√	√	√		
4. Theoretical foundation / Literature review	√	√	√		
5. Definition of methodological procedures				√	√
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