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Does CEOs' Educational Background Influence Firms' ESG Performance?

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ABSTRACT

Purpose:
This paper explores the relationship between CEO educational background and corporate social responsibility (CSR) performance in FTSE100 companies in the UK.
Design/methodology/approach:
The study uses ESG scores to measure CSR performance, and examines the impact of CEO's university ranking, educational attainment, professional background, MBA background, and participation in advanced management programmes on firms' ESG performance. **Findings:**
CEO educational background is considered to be an indicator of intelligence, as better-educated CEOs are thought to have greater management skills, experience, and innovation. However, we provide evidence that there is no significant association between CEO educational background and CSR performance in FTSE100 companies.
Research limitations/implications:
Overall, we add new evidence to a growing body of literature studying the association between personal characteristics of corporate executives and corporate social responsibility.
Originality/value:
This paper differs from previous articles that focus on the relationship between chief executive officer (CEO) characteristics and corporate social responsibility but instead attempts to answer the question of whether CEO educational background affects corporate social responsibility performance. Most of the literature examining CEO educational background links it to firm performance.

1. Introduction

Until the last century, the main objective of company operations has been the pursuit of profit, and company profit has been the main judgement of investors on the value of a company (He et al., 2015). However, this view has not only created tensions between managers and stakeholders but has also undermined the orderly and economic environment of capital markets. To reduce conflicts, a new trend has emerged in recent years in capital markets to earn profits while maintaining relationships with other stakeholders. This trend is known as corporate social responsibility (CSR) and has emerged as a critical issue in academia and practice over recent years. Using CSR to evaluate corporate performance is an important indicator of the extent to which companies are trying to take on CSR, and this has become a major trend.

Organisations' policies and practices in CSR are a valuable tool that can improve competitiveness and increase corporate differentiation (Epstein, 2008). The focus of business ethics work has been to examine the factors that enhance CSR performance (Ioannou & Serafeim, 2012). Sun et al. (2021) categorised previous research on the factors affecting CSR performance into external (e.g., laws and regulations, social pressure, institutional environment, product market competition, etc.) and internal (e.g., board characteristics, shareholding structure, etc.). However, scholars have focused their research on the impact of executive characteristics on CSR performance based on upper echelons theory (Sun et al., 2021; Yuan et al., 2019; Manner, 2010).

This paper differs from previous articles that focus on the relationship between chief executive officer (CEO) characteristics and corporate social responsibility (Manner, 2010) but instead attempts to answer the question of whether CEO educational background affects corporate social responsibility performance. Most of the literature examining CEO educational background links it to firm performance (e.g., Gottesman and Morey, 2006a; Bhagat et

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al., 2011). Where the literature has focused on the relationship between CEO educational background and CSR (e.g., Manner, 2010; He et al., 2015; Sun et al., 2021), it has rarely been regionally limited to the UK, and the findings have been inconsistent. Therefore, the question this paper seeks to answer is what is the relationship between CEO educational background and CSR in FTSE100 companies based on the UK environment.

Saidu (2019) argues that CEO education is an important source of CEO intelligence and believes that education is power. When better education is combined with experience, CEOs are likely to use greater management skills to help the organisation get through even the most tough times. Bowers and Seashore (1966) also believe that when company executives have a higher level of education, their expertise and management skills are more advanced. Therefore, highly educated CEOs are more innovative and able to process information than those who are less educated. Another reason Gottesman & Morey (2006a) consider educational background can affect firm performance is that better educated CEOs are more likely to use sophisticated methods to improve firm performance. Finally, the education of the CEO is related to the CEO's interpersonal network. In other words, CEOs with an elevated level and excellent quality of education are more likely to know other company executives or even government officials, and this may also improve CSR performance.

2. Review of Literature

2.1 Defining Corporate Social Responsibility

Corporate social responsibility (CSR) is becoming an issue of increasing attention (Yuan et al., 2019). Bowen (1953) identified CSR as the obligation of businesspeople to implement relevant policies, decisions, and actions in line with social goals and values. This is because Bowen (1953) believed that the decisions and actions of businesspeople affect the employees, customers and other stakeholders involved. Bowen's contribution to the definition of CSR and his academic work, the first to focus exclusively on CSR, has made Bowen the 'father of CSR' (Carroll, 1999). Carroll (1979) placed specific responsibilities and expectations on corporations, including economic, legal, ethical, and discretionary ones, and argued that the economic and social objectives of corporations were an integral part of CSR, making him the first to propose a definition that could unify CSR. In 1991, Carroll (1991) introduced the 'CSR Pyramid' to provide a useful CSR approach for executives who need to balance their shareholders' commitments with their obligations to the wider stakeholders. The CSR pyramid represents the four main responsibilities that Carroll (1991) defines for any company: 1) economic responsibility, which is the basis for the other levels of the pyramid; 2) corporate legal responsibility; 3) ethical responsibility, and; 4) philanthropic responsibility. Malik (2015), in a study compiling contemporary literature on CSR in enhancing company value, found that the specific structure regarding the definition of CSR is considered incredibly challenging by various researchers. Some researchers consider CSR as a function of a company's behaviour towards its different stakeholders (e.g., employees, regulators, customers, suppliers, investors, and communities) (Campbell, 2007; Cooper, 2004). Other researchers consider CSR as a multidimensional activity that includes social, political, environmental, economic, and ethical behaviour at the discretion of the company (Carroll, 1999; Devinney, 2009). The debate around what exactly is the social responsibility that companies should be burdened with continues to this day (Latapí Agudelo et al., 2019). However, CSR is often described as any autonomous business activity that aims to promote social welfare (Barnett, 2007).

2.2 Theoretical overview

Most of the literature (Sun et al., 2021; Manner, 2010; He et al., 2015; Bamber et al., 2010; Darmadi, 2013) that has examined the relationship between educational background or diversity and CSR in top management has used the theory of upper echelons proposed by Hambrick and Mason (1984). Upper echelons theory (UET) has been identified as one of the most influential perspectives in the strategy literature in terms of its ability to influence (Neely et al., 2020). Under the premise of limited rationality, UET represents the limitations of people in accessing, processing, and using information (Wang et al., 2016). And CEOs' cognitive foundations and personality traits influence the direction of their attention, content and interpretation of events given these limitations. It is also in this way that the cognitive base and personal characteristics of CEOs help them to make strategic choices by influencing their interpretation of the situations they face.

However, as information on the cognitive base, personal attributes and values of CEOs is difficult to collect, Hambrick and Mason (1984) suggested that researchers could measure them through observable managerial characteristics as an indicator of measurement. Thus, demographic characteristics such as age, education, etc. are often used as measures of CEO experience. As for CEO personality characteristics, UET scholars usually examine the impact of a single personality characteristic (e.g., narcissism) using psychological scales or indirect indicators such as content analysis (Chatterjee & Hambrick, 2007).

The UET asserts that CEO characteristics are reflected in companies' strategic actions, which in turn influence company performance. He et al. (2015) concluded that executive experience and competencies not only have an impact on corporate financial performance but also have a significant impact on CSR performance. This simple attribution of firm performance outcomes to the characteristics of its top management team and linking differences in a firm's strategic actions to the cognitive and behavioural diversity of its executives provides a new model for strategic leadership, corporate governance, corporate decision making, and many other factors and processes involved in the operation of a firm (Sadeghinejad, 2013).

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2.3 CEO Education and CSR

Education can be considered as a sign of one's knowledge and skill base (Hambrick & Mason, 1984). While it is impossible to talk about education without talking about qualifications. Today, graduating from a world-renowned university or one that is favoured by local companies tends to provide more job opportunities. The findings of Bhagat et al. (2011) show that the education level of executives significantly influences the hiring decisions of executives. The reason of focusing on the educational background of executives may be due to the difficulty of assessing the competencies of executives, whereas objective and easily measurable characteristics such as educational attainment will play a vital role in the executive recruitment process (Bhagat et al., 2011). This, in turn, is the practice of screening theory, which suggests that certifications provide individuals with something beyond the acquired skills. That is, individuals do not realise the value of the skills they have acquired until they are certified. Employers, in turn, choose to use academic qualifications as a screening tool when hiring employees, as they lack personal information about the candidates and cannot slowly get to know all of them one by one.

Frey & Detterman (2004) relate CEO competencies and cognitive abilities to their university entrance exam scores and conclude that CEOs who graduate from universities with higher average entrance exam scores are smarter and have stronger management skills. Bhagat et al. (2011) suggest three non-exclusive ways in which education affects the competencies of top executives such as CEOs. First, education contributes to the CEO's knowledge, perspective, ability to understand technology and comprehend abstract concepts. Second, CEOs with higher education are usually more persistent in challenging intellectual activities, and education is also a symbol of intelligence and competence. Thirdly, the interpersonal relationships that company executives acquire at university can be of immense help to their future careers. However, Bhagat et al. (2011) also emphasise that education is only one of the determinants of executive competence, but it is not clear how much the educational background of the executive will affect the performance of the company.

Gottesman & Morey (2006b) found a positive correlation between managers' educational background and their fund performance. Those managers who had attended more prestigious MBA programmes performed better than other managers. However, Gottesman & Morey (2006b) also point out that while managers who attended top MBA programmes outperformed non-MBA managers, there was slight difference in performance between managers who received top MBA programmes and those who received near top MBA programmes.

Hypothesis I: There is a positive relationship between the ranking of the university from which the CEO graduated and CSR performance (CEOs graduating from top-ranked universities have a more significant impact on CSR performance than those graduating from lower-ranked universities).

Hypothesis II: There is a positive correlation between CEO education level (e.g., Bachelor's, Master's, PhD, etc.) and CSR performance.

Hypothesis III: CEOs who attended the MBA programme had a significant impact on their company's CSR performance than those who did not attend the MBA programme.

There is relatively little literature linking the educational background of executives to CSR. One of them, Chang et al. (2017), in their study of the relationship between board characteristics and CSR based on the Korean context, divided the study into three areas of focus: board independence, social ties between CEOs and outside directors, and diversity of board education. Diversity in the type of education (e.g., law, engineering, business, etc.) implies different perspectives, skills and approaches to understanding and assessing the role of the firm (Chang, 2017). Chang et al. (2017) proposed the hypothesis that board education diversity has a U-shaped relationship with CSR in Korean firms because of the strong collectivist tendencies in Korean society. Chang et al. (2017) speculated that board diversity increases to a certain level when its educational diversity may have a negative impact on corporate CSR. And the results of the study corroborate that this hypothesis holds true. However, as this study only focuses on Korean society, the results still need to be verified as to whether they can be applied to countries in a Western social environment.

Executives with diverse types of education (different professions) have different impacts on the CSR performance of companies. Hitt and Tyler (1991) suggest that executives with only one type of formal education may develop different problem-solving skills and mindsets for assessing situations than those with different types of formal education. Executives who have a comprehensive understanding of the company's technology are better able to position the company accurately and enhance its competitiveness than those who do not. Manner (2010), building on previous research (Frank & Schultz, 2000; Selten & Ockenfels, 1998), concludes that students from business majors are more asocial and concerned with self-interest than students from other majors. Executives with science and engineering education are more committed to technology development and more inclined to collaborate on technology development than those with a business background. Hambrick & Mason (1984) believe that this is because business schools tend to instruct students (future managers) to be risk-averse and thus lack risk-taking. But those executives with technical training, engineering, medical, etc. backgrounds are more willing to take risks than to be risk-averse, and they tend to focus more on aspects of technology extension and competence development than on aspects such as company performance risk. So even though executives from business backgrounds are more inclined to act in their own self-interest, they may be more willing to invest in CSR-related projects in the long term because they are risk-averse and their self-interest is tied to the company's interests.

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Hypothesis IV: CEOs with a business background (relevant bachelor's degree) are positively associated with CSR performance.

Executive education is not only available through MBA programmes. In fact, currently, there is also the Advanced Management Programme (AMP) for senior executives and government officials, a short and intensive non-degree executive education programme, usually offered by leading business schools. The average length of an AMP programme is one month, a relatively brief period of time that not only enhances executive leadership but also expands their relationships. The impact of AMP on CEOs has not been explored in previous studies on the relationship between CEO educational background and CSR. Therefore, hypothesis V is presented here to test the impact of CEOs who attended AMP on CSR performance.

Hypothesis V: There is a positive relationship between CEOs who have attended advanced management programmes and CSR performance.

3. Methodology

3.1 Sample and data

The FTSE100 (Financial Times Stock Exchange 100 Index) was selected as the research sample for this study. It is an index of share prices produced by the FTSE Group based on the 100 largest companies listed on the London Stock Exchange (LSE). The total sample of CEOs in the FTSE100 available from the Boardex database was 86. Excluding 13 CEOs who lacked educational background (university information), 19 CEOs who lacked university major background and 1 CEO who lacked age background, the remaining 53 CEOs were finally used as the sample for analysis in this study.

Secondary data from the Boardex and Eikon datathat.s were used for this study. Information on the educational background of CEOs is collected from the Boardex database, while the Eikon database provides the ESG scores that rate each company's CSR performance.

3.2 Dependent Variables

The total corporate social responsibility performance score (ESGScore) and its subsets environmental (EnScore), social (SoScore) and corporate governance (GoScore) scores, for a total of four dependent variables. The ESG score is an objective and transparent measure of a company's relative CSR performance, commitment and effectiveness in terms of environmental (resource use, emissions and innovation), social (workforce, human rights, community and product responsibility) and corporate governance (management, shareholders and CSR strategy), based on publicly reported data. The total score is 0-100, with higher scores indicating better CSR performance of the company. The ESG score from the Eikon database is widely used in the literature on CSR research (Kutzschbach et al., 2020; Uyar et al., 2021).

3.3 Independent variables

University ranking (Ranking). Ranking equals 1 if the CEO has a bachelor's degree certificate from any of the three different rankings - THE (Times Higher Education), USnews, QS Global University Rankings - and 0 otherwise (including universities that do not appear in any of the three rankings). The three rankings were chosen because of the different geographical locations of the universities from which the CEOs graduated, but most are concentrated in the UK, the US and other European countries (e.g., France etc.) The THE, USnews and QS rankings all cover universities worldwide, but QS is more accurate for UK universities, while USnews is more accurate for US universities. These three organisations are also the most influential among global university ranking organisations. Therefore, this study has chosen to combine these three rankings to make a more accurate classification and judgement.

CEO Education Level (Level). 4 if the CEO has a PhD, 3 for a master's degree, 2 for a bachelor's degree and 1 for a lower degree.

CEO's university major background (Major). 1 if the CEO has a business background, 0 otherwise. As discussed in the literature review, CEOs with a business degree are more likely to be risk-averse than risk-taking and to have their interests linked to those of the company, thus focusing on CSR as a long-term risk-aversion program.

Master of Business Administration (MBA). 1 if the CEO has an MBA-related degree, 0 otherwise (Sun et al., 2021).

3.4 Control variables

Yuan et al. (2019) concluded that female CEOs have a stronger sense of social responsibility and therefore companies with female CEOs are more involved in CSR- related activities. Petrenko et al. (2016) concluded that the correlation between CSR and CEO age shows that the age of the CEO affects the importance of CSR in the company. CEO duality refers to a situation where the CEO is also the chairman of the board of directors, which reinforces managerial power (Pucheta-Martínez and Gallego-Álvarez, 2018). There are different views on the relationship between CEO duality and CSR. Barnea & Rubin (2010) argue that executives overinvest in CSR based on the private benefits it can bring to them such as a good reputation as a social citizen. Chin et al. (2013) believe that if the CEO and the chairman of the company are the same people, the increased power will help the CEO to further promote CSR initiatives within the company. However, Jo and Harjoto (2011) argue that CEO involvement in investing in CSR is to resolve conflicts

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of interest between different stakeholders. Adams et al. (2005), on the other hand, argue that CEO duality has a polarising effect on firm performance, including CSR. In this dissertation, it is assumed that a CEO with a dual role may be reluctant to engage in social activities or invest in CSR-related activities because the power that the CEO possesses at this time can be so great that he can make decisions without considering external stakeholders. However, after collating the data it was found that all the CEOs in this study were different from the chairman of the board and therefore there was no CEO duality. Research by Petrenko et al. (2016) suggests that larger companies have more resources to invest in CSR. So, this dissertation uses the natural logarithm of the total number of employees in each company to measure company size (Sun et al., 2021).

3.5 Research model

To test the hypotheses, this paper uses multiple regression equations and SPSS software for estimation analysis.

Model I：

$$ESGScore_i = \alpha + \beta_1 Ranking_i + \beta_2 Level_i + \beta_3 Major_i + \beta_4 MBA_i + \beta_5 AMP_i + \beta_6 Gender_i + \beta_7 Age_i + \beta_8 Size_i + \varepsilon_i \quad (1)$$

Model II:

$$EnScore_i = \alpha\alpha + \beta_1 Ranking_i + \beta_2 Level_i + \beta_3 Major_i + \beta_4 MBA_i + \beta_5 AMP_i + \beta_6 Gender_i + \beta_7 Age_i + \beta_8 Size_i + \varepsilon_i \quad (2)$$

Model III:

$$SoScore_i = \alpha + \beta_1 Ranking_i + \beta_2 Level_i + \beta_3 Major_i + \beta_4 MBA_i + \beta_5 AMP_i + \beta_6 Gender_i + \beta_7 Age_i + \beta_8 Size_i + \varepsilon_i \quad (3)$$

Model IV:

$$GoScore_i = \alpha + \beta_1 Ranking_i + \beta_2 Level_i + \beta_3 Major_i + \beta_4 MBA_i + \beta_5 AMP_i + \beta_6 Gender_i + \beta_7 Age_i + \beta_8 Size_i + \varepsilon_i \quad (4)$$

Here ESGScore is the dependent variable representing firm i's CSR performance score in 2022. EnScore, SoScore and GoScore are subsets of ESGScore, representing the environmental score, social score and corporate governance score that are components of the CSR performance score, and also the dependent variables in Models II, III and IV, respectively. $Ranking_i$, $Level_i$, $Major_i$, MBA_i and AMP_i are the independent variables; $Gender_i$, Age_i and $Size_i$ are the control variables. "i" represents the firm, α is a constant term, β_1-β_8 represent the impact coefficients and ε is the random error.

4. Results

4.1 Descriptive statistics analysis

Table 4.1 shows the results of the descriptive statistics based on the data collected, reflecting the minimum, maximum, mean, standard deviation and variance of all dependent, independent and control variables. The mean ESG score is 62.98. According to Refintiv's division of the 0-100 CSR score into four sections (0-25: indicating relatively poor ESG performance and inadequate data transparency; 25-50: relatively satisfactory ESG performance and moderate data transparency; 50-75: good ESG performance and above average data transparency; 75-100: ESG performance is excellent, and data transparency is high). This shows that the majority of companies in this sample have good ESG performance and above-average transparency of important ESG data in public reporting. The minimum and maximum ESG scores are 42.39 and 95.60 respectively, indicating that there is a gap in the importance and investment of CSR activities among the FTSE100 companies in the sample. The lowest value of 16.10 for the environmental dimension (Enscore) is the lowest of the four Refinitv bands, indicating that there are companies in the sample that do not pay any attention to environmental CSR activities, invest very little in this area and lack transparency in the data they have released. The three sub-dimensions of the ESG score, Environment aspect (Enscore), Social aspect (SoScore) and Corporate Governance aspect (GoScore), have an average score of 68.90, 74.76 and 76.75 respectively. It can be seen that the sample companies perform best in the area of corporate governance. The environmental and social aspects score in the third Refinitiv band (50-75 points) and perform well, but the sample companies perform better on the social aspects of CSR activities than on the environmental aspects. The mean value of 0.26 for the global ranking of the universities (Ranking) from which the CEOs graduated shows that most CEOs did not graduate from the top 30 universities worldwide. Descriptive statistics also show that the majority of CEOs have a bachelor's degree or higher. The mean values of 0.38, 0.36 and 0.11 for CEO's professional background (Major), CEO's MBA background (MBA) and CEO's participation in an Advanced Management Programme (AMP) respectively show that a minority of CEOs have Bachelor's degrees in business, MBA degrees and participated in executive development programmes. Table 4.2 also demonstrates that 89% of the CEOs in this sample data are male and the average age of CEOs is 55 years.

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Table 4.1 Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Variance
ESGScore	42.39	95.60	74.08	13.286	176.514
EnScore	16.10	93.71	68.90	20.251	410.089
SoScore	31.01	97.00	74.76	15.801	249.681
GoScore	43.67	96.04	76.75	12.781	163.351
Ranking	0	1	0.26	0.445	0.198
Level	2	4	2.70	0.607	0.369
Major	0	1	0.38	0.489	0.239
MBA	0	1	0.36	0.484	0.234
AMP	0	1	0.11	0.320	0.102
Gender	0	1	0.89	0.320	0.102
Age	43	66	54.91	4.773	22.779
Size	5.95	12.78	9.69	1.471	2.163

4.2 Descriptive statistics analysis

Table 4.2 shows the correlations between the different variables for further analysis of the correlation between CEO educational background and CSR scores. Most of the correlation coefficients are positive, indicating that most of the variables are positively correlated. The EnScore, SoScore and GoScore are three subsets of the ESGScore and all are dependent variables. Except for the correlation coefficient between ESGScore and its subsets, which was greater than 0.7, the correlation coefficients between all other variables were less than 0.7, indicating that the probability of the existence of multicollinearity was small and would not affect the results of the regression analysis.

The results show that CEO university ranking is positively but insignificantly correlated with the total CSR performance score, while CEO education is slightly negatively correlated with the total CSR score. CEO's professional background was positively but not significantly correlated with CSR performance. CEOs with MBA degrees and those who have attended advanced management training are negatively associated with CSR performance, which is not consistent with the hypothesis presented above. It can be inferred that all hypotheses in this paper would be overturned in their entirety. At the 10% significant level, the correlation coefficient between CEO university ranking and educational level is 0.301, which is positively correlated. In other words, the higher the education level of the CEO, the higher the university ranking. This phenomenon was also found in the research data collected, as those CEOs with a bachelor's degree or higher tend to have graduated from the top 30 undergraduate universities.

CEO's professional background has a positive correlation coefficient of 0.229 at the 10% significant level with scores on Corporate Governance, a subset of CSR scores. This result is consistent with the previous hypothesis that CEOs with professional backgrounds in business contribute to companies' scores on corporate governance. This could be explained by the fact that corporate governance is inherently a business school education and CEOs with professional backgrounds in business are better able to apply what they have learnt at university and are better able to use their strengths in managing their companies. CEOs' university ranking is positively correlated with their professional background at the 10% significant level with a correlation coefficient of 0.240. This means that the higher the university ranking, the more CEOs have a business background. This could be explained by business majors focusing more on the ranking of the university they graduated from, and in line with the literature review, CEOs who graduated from top-ranked universities have stronger inter-personal relationships that contribute to their subsequent careers.

At the 1% significant level, CEOs with an MBA are positively associated with their education level. In other words, the higher the level of education, the higher the chances of the CEO having an MBA degree. This illustrates the widespread importance attached to the MBA by highly educated CEOs. Table 4.3 also shows that the age of CEOs is negatively correlated with their university ranking at the 1% significant level, which means that the older the CEO, the lower the university ranking. When education was not widespread, people with university degrees were in the minority and could easily win the competition to get a job. Today, however, most people have a degree and the limited number of jobs available has led companies to increase their requirements for the background (e.g., university ranking) of candidates, resulting in the younger the CEO the higher his/her university ranking.

Age is negatively correlated with CEOs' professional background at the 10% significant level, which means that the younger the CEO, the more likely his/her major is business. Thus, it can be inferred that in recent years companies tend to prefer people with business backgrounds when selecting who should take on the role of CEO. The data in Table 4.3 also shows that the larger the company, the better the CSR performance and the more likely the CEO is to be a graduate of one of the top 30 universities. CEO with a bachelor's degree or higher and those with an MBA are more likely to work for larger companies.

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Table 4.2 Correlation Matrix

	ESGscore	EnScore	SoScore	GoScore	Ranking	Level	Major	MBA	AMP	Gender	Age	Size
ESGscore	1											
EnScore	.811***	1										
SoScore	.916***	.624***	1									
GoScore	.748***	.413***	.621***	1								
Ranking	.171	.093	.125	.204	1							
Level	-.019	-.120	.011	.056	.301*	1						
Major	.182	.041	.178	.229*	.240*	.197	1					
MBA	-.054	-.043	-.114	.072	-.091	.506***	.149	1				
AMP	-.054	-.068	.015	-.037	-.079	-.019	-.155	-.019	1			
Gender	.051	.210	.026	-.131	-.056	.118	-.213	.143	.128	1		
Age	.007	.145	-.003	-.190	-.377***	-.183	-.231*	.023	.095	.106	1	
Size	.437***	.289**	.487***	.309**	.262*	.294**	.120	.272**	.057	.032	.096	1

***. Correlation is significant at the 0.01 level (2-tailed).
**. Correlation is significant at the 0.05 level (2-tailed).
*. Correlation is significant at the 0.10 level (2-tailed).

4.3 Regression analysis

In this section, the regression results are analysed to test the proposed hypotheses in order to conclude whether there is a correlation between CEO educational background and CSR performance. Table 4.3 summarises the four models. R is the multiple correlation coefficient, which is the Pearson correlation coefficient between the predicted value and the actual value of the dependent variable (ESGScore/EnScore/SoScore/GoScore), and is an important indicator of the linear relationship between the two as well as reflecting the degree of fit of the regression. In general, R values are in the range between 0 and 1, and the closer the value to 1, the stronger the linear relationship. In this study, R is 0.525, 0.470, 0.587 and 0.430 respectively, showing a moderate linear correlation. R square represents the degree to which independent variables explain the variability in the dependent variable.

Table 4.3 shows that the R square in this study is 0.276, 0.221, 0.345 and 0.185 respectively, which means that the independent variables can explain 27.6% of the ESGScore variation, 22.1% of the EnScore variation, 34.5% of the SoScore variation and 18.5% of the GoScore variation. However, R square is calculated based on the sample data collected and there is a risk of overstating the extent to which the independent variable explains the dependent variable. In this case the adjusted R square indicator is more accurate than the R square because the calculation of the adjusted R square is not limited by the number of independent variables in the model. The adjusted R square in this study is 0.144, 0.080, 0.226 and 0.037 respectively, all of which are smaller than the value of R square, correcting for the exaggeration of the overall independent variables' explanation of the variance in the dependent variables in R square. Adjusted R square also represents the degree of influence, and from the values of the results of this study, the degree of influence is small.

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
ESGScore	0.525[a]	0.276	0.144	12.28985
EnScore	0.470[a]	0.221	0.080	19.42880
SoScore	0.587[a]	0.345	0.226	13.90322
GoScore	0.430[a]	0.185	0.037	12.54442

a. Predictors: (Constant), Size, Gender, AMP, Age, MBA, Major, Ranking, Level

As shown in Table 4.4 the significant level of CSR on CEO university ranking, education level, professional background, MBA background and advanced management programme experience in the model I is higher than 0.05. As shown in Table 4.5 the significant level of CSR on CEO university ranking, education level, professional background, MBA background and advanced management programme experience in the model I is higher than 0.05. This indicates that there is no significant correlation between CEO university ranking, professional background, MBA background, advanced management programme experience and education level with CSR. Although there is no significant correlation, the coefficient (beta) of CEO education level with total CSR score is -0.147, which indicates that CEO education level is negatively correlated with the total CSR score. Other variables that were negatively correlated with the total CSR score were CEOs' MBA degree possession, whether CEO had attended an executive programme and the control variable CEOs' age. Moreover, the control variable number of employees (Size) is significantly and positively correlated with ESGScore. This suggests that the number of employees in a company plays a role in CSR performance.

Table 4.4 Coefficient of Model I

Model (I)	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	37.549	25.147		1.493	.143
Ranking	.591	4.730	.020	.125	.901
Level	-3.214	3.607	-.147	-.891	.378
Major	4.924	3.819	.181	1.290	.204
MBA	-4.377	4.439	-.160	-.986	.329
AMP	-3.001	5.453	-.072	-.550	.585
Gender	5.248	5.608	.126	.936	.354
Age	-.058	.405	-.021	-.144	.886
Size	4.505	1.310	.499	3.438	.001

a. Dependent Variable: ESGscore

Table 4.5 shows that the independent variables in Model II are not significantly correlated with the dependent variable EnScore. It proves that CEO university rank, level of education, professional background, MBA background and executive course background are not significantly correlated with CSR-related environmental aspects scores. However, the control variable CEO age is positively correlated with environmental-related CSR scores. Also, the control variable number of employees is significantly and positively correlated with CSR environmental scores. This indicates that the number of employees in the company has a significant effect on CSR environmental aspects. In addition, CEO gender is positively correlated with CSR environmental scores at the 10% level of significance.

Table 4.5 Coefficient of Model II

Model (II)	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	5.576	39.755		.140	.889
Ranking	4.707	7.478	.103	.630	.532
Level	-8.452	5.703	-.253	-1.482	.145
Major	4.166	6.037	.101	.690	.494
MBA	-2.193	7.018	-.052	-.313	.756
AMP	-7.188	8.620	-.114	-.834	.409
Gender	16.903	8.865	.267	1.907	.063
Age	.482	.640	.114	.752	.456
Size	4.487	2.072	.326	2.166	.036

a. Dependent Variable: EnScore

The CEO's MBA background is significantly and negatively associated with CSR social aspect scores in Model III as shown in Table 4.7. It indicates that companies governed by CEOs with MBA degrees have poorer CSR social aspect scores than those governed by CEOs who do not have MBA degrees. That is, an MBA degree has a negative effect on enhancing CSR-related activities of CEOs on social aspects. The other independent variables were not significantly related to CSR social scores. However, the control variable number of employees was significantly and positively correlated with CSR social scores.

Table 4.6 Coefficient of Model III

Model (III)	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	25.779	28.449		.906	.370
Ranking	-4.084	5.351	-.115	-.763	.449
Level	-.846	4.081	-.033	-.207	.837
Major	6.146	4.320	.190	1.423	.162
MBA	-10.114	5.022	-.310	-2.014	.050
AMP	-.535	6.168	-.011	-.087	.931
Gender	4.845	6.344	.098	.764	.449
Age	-.222	.458	-.067	-.484	.631
Size	6.358	1.483	.592	4.289	<.001

a. Dependent Variable: SoScore

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From Table 4.7, there is no significant correlation between the independent variables and the dependent variable CSR corporate governance score. The control variable, number of employees, is significantly and positively correlated with CSR corporate governance scores. The following five conclusions can be drawn from the four models. Firstly, there is no significant relationship between the ranking of the CEO's university of graduation and CSR-related performance, thus rejecting hypothesis I. Secondly, CEOs' education level (below bachelor's degree, bachelor's degree, master's degree, PhD) is not significantly related to CSR-related performance, thus rejecting hypothesis II. Thirdly, there is no evidence of a significant relationship between CEOs with MBA degrees and CSR performance. Therefore, hypothesis III is not valid. Fourthly, no significant relationship is found between the presence of a bachelor's degree in business and CSR performance, and Hypothesis IV is not supported. Finally, the relationship between the presence of a CEO who has attended an advanced management course and CSR performance is not significant, so Hypothesis V is also rejected.

Table 4.7 Coefficient of Model IV

	Unstandardized Coefficients		Standardized Coefficients		
Model (II)	B	Std. Error	Beta	t	Sig.
(Constant)	84.909	25.668		3.308	.002
Ranking	1.664	4.828	.058	.345	.732
Level	-2.824	3.682	-.134	-.767	.447
Major	3.520	3.898	.135	.903	.371
MBA	1.400	4.531	.053	.309	.759
AMP	-.141	5.565	-.004	-.025	.980
Gender	-3.240	5.724	-.081	-.566	.574
Age	-.494	.413	-.185	-1.195	.238
Size	2.809	1.338	.323	2.100	.041

a. Dependent Variable: GoScore

5. Conclusion and Recommendations

5.1 Discussion and Contributions of the study

This paper explains the relationship between the educational background and CSR performance of CEOs of UK FTSE100 companies. These findings contribute to the understanding of the impact of CEOs' educational background on CSR performance and further refine research in the association between CEO personal attributes (e.g., educational experiences) and CSR performance. There was no difference in CSR performance between CEOs who graduated from prestigious universities and those who did not, suggesting that prestigious universities are not an accurate indicator of CEO competence. Therefore, when a company is looking for a CEO who can improve CSR performance, the university from which the CEO candidate graduated is not a reason to choose her/him. Similarly, education is not a measure of a CEO's competence in CSR performance. The negative correlation between CEOs with an MBA and CSR social performance suggests that MBA programmes should not focus too much on training students to become top executives in professional competencies, risk avoidance and other skills, but should also raise the profile of executives in terms of employee well-being, human rights education, corporate social responsibility and product responsibility education. In short, it is recommended that business school curricula increase their attention to and teaching of ethics and social responsibility. While companies with a large number of employees have a better CSR performance, those with a small number of employees (small size) should further improve their compensation system, improve employee happiness, create incentives and make employees a crucial factor in improving the CSR performance of the company. Overall, educational background is not a reliable measure of CEO competence in CSR performance, and companies wishing to improve CSR performance should choose to measure CEO competence in terms other than educational background.

In addition, the findings of this paper have implications for future researchers conducting similar studies. The findings show that the educational background of CEOs in FTSE100 companies is not related to CSR performance. Most of the previous studies (Bhagat, 2011) have focused on the relationship between CEO educational experience and firm performance, especially financial performance. The empirical results provided in this study can fill the research gap on the relationship between CEO educational background and CSR performance in UK-listed companies. Although the findings of this paper are contrary to most of the previous literature (Sun et al., 2021; He et al., 2015). However, it further illustrates that the same study can lead to different results in different country/regional contexts. It also suggests that iterative research on the same issue is worthwhile.

5.2 Limitations and future research directions

There are several limitations to this article. Firstly, this study only used CSR scores given by third-party organisations to measure CSR performance, which means that the findings may not be sufficient to prove a reliable relationship between CSR scores and CSR performance. In future studies, surveys and analyses can be added to measure CSR from various aspects to make CSR indicators more reasonable and scientific. In addition, this study used university ranking, professional background, and education degree as measures of CEO experience and values. The results obtained seem to be inconsistent with the upper echelon theory proposed by Hambrick and Mason (1984), which suggests that executives' personalities, experiences and values influence their predictions of outcomes and strategic choices, which in turn affect firm performance. On the one hand, it could be argued that the results of this study disprove the theory, while on the other hand, it could be argued that educational background plays a negligible role in the formation of CEO experience and values. More research may be needed to verify exactly which conclusion is favoured. Also, one of the measures of CEO educational background in this study is the current ranking of CEO undergraduate universities, but the ranking changes from year to year and varies from country to country, for example, the University of Sydney, which is a top university in Australia, is not a top university when judged against the top 30 global rankings in this study. Therefore, there is no consensus on how to determine whether a university is a top university.

Furthermore, this paper chose to use multiple linear regression to examine the relationship between CEO educational background and CSR performance in UK FTSE100 companies. However, linear regression, as the name suggests, only focuses on and analyses the linear relationship between the independent and dependent variables. However, CEOs' educational background and CSR performance may not be linearly related. For example, Chang et al. (2015) used a non-linear model to derive a U-shaped relationship between education and CSR. Therefore, in future studies, different models can be tried to derive results from multiple sources.

No time period was examined for the study in this paper and the samples used are the most recent which is 2022. Therefore, there is no time horizon so future research will need to determine if the results of this study can be validated over a longer time horizon sample. Moreover, as the results of this study are based on a single country study and do not cover all UK-listed companies, the results of this study represent a more in-depth understanding of the link between CEOs and CSR in FTSE100 companies. Moreover, due to the problem of partial data missing in the sample, there were only 53 valid data for the FTSE100 companies. Therefore, the conclusion in this study that there is no significant relationship between CEO educational background and CSR can be interpreted as a result of the sample data being too small. A different conclusion might be reached if studying the relationship between CEO educational background and CSR for FTSE250 or UK-wide listed companies. Future research may therefore benefit from testing whether there is a linear relationship across UK-listed companies (or FTSE250 etc.) or in other national/regional contexts, including other European countries, North America and Asian countries.

In summary, this study explored the relationship between CEO's educational background and corporate social responsibility (CSR). Previous studies based on Asian country contexts suggest that CEOs with better educational backgrounds are more likely to engage in CSR whereas, this study uses the UK as a contextual premise to conclude the opposite of the findings in Asian (Sun et al., 2021; He et al., 2015) country contexts and similar to the findings in the US (Gottesman & Morey, 2006a) context. Provides additional evidence of the link between CSR and educational background, thus advancing the existing knowledge of the relationship between CEOs and CSR.

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